Appendix B.6

Surface Water Resources Baseline Report

Crawford Nickel Project: Surface Water Resources Baseline Report

September 30, 2024

Prepared for:

Canada Nickel Company

Prepared by:

Stantec Consulting Ltd.

Limitations and Sign-off

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Executive Summary

Canada Nickel Company (Canada Nickel) proposes to develop, construct, operate, and progressively reclaim a new open pit nickel mine and processing facility, collectively known as the Crawford Nickel Project ('the Project'), approximately 42 kilometres (km) north of Timmins, Ontario. This Surface Water Resources Baseline Report has been completed to inform the Impact Statement. It has been prepared pursuant to the *Impact Assessment Act,* 2019 and in consideration of the Tailored Impact Statement Guidelines: Crawford Nickel Project. This report establishes the climatic, hydrologic, and water quality setting of the Project.

Climate variables summarized in this report include air temperature, precipitation, snowfall, and climate change impact modelling. Climate data was obtained from relevant Environment and Climate Change Canada (ECCC) climate stations and a 1991 – 2020 climate normal was developed following ECCC methods. The 1 normal annual precipitation is 801.8 mm with snow cover typically starting in October and ending in April. Using a Thornthwaite environmental water balance, annual actual evapotranspiration is estimated to be 473.4 for climate normal conditions.

Three climate change scenarios were modelled to characterize the future climate conditions of the site during the 2071-2100 period. These scenarios are identified as unique Shared Socioeconomic Pathways (SSP), which are defined by the Intergovernmental Panel on Climate Change (IPCC). The moderate emissions scenario is represented by the SSP2-4.5 scenario. Results of the climate change models indicate that the future of the Project site can expect rainfall and air temperature to increase. A comparison of the climate change adjusted intensity-duration-frequency (IDF) curves to climate normal IDF curves identified that storms of various durations and return periods increased in rainfall depth on average by 22.7% for emission scenario SSP2-4.5. Temperature changes are estimated for the 2071-2100 period based on a SSP2-4.5 scenario, relative to a 1971 – 2000 baseline period. Summer, spring and fall temperatures are expected to increase by 3.7ºC. Winter temperatures are expected to increase by 5.3ºC.

Regional hydrologic variables addressed by the baseline report include annual flows, monthly flows, peak flows, low flows and environmental flows using extensive historic datasets for the region. Regional relationships were developed for annual flows, peak and low flows and environmental flows using hydrometric station data from applicable Water Survey of Canada (WSC) hydrometric stations.

Monthly and annual flow regressions were developed for the five selected regional WSC stations. The regression equations were then applied to the watersheds of the Project site area. The coefficient of determination (R^2) between flow and catchment area for mean annual flow (MAF) was 0.99 indicating a high level of correlation. The R^2 value for the mean monthly flow (MMF) regressions ranged from 0.897 and 0.996, with a mean of 0.97 indicating a high level of correlation.

The regional relationships for peak flows (2, 5, 10, 25, 50-and 100-year return periods), low flows (7Q10, and 7Q20) and flow duration curves were developed. The R^2 values for peak flow regression ranged from 0.76-0.82, and values for 7Q10 and 7Q20 were 0.893 and 0.886, respectively.

A Thornthwaite environmental water balance for the PA was developed for 1991-2020 climate normal, wettest recorded year and driest recorded year. The climate normal, driest and wettest year annual actual evapotranspiration is estimated to be 473 mm, 453 mm and 510 mm, respectively. The climate normal total groundwater recharge (infiltration) estimated for the project site is 164.1 mm/year, which is 28.7% of the total precipitation amount. The climate normal total stream flow estimate of 328.2 mm represents a streamflow (runoff) coefficient of 41%.

The regional assessment determined that baseflows annually contribute to 30% of total streamflow, increasing to 59% during winter months.

The Project site has established hydrometric stations to monitor continuous watercourse flows and lake water levels using water level dataloggers and periodic manual flow measurements. Hydrometric monitoring was conducted from 2021 to 2023 at 11 stations, including two stations performing lake level monitoring. *In situ* flow measurement results, rating curves, and station hydrographs for each applicable station were developed and presented. Hydrometric station watershed areas ranged from 7.2 to 199 km^2 and ice free condition *in situ* flow measurements were used to develop rating curves at seven stations.

The development of hydrological model (HEC-HMS) of the three site watersheds was developed and calibrated using prorated flows from a nearby WSC streamflow monitoring station (Porcupine River at Hoyle, # 04MD004). The developed model was able to represent baseflows, spring freshet flow peaks and adequately represented precipitation events recorded.

Regional and local water quality assessments were conducted to analyze and describe water quality conditions in the Project Area (PA). Regional water quality data was obtained from seven Provincial Water Quality Monitoring Network stations. In the PA, a total of 317 surface water quality samples were collected from 2021 to December 2023 at 33 watercourse locations and 13 waterbody locations across three main watersheds (Jocko Creek, North Driftwood River and West Buskegau River). To facilitate data analysis and discussion, results were assessed by grouping monitoring stations located in waterbodies and watercourses. Monitoring locations were also aggregated by watershed and were assessed for water quality relationships of surface water feature type, watershed and seasonality.

Water quality samples were collected and analyzed for general chemistry, nutrients, chrysotile asbestos, total suspended solids (TSS), cyanide, and total and dissolved metals. Temperature, dissolved oxygen, specific conductivity, pH, colour, odour and visual observations were measured *in situ* using a calibrated multi-parameter water quality meter. Temperature and dissolved oxygen profiles at regular depth intervals were monitored in six lakes. Results were compared to Canadian Council of Ministers of Environment (CCME) water quality guidelines for protection of freshwater aquatic life (CCME CWQGs-FAL) and Ontario provincial water quality objectives (PWQOs).

Six lakes had temperature and dissolved oxygen profiles measured at regular intervals and during the summer and early fall months in 2022 to 2023, which were observed to be thermally stratified with low oxygen to anoxic hypolimnions.

Local general water quality in the watercourses and waterbodies identified slightly acidic conditions with 25th percentile values below the CWQG-FAL and PWQO lower limit (6.5). Alkalinity is relatively low with limited acid buffering potential. Waters within the PA are typically classified as medium hard with soft waters in the Jocko Creek and West Buskegau River watersheds.

Three parameters were identified as parameters of potential concern (PoPCs) where local watercourse and waterbody 75th percentile values exceeded the corresponding guideline, in particular the PWQOs. Total phosphorus (TP) had a 75th percentile value of 0.032 mg/L for watercourses and 0.021 mg/L for waterbodies with PWQO TP values of 0.030 mg/L and 0.020 mg/L, respectively. For the assessment of aluminum, CWQG-FAL criteria was used to evaluate total aluminum and PWQO criteria (clay-free samples) used to evaluate dissolved aluminum. The 75th percentile value for dissolved aluminum exceeded the PWQO criteria of 75 µg/L for the 0.2 µm filtered samples, with a value of 107 µg/L in watercourses. Total iron is identified as a Parameter of Potential Concern (PoPC) as the 75th percentile values of both the watercourses and waterbodies exceeded the CWQG-FAL and PWQO value of 300 µg/L. There were no substantial differences in water quality parameter results between the three watersheds in the PA (Jocko Creek, North Driftwood River, and the West Buskegau River).

Other metals and metalloids that reported at least one exceedance of the applicable guideline values as part of the local watercourse and waterbody monitoring program include: total cadmium, total cobalt, total copper, total lead, dissolved manganese, mercury, total selenium, total silver, total zinc and total zirconium.

Aggregated water quality data by water feature type, specifically watercourses (including streams, rivers, and creeks) and waterbodies (lakes and ponds), observed typically lower concentrations of nutrients, metals and metalloids in waterbodies compared to watercourses with fewer regulatory guideline exceedances.

Comparison of the local and regional water quality datasets identified total phosphorus, total aluminum, and total iron as common PoPCs. Regional water quality data identified additional PoPCs that were not observed in the local data and are not considered PoPCs in the PA were total arsenic, total cadmium, total cobalt, total copper, total lead, total silver and total zinc. Both the regional and local water quality exhibited seasonal trends for various parameters. Concentrations of parameters were typically higher in the late fall and winter months and lower in the spring and summer months (total ammonium/total ammonia (as N), TP, aluminum, iron, lead and zinc). A 95th percentile confidence interval was calculated for both local and regional datasets with the regional dataset typical having greater variability potentially due to the longer monitoring period.

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Acronyms and Abbreviations

AAFC	Agricultural and Agri-Food Canada
AET	Actual Evapotranspiration
ATI	Antecedent Temperature Index
BFI	baseflow index
CALA	Canadian Association for Laboratory Accreditation
CCME	Canadian Council of Minister of the Environment
CMIP	Coupled-Model Intercomparison Project
CN	curve number
CoC	chain of custody
CSA	Canadian Standards Association
CSP	Corrugated Steel Pipe
CWQG-FAL	Canadian Water Quality Guidelines for Protection of Freshwater Aquatic Life
DARM	drainage-area ratio method
DEM	Digital Elevation Model
DFO	Department of Fisheries and Oceans Canada
DO	dissolved oxygen
DQO	data quality objective
ECA	Environmental Compliance Approval
ECCC	Environment and Climate Change Canada
FDC	flow duration curve
GIS	Geographic Information Systems

HEC-HMS	Hydrologic Engineering Centre, Hydrologic Modelling System
HYDAT	Hydrometric Data
HYFRAN	Hydrological frequency analysis
IDF	Intensity Duration Frequency, or Inflow Design Flood
IPCC	Intergovernmental Panel on Climate Change
LiDAR	light detection and ranging
LOM	Life of Mine
LRIA	*Lakes and Rivers Improvement Act*
LSA	Local Study Area
MAF	mean annual flow
MDMER	Metal and Diamond Mining Effluent Regulations
MECP (MOE)	Ontario Ministry of the Environment, Conservation, and Parks (formerly Ministry of the Environment [MOE])
MFL	million fibres per litre
MMF	mean monthly flow
MNR	Ministry of Natural Resources (formerly Ministry of Natural Resources and Forestry [MNRF])
NEH	National Engineering Handbook
ng	nanogram
NGO	Non-governmental Organization
NPA	*Navigation Protection Act*
NRCS	National Resources Conservation Service (formerly Soil Conservation Service)
OMAFRA	Ontario Ministry of Agriculture, Food, and Rural Affairs (now referred to as the Ministry of Agriculture, Food and Agribusiness and Ministry of Rural Affairs)

ORP	Oxidation Reduction Potential
OWIT	Ontario Watershed Information Tool
OWRA	*Ontario Water Resources Act*
PET	Potential Evapotranspiration
PA	Project Area
PoPC	Parameter of Potential Concern
PRF	Peak Rate Factor
PWQO	Ontario Provincial Water Quality Objectives
PWQMN	Provincial Water Quality Monitoring Network
RCP	Representative Concentration Pathways
RDL	reportable detection limit
RSA	Regional Study Area
SCS	Soil Conservation Service (now referred to as Natural Resources Conservation Service)
SSP	Shared-Socioeconomic Pathways
std. dev. (SD)	standard deviation
TCU	True Colour Unit
TP	Total Phosphorus
TIS Guidelines	Tailored Impact Statement Guidelines
tpd	tonnes per day
TR-55	Technical Release for urban hydrology for Small Watersheds
TMF	Tailings Management Facility
UNB	University of New Brunswick
USACE	US Army Corps of Engineers

USDA	United States Department of Agriculture
USGS	United States Geological Survey
µg	microgram
µS	microsiemens
VC	Valued Component
VPA	Victor Power Airport, Timmins
WMO	World Metrological Organization
WQG	Water Quality Guideline
WSC	Water Survey of Canada
WSP	WSP E & I Canada Limited
7Q10	10-year low flow, 7-day average
7Q20	20-year low flow, 7-day average
°C	degrees Celsius

1 Introduction

Canada Nickel Company (Canada Nickel) proposes to develop, construct, operate, and progressively reclaim a new open pit nickel mine and processing facility, collectively known as the Crawford Nickel Project ('the Project'), approximately 42 kilometres (km) north of Timmins, Ontario. The Project is being assessed in accordance with the *Impact Assessment Act*, 2019.

Stantec Consulting Ltd. (Stantec) has been retained by Canada Nickel to conduct an assessment of surface water resources for the Project. This Surface Water Resources Baseline Report has been completed to inform the Impact Statement. It has been prepared pursuant to the *Impact Assessment Act,* 2019 and in consideration of the Tailored Impact Statement Guidelines: Crawford Nickel Project (Appendix A.1 of the Impact Statement).

The information presented in this report is intended to summarize and document the existing conditions of surface water resources, to support the preparation of the Impact Statement.

The information presented herein was obtained from publicly available federal and provincial resources for hydrological, climate, and physiographic data and from local project hydrology and water quality monitoring programs.

1.1 Project Location and Setting

The Project is located approximately 42 km north of the City of Timmins, Ontario, in the geographic townships of Crawford, Carnegie, Kidd, Lucas, Beck, Nesbitt, Wark, and Prosser (Figure A.1, Appendix A). A small portion of the Project extent within the geographic townships of Kidd and Wark also lies within the municipal boundary of the City of Timmins.

1.2 Project Overview

The Project includes the development of an Open Pit, Stockpiles, two ore processing plants, and other mine related infrastructures, as well as new rail spur line and the relocation of Highway 655 and 500 kilovolt transmission line. Ore will be extracted from a single Open Pit that will be divided into an East Zone and Main Zone. The Project has a mineral reserve estimate of 1,715 million tonnes and an expected project life of 41 years.

The Crawford Project site is located approximately 42 km north of the City of Timmins, Ontario, in the geographic townships of Crawford, Carnegie, Kidd, Lucas, Beck, Nesbitt, Wark and Prosser. A small portion of the Project extent within the geographic townships of Kidd and Wark also lies within the municipal boundary of the City of Timmins.

Based on the current Project design, the maximum rate of ore extraction will be up to 240,000 tonnes per day (tpd) during year 5 of operations and an average rate of 160,000 tpd over the life of mine. The two ore Processing Plants and associated service facilities will process run of mine ore delivered to primary

crushers to produce nickel concentrate, iron concentrate, and tailings at a rate of approximately 60,000 tpd at the start of mine life, ramping up to a maximum of 120,000 tpd. In addition to nickel and iron, other metals such as cobalt, chromium, palladium and platinum are expected to be recovered from concentrate streams.

Based on the proposed processing rate and current information regarding the ore body, the current life of the proposed Project is expected to be approximately 41 years. Mining would be completed at a faster pace than milling, thus mining of ore would occur for about 30 years, then milling alone for the last 11 years.

Concentrate from the processing plants will be loaded onto rail cars and shipped via the rail spur line for refinement offsite.

1.3 Study Objectives

The Surface Water Resources Baseline Report provides information to inform the Impact Statement for the Project. The objectives of this report are to describe and present available information on baseline conditions in the study area. The scope of the Surface Water Resources Baseline Report includes the following:

- Collect and review available information and data
- Conduct applicable field work
- Analyze baseline hydrologic and water quality conditions

To facilitate reference between this baseline report and the corresponding federal Tailored Impact Statement (TIS) Guidelines, a concordance table has been developed (Table 1.1).

Table 1.1 Concordance Table for Topics Listed in Tailored Impact Statement Guidelines

Guideline Information Requested	Addressed in Report Section
Hydrology	
Hydrometeorological information (temperature, precipitation, evapotranspiration), based on data from nearby weather stations.	Sections 4.1.1.1 and 5.1.7
Describe and illustrate on one or more topographic maps, at appropriate scales, the drainage basins in relation to key project components. On the map(s), identify waterbodies and watercourses, including intermittent streams, flood risk areas, wetlands, watershed and subwatershed boundaries, and direction of flow.	Sections 4.1.1.2, 4.1.4.2.1, 5.2.3 and 5.2.4 Wetlands – refer to the Vegetation, Riparian and Wetland Environments Supplemental Baseline Report (Appendix B.7.1 of the Impact Statement) Additional information on waterbodies and watercourses – refer to the 2021-2023 Fish and Fish Habitat Baseline (Appendix B.8.2 of the Impact Statement) and the Fish and Fish Habitat Supplemental Baseline Report (Appendix B.8.1 of the Impact Statement)

Guideline Information Requested	Addressed in Report Section
List waterbodies and watercourses (permanent, intermittent, and ephemeral) that may be directly or indirectly affected by the Project.	Sections 5.1.5 and 5.2.3
Provide a table that groups waterbodies and watercourses by subwatershed and provide information about the type and size of the waterbodies and watercourses.	Sections 4.2.1, 5.2.3.1, 5.2.3.3, Appendices B.1 and B.2
Flow hydrographs and corresponding water levels for nearby streams and rivers including any site-specific rating curves (and manually collected flow/level data).	Sections 4.2.1, 5.2.3.1 and Appendix B.2
Stage hydrographs for lakes expected to be affected by the Project showing the full range of seasonal and inter-annual water level variations.	Sections 4.2.1, 5.2.3.1 and Appendix B.2
A description of ice cover, thickness and conditions and the timing of freeze-thaw cycles for each waterbody and watercourse potentially affected by the Project.	Sections 4.2.1 and 5.2.3.1
Each waterbody potentially affected by the Project, including bathymetry, maximum and mean depths, vertical profile information, information on stratification and turnover, and sediment composition (e.g., particle size analysis and sediment quality).	Waterbody bathymetry - Sections 4.2.1 and 5.3.2 Vertical profile, stratification and turnover information – Sections 4.2.2.2.1, 5.3.2.1.1 and Figure A.14 in Appendix A Additional information on waterbody bathymetry refer to the 2021-2023 Fish and Fish Habitat Baseline (Appendix B.8.2 of the Impact Statement) and the Fish and Fish Habitat Supplemental Baseline Report (Appendix B.8.1 of the Impact Statement) Information on sediment composition refer to the 2021-2023 Fish and Fish Habitat Baseline (Appendix B.8.2 of the Impact Statement) and the Fish and Fish Habitat Supplemental Baseline Report (Appendix B.8.1 of the Impact Statement)
Present a conceptual model for the hydrological environment, as appropriate to describe baseline conditions for surface waters. The model should be developed to support the assessment of potential changes to water and sediment quantity and quality in watercourses, waterbodies, and wetlands, with input from regulators and Indigenous nations.	Conceptual model (Regional hydrology assessment) – Sections 4.1.2, 4.1.3, 5.2.1, 5.2.2 and Appendix B.4 Hydrologic model - Sections 4.1.4, 5.2.3.4 and Appendix B.1
Surface Water Quality	
Describe the surface water quality baseline characterization program, including sampling site selection and locations (upstream, within the zone of influence of the Project, and downstream), monitoring duration and frequency, sampling methodology, and analytical protocol, including quality assurance and quality control measures. • characterization program should include sampling locations within the PA, LSA, and RSA, and should include reference locations that are unlikely to be impacted by the Project.	Sections 4.1.5, 4.2.2, 5.3 and Appendices B.5, B.6, B.7, B.8 and B.9

Guideline Information Requested	Addressed in Report Section
Provide baseline data for relevant physicochemical parameters and chemical constituents for surface water quality. • physicochemical parameters may include temperature, pH, electrical conductivity, dissolved oxygen, turbidity, total suspended solids, total hardness, total dissolved solids. • relevant chemical constituents may include major and minor ions, total and dissolved trace metals (including arsenic), radionuclides, total mercury, methylmercury, polycyclic aromatic compounds, nutrients, organic and inorganic compounds, or other compounds of potential concern. • water sample collection and analysis should use appropriately sensitive detection limits and the data should illustrate the seasonal and inter-annual variability in baseline surface water quality with sufficient years of baseline data to fully characterize natural variability, including possible variabilities due to groundwater–surface water interactions.	Sections 4.1.5, 4.2.2, 5.3 and Appendices B.5, B.6, B.7, B.8 and B.9
Describe baseline concentrations for relevant physicochemical parameters and chemical constituents in relation to applicable water quality guidelines.	Sections 4.1.5, 4.2.2, 5.3 and Appendices B.5, B.6, and B.7
Describe springs and any other potable surface water resources within the PA as required, and describe their current use, potential for future use, and whether their consumption has Indigenous cultural importance.	Section 5.1.6 Additional information on Indigenous cultural importance in the Assessment of Potential Effects on Indigenous Interests (Chapters 25 to 28 of the Impact Statement)

2 Regulatory Setting

There are several federal and provincial regulatory requirements that may apply to the Project, including environmental assessment and other environmental permitting obligations.

2.1 Federal Requirements

The Project is being assessed in accordance with the *Impact Assessment Act, 2019*.

The requirements to consider potential Project effects on surface water resources are described in Section 8.6 of the TIS Guidelines for the Project.

Fisheries Act

There are several sections and subsections of the *Fisheries Act* that pertain to surface water and potential interactions with the Project; these are listed below:

- *Fisheries Act*, sections 34.3, 34.4(1), 35(1) and 36(3) - The federal *Fisheries Act* requires the protection of fish habitat and prohibits deposit of deleterious substance in all watercourses that are fish bearing
- Metal and Diamond Mining Effluent Regulations (MDMER) – The MDMER, created under the *Fisheries Act*, authorizes the deposit of effluent containing deleterious substances prescribed in the regulations provided certain conditions are met. Effluent must meet concentration-based limits for specific substances, have a pH that is between a minimum and maximum level, and must not be acutely lethal. The MDMER sets out the maximum allowable limits for specific metals and other parameter concentrations in discharge resulting from the Project. The MDMER also sets forth a variety of effluent monitoring requirements, as well as the Environmental Effects Monitoring (EEM) criteria to be implemented and reported on during the operational phase of the Project. MDMER limits for new metal and diamond mines (effective June 1, 2021) from Table 1 of Schedule 4 were used in this assessment.

Navigation Protection Act

The *Navigation Protection Act* (NPA), administered by Transport Canada, applies to the construction of works that affect the navigability of waters. Approval from the Minister of Transport is required for construction of any structure in, over, under, or through navigable water that would interfere with navigation (e.g., bridge, boom, pipeline, outfall, effluent diffuser, or dam).

2.2 Provincial Requirements

Mining Act

The *Mining Act*, administered by the Ministry of Mines (MINES), relates to prospecting mineral exploration, mine development and rehabilitation in Ontario, in a manner consistent with the recognition and affirmation of existing Aboriginal and treaty rights in section 35 of the *Constitution Act*, 1982, including the duty to consult, and to minimize the impact of these activities on public health and safety and the environment. Approval is required for mine closure plans by MINES pursuant to Ontario Regulation (O.Reg.) 35/24, which include permitting of offline mine dams in the closure plans.

Lakes and Rivers Improvement Act

The *Lakes and Rivers Improvement Act* (LRIA), administered by the Ministry of Natural Resources (MNR), applies to the design, construction, operation, maintenance, and safety of waterbodies and watercourses in Ontario. For the purposes of the LRIA, this includes online dams, channelizations, water crossings, enclosures, and pipeline installations. Approval is required from the Minister of Natural Resources and Forestry for the construction of online dams, culverts, bridges, and channelizations which may alter fish habitat, natural amenities, and riparian owner rights. In cases where the minimum applicability requirements of the LRIA are not met the *Public Lands Act* may be applicable.

Ontario Water Resources Act and Related Regulations

The *Ontario Water Resources Act* (OWRA) is the principal statute governing water quality and quantity in Ontario. It is a general management statute that applies to groundwater and surface water. Administered by the Ministry of the Environment, Conservation and Parks (MECP), the OWRA contains important regulations that protect water resources, including

- Ontario Regulation 387/04: Water Taking and Transfer Regulation (O.Reg. 387/04), which requires a permit for water takings of more than a total of 50,000 L/d (with some exceptions). section 34 of the OWRA requires the proponent to obtain a Permit to Take Water and section 9 of O.Reg. 387/04 requires all permit holders to collect, record, and report data on daily volumes of water withdrawals.
- Section 53 of the OWRA states that subject to section 47.3 of the Environmental Protection Act, no person shall use, operate, establish, alter, extend or replace new or existing sewage works except under and in accordance with an environmental compliance approval. 2010, c. 16, Sched. 7, s. 3 (9).

Conservation Authority Permitting

Ontario Regulation 165/06 empowers the Mattagami Region Conservation Authority to control development (e.g., placement of fill or alteration of a watercourse) within regulated areas (flooding, erosion, dynamic beaches). Construction within a Conservation Authority regulated area may require a permit in accordance with O.Reg. 165/06.

The following are the Project watersheds within Conservation Authority boundary areas:

- Jocko Creek is a part of the Mattagami Region Conservation Authority potentially requiring a conservation authority permit for works within the watershed.
- The West Buskegau River and North Driftwood River watersheds are not managed by conservation authorities.

2.3 Regulatory Guidance and Criteria to Evaluate Surface Water Quality

The primary regulatory guidance and criteria applicable to this report include the following:

- Ontario Provincial Water Quality Objectives (PWQOs) (MOEE 1994b)
- Ontario Ministry of the Environment and Energy (MOEE). Policy B-1-5 (MOEE 1994a)
- Canadian Council of Ministers of the Environment's Canadian Water Quality Guidelines for Protection of Freshwater Aquatic Life (CCME CWQG-FAL) (CCME 2024)
- Schedule 4 of Metal and Diamond Mining Effluent Regulations (MDMER) SOR/2002-222 under the *Fisheries Act*
- British Columbia Ministry of Environment and Climate Change Strategy (BC MECCS) for the protection of aquatic life guideline for sulphate

The MECP will require an Industrial Environmental Compliance Approval (ECA) for the operation of the industrial sewage works (water management infrastructure) at the site. The PWQOs (MOEE 1994b) are used to evaluate surface water quality with respect to discharges at a site and requires effluent receiving water assessments to follow its Policy B-1-5 (MOEE 1994a).

CCME CWQG-FALs are objectives and guidelines that identify baseline water quality thresholds for this Project site (CCME 2024). The MDMER Schedule 4 Table 1 sets out effluent limits for a number of parameters. The CCME CWQG-FAL provides water quality guidelines are used to assess baseline water quality. The BC MECCS for the protection of aquatic life also provides water quality guidelines are used to evaluate sulphate concentrations.

The CCME CWQG-FALs, PWQOs and BC MECCS used to evaluate baseline water quality are listed in Table 2.1. When values differ, the lowest guideline value is applied to identify exceedances. For narrative or table guideline values, guideline values are calculated using required site-specific parameter input values. For PWQOs with a standard Table 2 PWQO and an Interim PWQO (arsenic, cadmium, lead, zinc), the interim PWQO is used to identify exceedances. Un-ionized ammonia is calculated and assessed by comparing calculated concentrations to the CCME CWQG-FAL and PWQO of 0.016 mg as N/L and 0.0165 mg as N/L, respectively.

Table 2.1 Surface Water Quality Guidelines

Parameter		Units	Reportable Detection Limit (RDL)	CCME CWQG-FAL Guidelines		Provincial Water Quality Objectives
				Short-term	Long-term	
Field pH		-	0	-	6.5 – 9	6.5 – 8.5
Field Temperature		°C	-5	-	-	-
Field Dissolved Oxygen (DO)		mg/L	0	-	Narrative [l]	Table [u]
Field conductivity		µS/cm	0	-	-	-
Alkalinity		mg/L as $CaCO_3$	2	-	-	-
Colour		TCU	5	-	-	-
Dissolved organic carbon		mg/L	1	-	-	-
Total Hardness (as $CaCO_3$)		mg/L	0.1	-	-	-
Ammonia (as N)		mg/L	0.005	-	Table [d]	
Calculated un-ionized ammonia (as N)		mg/L	NA		0.016	0.0165
Nitrate (as N)		mg/L	0.02	124	3	-
Nitrite (as N)		mg/L	0.01	-	0.06	-
Total Nitrogen (as N)		mg/L	1	-	-	-
Total Phosphorus (as P)		mg/L	0.002	-	Guidance Framework [k]	Guidance [w]
Sulphate		mg/L	0.3	-	Table [m] (BC MECCS guideline)	
Chloride		mg/L	0.2	640	120	-
Oil and Grease, Total		mg/L	1	-	-	-
Total Suspended Solids		mg/L	0.67	-	Narrative [c]	
Total Dissolved Solids		mg/L	10	-	-	-
Radium 226		Bq/L	0.005	-	-	1
Chrysotile Asbestos		MFL	0.20	-	-	-
Fluoride		mg/L	0.06	-	0.12	-
Dissolved Phosphorus		mg/L	0.05	-	-	-
Cyanide	Free	mg/L	0.001		0.005	0.005
	Total	mg/L	0.002	-	-	-
	Weak Acid Dissociable Cyanide	mg/L	0.001	-	-	-
Methyl Mercury	D	ng/L	0.02	-	-	-
	T	ng/L	0.02	-	4	
Mercury	D	ng/L	0.01	-	-	200
	T	ng/L	0.01	-	26	-

Parameter		Units	Reportable Detection Limit (RDL)	CCME CWQG-FAL Guidelines		Provincial Water Quality Objectives
				Short-term	Long-term	
Aluminum	D	µg/L	1		Narrative [e]	Narrative [p]
	T	µg/L	1	-	-	-
Antimony	D	µg/L	0.1	-	-	-
	T	µg/L	0.1	-	-	20
Arsenic	D	µg/L	0.1	-	-	-
	T	µg/L	0.1	-	5	5
Barium	D	µg/L	0.1	-	-	-
	T	µg/L	0.1	-	-	-
Beryllium	D	µg/L	0.02	-	-	-
	T	µg/L	0.02	-	-	Table [r]
Bismuth	D	µg/L	0.05	-	-	-
	T	µg/L	0.05	-	-	-
Boron	D	µg/L	2	-	-	-
	T	µg/L	2	29000	1500	200
Cadmium	D	µg/L	0.005	-	-	-
	T	µg/L	0.005	Equation [f]	Equation [g]	Table [s]
Calcium	D	µg/L	50	-	-	-
	T	µg/L	50	-	-	-
Cerium	D	µg/L	1	-	-	-
	T	µg/L	1	-	-	-
Cesium	D	µg/L	0.01	-	-	-
	T	µg/L	0.01	-	-	-
Chromium	D	µg/L	0.1	-	-	-
	T	µg/L	0.1	-	-	-
	Chromium III	µg/L	0.1		(III) – 8.9;	8.9
	Chromium VI	µg/L	0.1		(VI) – 1 [h]	1
Cobalt	D	µg/L	0.1	-	-	-
	T	µg/L	0.1	-	-	0.9
Copper	D	µg/L	0.2	-	-	-
	T	µg/L	0.2		Equation [n]	Table [t]
Europium	D	µg/L	1	-	-	-
	T	µg/L	1	-	-	-
Gallium	D	µg/L	1	-	-	-
	T	µg/L	1	-	-	-
Iron	D	µg/L	10	-	-	-
	T	µg/L	10	-	300	300

Parameter		Units	Reportable Detection Limit (RDL)	CCME CWQG-FAL Guidelines		Provincial Water Quality Objectives
				Short-term	Long-term	
Lanthanum	D	µg/L	1	-	-	-
	T	µg/L	1	-	-	-
Lead	D	µg/L	0.05	-	-	-
	T	µg/L	0.05		Equation [o]	Narrative [v]
Lithium	D	µg/L	1	-	-	-
	T	µg/L	1	-	-	-
Magnesium	D	µg/L	4	-	-	-
	T	µg/L	4	-	-	-
Manganese	D	µg/L	0.1	Equation [i]	Variable [j]	-
	T	µg/L	0.1	-	-	-
Molybdenum	D	µg/L	0.05	-	-	-
	T	µg/L	0.05	-	-	-
Nickel	D	µg/L	0.5	-	-	-
	T	µg/L	0.5	-	Equation [a]	25
Niobium	D	µg/L	1	-	-	-
	T	µg/L	1	-	-	-
Potassium	D	µg/L	50	-	-	-
	T	µg/L	50	-	-	-
Rhodium	D	µg/L	1	-	-	-
	T	µg/L	1	-	-	-
Rubidium	D	µg/L	0.2	-	-	-
	T	µg/L	0.2	-	-	-
Scandium	D	µg/L	1	-	-	-
	T	µg/L	1	-	-	-
Selenium	D	µg/L	0.05	-	-	-
	T	µg/L	0.05	-	1	100
Silicon	D	µg/L	50	-	-	-
	T	µg/L	50	-	-	-
Silver	D	µg/L	0.01	-	-	-
	T	µg/L	0.01	-	0.25	0.1
Sodium	D	µg/L	50	-	-	-
	T	µg/L	50	-	-	-
Strontium	D	µg/L	0.2	-	-	-
	T	µg/L	0.2	-	-	-
Sulphur	D	µg/L	500	-	-	-
	T	µg/L	500	-	-	-

Parameter		Units	Reportable Detection Limit (RDL)	CCME CWQG-FAL Guidelines		Provincial Water Quality Objectives
				Short-term	Long-term	
Tellurium	D	µg/L	0.2	-	-	-
	T	µg/L	0.2	-	-	-
Thallium	D	µg/L	0.01	-	-	-
	T	µg/L	0.01	-	0.8	0.3
Thorium	D	µg/L	0.1	-	-	-
	T	µg/L	0.1	-	-	-
Tin	D	µg/L	0.1	-	-	-
	T	µg/L	0.1	-	-	-
Titanium	D	µg/L	0.3	-	-	-
	T	µg/L	0.3	-	-	-
Tungsten	D	µg/L	0.1	-	-	-
	T	µg/L	0.1	-	-	30
Uranium	D	µg/L	0.01	-	-	-
	T	µg/L	0.01	33	15	5
Vanadium	D	µg/L	0.5	-	-	-
	T	µg/L	0.5	-	-	6
Yttrium	T	µg/L	1	-	-	-
	D	µg/L	1	-	-	-
Zinc	D	µg/L	1	Narrative [b]	Narrative [b]	-
	T	µg/L	1	-	-	20
Zirconium	D	µg/L	0.2	-	-	-
	T	µg/L	0.2	-	-	4

Notes:

NA - not applicable, T – total, D - dissolved

a Ni equation: Hardness ≤60 mg calcium carbonate (CaCO3)·L-1, CWQG-FAL is 0.025 mg/L, Hardness >60 to ≤180 mg CaCO3·L-1 use equation $e^{\{0.76[\ln(\text{hardness})]+1.06\}}$, Hardness >180 mg CaCO3·L-1, CWQG-FAL is 0.15 mg/L

b Zn (dissolved) equation: short-term = exp(0.833[ln(hardness mg·L-1)] + 0.240[ln(DOC mg·L-1)] + 0.526 for hardness 13.8 and 250.5 mg CaCO3·L−1 & DOC 0.3 and 17.3 mg·L−1, long-term = exp(0.947[ln(hardness mg·L-1)] - 0.815[pH] + 0.398[ln(DOC mg·L-1)] + 4.625) for hardness 23.4 and 399 mg CaCO3·L−1, pH 6.5 and 8.13 and DOC 0.3 to 22.9 mg·L−1

c TSS narrative “clear flow: Maximum increase of 25 mg/L from background levels for any short-term exposure (e.g., 24-h period). Maximum average increase of 5 mg/L from background levels for longer term exposures (e.g., inputs lasting between 24 h and 30 d).”

d Total Ammonia as N table is temperature and pH dependent. Measurements of total ammonia in the aquatic environment are often expressed as mg/L total ammonia-N. The present guideline values (mg/L NH3) can be converted to mg/L total ammonia-N by multiplying the corresponding guideline value by 0.8224. Consult the CWQG-FAL factsheet for specific table.

e Al CWQG = 5 µg/L if pH <6.5, 100 µg/L if pH ≥6.5

Parameter	Units	Reportable Detection Limit (RDL)	CCME CWQG-FAL Guidelines		Provincial Water Quality Objectives
			Short-term	Long-term	
[f] Cd short-term: 0.11 µg/L if hardness 0 to <5.3 mg CaCO3·L-1, $10^{\{1.016(\log[\text{hardness}]) - 1.71\}}$ if hardness ≥5.3 mg CaCO3·L-1 to ≤360 mg CaCO3·L-1, 7.7 µg/L if hardness >360 mg CaCO3·L-1					
g	Cd long-term: 0.04 µg/L if hardness 0 to <17 mg CaCO3·L-1, $10^{\{0.83(\log[\text{hardness}]) - 2.46\}}$ if hardness ≥17 to ≤280 mg CaCO3·L-1, 0.37 µg/L if hardness >280 mg CaCO3·L-1				
h	Chromium, trivalent (Cr(III)) = 8.9 µg/L; Chromium, hexavalent (Cr(VI)) = 1 ug/L; Chromium, total = no guideline				
i	Mn (dissolved) short-term: benchmark calculator in Appendix B of Scientific Criteria Document for the Development of the Canadian Water Quality Guidelines for the Protection of Aquatic Life: Manganese				
j	Mn (dissolved) long-term: CWQG calculator in Appendix B of the Scientific Criteria Document for the Development of the Canadian Water Quality Guidelines for the Protection of Aquatic Life: Manganese.				
k	TP narrative = Trigger Ranges for Total Phosphorus (mg/L) (see Guidance Framework for Phosphorus factsheet): ultra-oligotrophic <0.004, oligotrophic 0.004-0.01, mesotrophic 0.01-0.02, meso-eutrophic 0.02-0.035, eutrophic 0.035-0.1, hyper-eutrophic >0.1.				
l	DO Narrative = Lowest acceptable DO concentrations for the protection of freshwater organisms; 6 mg/L or greater for early life stages of warmwater species, 5.5 mg/L or greater for other life stages of warmwater species, 9.5 mg/L or greater for early life stages of coldwater species, and 6.5 mg/L or greater for other life stages of coldwater species				
m	Sulphate guideline value is from British Columbia Ministry of Environment and Climate Change Strategy for the protection of aquatic life (Guideline: 128 mg/L for hardness 0 to 30 mg CaCO3·L-1; 218 mg/L for hardness 31 to 75 mg CaCO3·L-1, 309 mg/L for hardness 76 to 180 mg CaCO3·L-1, 429 mg/L for hardness 181 to 250 mg CaCO3·L-1) (Meays and Nordin 2013)				
n	Cu long-term: 2 µg/L if hardness 0 to <82 mg CaCO3·L-1, $0.2*e^{\{0.8545[\ln(\text{hardness})]-1.465\}}$ if hardness ≥82 to ≤180 mg CaCO3·L-1, 4 µg/L if hardness >180 mg CaCO3·L-1				
o	Pb long-term: 1 µg/L if hardness 0 to <60 mg CaCO3·L-1, $e^{\{1.273[\ln(\text{hardness})]-4.705\}}$ if hardness ≥60 to ≤180 mg CaCO3·L-1, 7 µg/L if hardness >180 mg CaCO3·L-1				
p	At pH 4.5 to 5.5 the Interim PWQO is 15 µg/L based on inorganic monomeric aluminum measured in clay-free samples, at pH >5.5 to 6.5, no condition should be permitted which would increase the acid soluble inorganic aluminum concentration in clay-free samples to more than 10% above natural background concentrations for waters representative of that geological area of the Province that are unaffected by man-made inputs and at pH >6.5 to 9.0, the Interim PWQO is 75 µg/L based on total aluminum measured in clay-free samples				
r	Beryllium: 0.011 mg/L if hardness is <75 mg CaCO3 L^{-1}, 1.1 mg/L if hardness >75 mg CaCO3 L^{-1}				
s	Cadmium: 0.0001 mg/L if hardness is 0 to 100 mg CaCO3 L^{-1}, 0.0005 if hardness is >100 mg CaCO3 L^{-1}				
t	Copper: 0.001 mg/L if hardness is 0 to 20 mg CaCO3 L^{-1}, 0.005 mg/L if hardness is .20 mg CaCO3 L^{-1}				
u	Dissolved oxygen: Consult PWQO table depending on cold water or warm water fish species present https://www.ontario.ca/page/water-management-policies-guidelines-provincial-water-quality-objectives				
v	Lead: 0.001 mg/L if hardness is <30 mg CaCO3 L^{-1}, 0.003 mg/L if hardness is 30 to 80 mg CaCO3 L^{-1}, 0.005 mg/L if hardness is > 80 mg CaCO3 L^{-1}				
w	Phosphorus, total (TP): To avoid nuisance concentrations of algae in lakes, average TP concentrations for the ice-free period should not exceed 0.02 mg/L, A high level of protection against aesthetic deterioration will be provided by a TP concentration for the ice-free period of 0.01 mg/L or less. This should apply to all lakes naturally below this value, and excessive plant growth in rivers and streams should be eliminated at a TP concentration below 0.03 mg/L				

3 Study Area

For the purpose of this assessment, the spatial boundaries considered include the direct and indirect effects related to site preparation, construction, operations, and decommissioning and closure of the Project.

3.1 Project Area

The **Project Area (PA)** encompasses the Project footprint and is the anticipated area of physical disturbance associated with the construction, operations, and decommissioning and closure of the Project. The PA is shown on Figure A.2, Appendix A.

3.2 Local Study Area

The **Local Study Area (LSA)** encompasses the area in which Project-related effects (direct or indirect) were predicted or measured with a level of confidence appropriate for the assessment and in which there is a reasonable expectation that the potential effects in the LSA are of public interest.

The LSA includes the PA and includes subwatersheds on the west side of the West Buskegau River main channel, several catchments within the Jocko Creek watershed and headwater subwatersheds of the North Driftwood River. The LSA continues downstream on the West Buskegau River and North Driftwood River, away from the PA. The LSA is shown on Figure A-2, Appendix A.

3.3 Regional Study Area

The **Regional Study Area (RSA)** includes the area within which cumulative effects on surface water quality and quantity are likely to occur, depending on the location of other past, present or reasonably foreseeable future projects or activities.

The RSA for the Surface Water Resources assessment includes the PA and LSA and extends further downstream than the LSA along the North Driftwood River, West Buskegau River and Jocko Creek. The RSA is shown on Figure A-2, Appendix A.

4 Methodology

4.1 Desktop Review and Data Sources

4.1.1 Physiographic Assessment

Understanding the surface features of the PA, LSA, and RSA watersheds is a vital piece of a baseline assessment as the local physiography has an influence on both the quantity and quality of runoff in each affected watershed. Knowledge of the physiographic characteristics of the Project study watersheds is established through a review of surface features, soils and surficial geology information, topography and vegetation typical of the area from publicly available resources.

Vegetation communities and land cover classes are an important consideration in determining expected runoff resulting from rainfall in each relevant watershed. These are identified using available public information maintained by the Government of Ontario. Vegetation and land cover classes within the Project study watersheds are determined based on available geographic information system (GIS) and public source information, which include the Ontario Watershed information Tool (OWIT), and the Ontario Land Cover Compilation (MNRF 2023a; MNRF 2023c).

The topography of the PA is determined using client-provided light detection and ranging (LiDAR) digital elevation images collected in 2021 and 2022 and supplemented with provincially available topographic contour mapping (MNRF 2023b). Topography, geological, and soils mapping, such as the Soil Survey Complex published by the Ontario Ministry of Agriculture, Food, and Rural Affairs (OMAFRA) are also reviewed to establish the expected surficial geology (OMAFRA 2023).

The approach for identifying site physiography, topography, vegetation and soils data is in alignment with related baseline reporting. Additional baseline reports may be reviewed to provide additional details on location physiography (Appendix B.1 of the Impact Statement [Soils and Terrain Baseline Report], Vegetation, Riparian and Wetland Environments Supplemental Baseline Report (Appendix B.7.1 of the Impact Statement) and Terrestrial Wildlife and Wildlife Habitat Supplemental Baseline Report (Appendix B.7.3 of the Impact Statement)).

4.1.1.1 Climate and Climate Change

Climatic factors have a defining influence on the hydrologic conditions of the Project study watersheds. Temperature and precipitation directly influence the quantity and timing of expected runoff, evapotranspiration rates, and infiltration rates. It is important to characterize the climatic conditions of the site, especially as they are anticipated to change over time.

The climatic setting of the Project is established through assessment of available climate data, including temperature and precipitation data, and applicable intensity-duration-frequency (IDF) curves.

Stations located up to 100 km away from the site, with greater than 10 years of record, and with more recent climatic data (2000s onwards) are considered for use as climate data sources. At the time of this work being performed, ECCC announced upcoming updated climate normal information for the period of 1991-2020 but had not yet released updated climate normals for stations found near the project site. Thus, climate data taken from ECCC climatological monitoring stations is analyzed following ECCC's methodology to determine the climate normal for the 1991-2020 period, maximum, minimum, wet year, and dry year climatic conditions are calculated (ECCC 2020).

ECCC follows the World Meteorological organization's (WMO) guidelines for determining climate normals. The same methodology is applied in this case to determine the updated climate normals relevant to the PA (ECCC 2020; WMO 1989). ECCC describes the methodology used to determine 30-year climate normals within *Canadian Climate Normals 1991-2020 Calculation Information* (ECCC 2020). Within the document, ECCC described the application of the WMO "3 and 5 rule" where a month included in the climate normal calculations must not have more than three consecutive missing values for temperature or other parameters being assessed, and no more than five missing values total within the month. Applying the "3 and 5 rule", mean averages of temperature and precipitation on a monthly scale are taken to determine the climate normal values.

A wet and dry year assessment was performed using available data at the project site. Dry years are defined as years having annual precipitation less than climate normal precipitation amounts and wet years are defined as years having annual precipitation greater than the annual climate normal precipitation.

Precipitation data for storm events with durations ranging from 5-min to 24-hours are calculated from available IDF curves at the climatological monitoring stations. IDF curves summarize the annual exceedance probability of a depth of rainfall in a single event of selected duration and intensity. ECCC periodically publishes IDF curves at selected meteorological locations in Ontario and elsewhere in Canada (2023c).

The 24-hour storm events rainfall data of various return periods (i.e., 2, 5, 10, 25, 50, and 100 year) are representative for conservative use in conjunction with other hydrology information to assist with the sizing of infrastructure, such as sediment ponds, culverts across access roads and diversion channels. To calculate the precipitation for these return periods of both wet and dry year conditions, hydrological frequency analysis (HYFRAN) software is used (El Adlouni and Bobée 2015).

Annual and monthly snow depth and snowfall data is summarized based on available data from ECCC climate stations relevant to the project site. Barometric pressure data is collected on site as a part of the hydrometric study field program, further described in Section 4.2.1.

Quantitative predicted impacts from climate change on temperature and precipitation are necessary to estimate potential peak flow and runoff volume changes into the future and assist with water management infrastructure design for the Project to consider climate change adaptation. Future predictions of impacts to site specific IDF curves, temperature and precipitation impacts are collected from the climate change scenario model results provided by ClimateData.ca (2024). ClimateData.ca is a collaboration between

ECCC, the Computer Research Institute of Montréal, Ouranos, the Pacific Climate Impacts Consortium, the Prairie Climate Centre, and HabitatSeven to provide access to climate change data (ClimateData.ca 2024).

The Intergovernmental Panel on Climate Change (IPCC) advises the use of ensemble models to make future predictions on the impacts of climate change since these models tend to be more successful than individual models for both seasonal and long-term simulations (IPCC 2007; Boer and Lambert 2008). This is because ensemble models work by developing a mean prediction based on the outputs from several different models, which helps to then reduce model uncertainty. The model used to provide data for the Project study area comes from the global Coupled-Model Intercomparison project (CMIP). The CMIP6 ensemble model is used to provide climate change estimates for the Project study area as it is the most recent model available at ClimateData.ca (2024). CMPI6 represents various emission scenarios as Shared-Socioeconomic Pathways (SSPs), otherwise referred to as Representative Concentration Pathways (RCPs). IPCC's most recent technical reporting refers to each scenario as SSPx-y, where "SSPx" refers to the SSP describing the socio-economic trends underlying the scenario, and "y" refers to the approximate target level of radiative forcing (in W/m^2) resulting from the scenario in the year 2100 (Arias et. al. 2021).

To provide a comprehensive picture of future conditions at the site, three SSP scenarios are considered. These three scenarios include the low emission scenario (SSP1-2.6), moderate emission scenario (SSP2-4.5), and a high emission scenario (SSP5-8.5). The Canadian Standards Association (CSA) Plus 4013:19 technical guide recommends that moderate to high emission scenarios are used for Project projections (CSA 2019). Model results are available in 30-year time frames, and the IDF curves and total precipitation monthly and annual amounts are predicted over a time frame of 2071-2100 are assessed to capture the Project timescale covering 41 years of active mine period, 5 years of active closure, and the post-closure period. The snowfall variable is estimated using the auer snowfall approximation with a threshold of 0°C and the rainfall is then calculated by subtracting snowfall from the total precipitation variable.

4.1.1.2 Watershed Delineation

The Project study area is located within three main watersheds: North Driftwood River Watershed, West Buskegau River Watershed, and Jocko Creek Watershed (Figure A.3, Appendix A). Watershed boundaries for the three study watersheds are estimated in tandem with a Project site LiDAR sourced digital elevation model (DEM) and Provincial Ontario sourced DEM. The provincial DEM has a spatial resolution of 30 m (OMAFRA 2023), whereas the LiDAR mapping has a resolution of 1 m. To avoid edge effect, the two maps are not merged together, but instead the LiDAR mapping, due to its higher spatial resolution, is used initially for watershed delineation. Gaps in the available LiDAR DEM coverage of the watersheds are filled using data from the Ontario Provincial DEM (MNRF 2023b). Where watersheds extend across both datasets, the watersheds are stitched together using elevation trends and aerial imagery to align the drainage areas.

The three watersheds (North Driftwood River, West Buskegau River and Jocko Creek) are divided further into subwatersheds, based on the following:

- Junctions of tributaries into equal or higher order channels following the Strahler Stream order method
- Location of potential project infrastructure (e.g., treatment plant outfalls, diversion channel inflow and discharge points)
- Hydrometric monitoring stations

4.1.2 Regional Hydrology Assessment

Regional streamflow monitoring stations operated by the Water Survey of Canada (WSC) were assessed to characterize the regional hydrology. This assessment examines hydrology data at a regional scale, allowing for many years of flow data from WSC hydrometric stations to be analyzed allowing extreme and mean (high, low and mean) flow events to be captured. This provides greater confidence in flow statistics that are generated to represent the hydrologic conditions of the Project study watersheds. The site hydrology data collected at the Project study watersheds can then be used to assess suitability with the regional hydrology relationships.

The WSC stations are first assessed using a series of selection criteria before assuming homogeneity between sites. These criteria include catchment area, station location, period of record, and others that are described in further detail in this section. Transpositional scaling assumes homogeneity will be more likely due to their proximity, similar climate and physiographic conditions between the selected regional WSC stations.

The accuracy of peak-flow frequency estimates studied by Dalrymple and Benson (1960) determined the years of records needed for peak flow frequency estimates and the results were summarized by the United States Geological Survey (USGS) (2003). A summary of minimum stream flow record length and associated return periods is presented in Table 4.1.

Table 4.1 Recommended Minimum Stream Flow Record Lengths for Return Period Estimates (USGS 2003)

Return Period	Minimum Record Length (Years)
10 Year	8
25 Year	10
50 Year	15
100 Year	20

The following criteria are used for WSC station selection for the regional hydrology assessment:

1. WSC station watershed has an area approximately no greater than one order of magnitude difference to the largest Project study area watershed, which would be the West Buskegau watershed.
2. The station is located less than 200 km from the Project Site to maintain climatic and physiographic comparability with local watersheds.
3. The station has a period of record that falls within one climate normal period - preferably the most recent ECCC climate normal period currently being estimated for climate stations in Canada (1991 to 2020) (ECCC 2023b).
4. The station has a natural flow regime (non-regulated) as Project site watersheds are natural.
5. The station has a period of record greater than 20 years to support development of long-term hydrological statistics for average, low and high flows, and estimation of 100-year event flows. Stations with period of record of greater than 15 years are included in the assessment as they typically represent smaller watersheds in the region that are closer in size to the Project watersheds.

Based on the above criteria, eight selected WSC hydrometric stations are included the regional hydrological assessment to further undergo homogeneity testing (Table 4.2).

Table 4.2 Regional WSC Stations Selected for the Regional Hydrology Homogeneity Assessment

Station ID	Station Name	Drainage Area (km^2)	Years of Record	Record Period	Site Proximity (km)	Climate Normal[1] Prec. (mm)
02JC008	BLANCHE RIVER ABOVE ENGLEHART	1780	56	1968-2023	150 km SE	811
04LC003	IVANHOE RIVER AT FOLEYET	1640	20	2002-2023	100 km SW	844
04LK001	MATTAWISHKWIA RIVER AT HEARST	1170	26	1985-1993; 2006-2023	190 km NW	768
04LB002	KAMISKOTIA RIVER ABOVE ENID CREEK	926	16	2009-2023	25 km SW	836
04LA003	TATACHIKAPIKA RIVER NEAR TIMMINS	872	23	2001-2023	52 km S	830
04LE002	NEMEGOSENDA RIVER NEAR CHAPLEAU	432	18	2006-2023	150 km SW	869

Station ID	Station Name	Drainage Area (km^2)	Years of Record	Record Period	Site Proximity (km)	Climate Normal[1] Prec. (mm)
04MD004	PORCUPINE RIVER AT HOYLE	408	34	1977-1994; 2007-2022	37 km SE	836
04LA006	MOLLIE RIVER AT HIGHWAY NO. 144	92.5	17	2007-2023	150 km S	828

Note:
1. Annual precipitation data from OWIT (2023)
Source: ECCC 2023d

With the above shortlisted WSC stations, further assessment is applied to confirm hydrologic homogeneity where the landscape is subject to similar climate, and physiographic conditions. Validated stations for homogeneity can then be used to apply the regional regression method, in which regression equations are developed for relationships between variables of interest and catchment area. These regression equations can then be used to characterize the local hydrologic conditions using the local watershed drainage areas.

Validation for the regional hydrology dataset is conducted by a number of tests to verify the hydrologic homogeneity of the group of stations. A station would not be eliminated because it failed a single test but would be eliminated if it failed multiple tests demonstrating more heterogeneity than homogeneity. The tests used to confirm hydrologic homogeneity include:

- Mean Slope: The mean slopes of the watersheds associated with each of the WSC stations are obtained from OWIT (MNRF 2023). OWIT is an online spatially based application generating watershed areas and statistics of a watercourse at a location of interest within Ontario.
- Percent Area of Waterbodies: The percent area of the WSC station watersheds that are dominated by waterbodies are obtained for each WSC station from OWIT.
- Average Annual Precipitation: Precipitation for each WSC station is obtained from OWIT to assess which stations meet the threshold for average annual precipitation homogeneity of +/-10% in comparison to the local value, defined by ECCC station climate normals.
- Unit Flow: Unit flows are calculated for each WSC station by dividing the mean annual flow by the associated catchment area to provide a unit of flow per square kilometre of catchment area.
- Flow Duration Curve (FDC): a flow duration curve is an analytical tool used to study the variability of stream flows. The flow duration curve presents the ratio of the daily flow divided by the mean annual flow versus the exceedance probability of that ratio.
  - FDCs are used in determination of water supply capacity, water quality management, river sedimentation, flood control and environmental flow requirements. FDCs are derived using daily discharge records obtained for the selected WSC stations. For each station, daily discharge for the period of record is ranked largest to smallest value, and exceedance probability P is calculated for the records using Equation 4-1:

$$P = 100 * [\frac{M}{n+1}] \qquad \textbf{Equation 4-1}$$

Where: *P* = the probability that a given flow will be equaled or exceeded (% of time);
M = the ranked position on the listing (dimensionless);
n = the number of events for period of record (dimensionless)

- Index Flood Flow: The index flood flow is a technique used in flood studies to assess the homogeneity of WSC stations based on the return interval of the regionally based 10-year flood flow and the station period of record. Moin and Shaw (1985; 1986) had developed index flood flows for Ontario streams. The method below follows the technique used by Dalrymple (1960) and Harvey et al. (1985) with the homogeneity test using an Extreme Value Type 1 (EV1) distribution by Gumbel (1958).
  - The regionally based 10-year flood flow is calculated by dividing each station's 10-year flood flow by the index flood flow (2.33-year return period flood flow or the mean annual flood flow), which is averaged over the data set. The mean annual flood flow is multiplied by the averaged unitless 10-year flood flow divided by the mean annual flood flow to yield the regionally based 10-year flood flow.
  - A flood frequency curve is plotted for the regionally based 10-year flood flow to develop a relationship between the flood flow and return period for each station. A station-based return period is then calculated for each station to plot against the station period of record and compared to the upper and lower limit curves.

Once the above-described homogeneity tests have been applied to the stations listed in Table 4.2, the stations selected to represent regional hydrology will be confirmed. With this, the regional assessment proceeds with the following analysis steps for development of relationships that can be applied to the local area.

- Mean annual and monthly flows – using daily flow data, annual mean relationships and monthly mean flow relationships are generated using regression. These relationships are then applied to watersheds in the LSA. The mean annual flow (MAF) is calculated by determining the mean flow for each year, then averaging the values for the full record of the dataset. Mean monthly flows (MMFs) are calculated similar to the MAF, but performed for each month rather than each year, and then by averaging the values for the full record of the station dataset.
- Peak flow frequency analysis – using instantaneous peak flow data for the selected WSC hydrometric stations, regression relationships are developed. The regression relationships can be used for estimations of peak flows for watershed areas within the Project site to assist the design of Project infrastructure.
  - Peak flows are calculated using the instantaneous flows from the regional WSC stations. The instantaneous peak flow for each year is input into HYFRAN software (EI Adlouni and Bobée 2015) to calculate the peak flow for various return periods (2, 5, 10, 25, 50, and 100 year). A Log-Pearson Type III distribution with Method of Moments is used to calculate the peak flows.

Peak flow and environmental low flow estimates are typically used as the design flow for project infrastructure.

- Environmental flows (maintenance flows, instream flow needs) describe the quantity, timing and quality of water flows required to sustain freshwater and estuarine ecosystems. Through implementation of environmental flows, a flow regime that maintains the essential processes to support healthy river ecosystems can be achieved (eFlowNet 2007). The most widely used hydrological methods to estimate the low flow indices, include:
  - single low flow indices (e.g., $7Q_{10}$, $7Q_{20}$) – Single low flow indices are derived using a regional frequency analysis for the selected WSC stations.
  - the Tennant Method (1976) and its modification, the Tessman Method (1980) – The Tessman method is an extension of the Tennant method (Tessman 1980), which is based on a combination of MMF and MAF. It assumes that flows that are satisfactory for needs of fish and other aquatic biota will also be satisfactory for maintaining recreational and aesthetic quality. Environmental flow is a screening criterion, specific flow requirements would be confirmed based on site specific aquatic habitat and fisheries requirements. The Tessman method recommends minimum monthly flow guidelines which are presented in Table 4.3.

Table 4.3 Tessman Rules (Tessman 1980)

Recommended Minimum Flow	Criteria
Mean Monthly Flow (MMF)	If MMF < 40% Mean Annual Flow (MAF)
40% of MAF	If MMF>40% MAF and 40% MMF <40% MAF
40% MMF	If 40% MMF >40% MAF

  - In 2013, DFO published a report titled the *Framework for Assessing the Ecological flow Requirements to Support Fisheries in Canada* which provided guidance on the application of a ±10% threshold limit to changes of instantaneous flow relative to the natural flow regime. Additionally, a second limit is applied for when instantaneous flow values fall to below 30% of the Mean Annual Discharge (MAD; or MAF). To make this comparison for potential future impacts associated with the Project in local receiving waters, 30% MAF values are determined at each of the Project watersheds.
- Baseflow Index (BFI) – The BFI is defined as a ratio between baseflow volume and total streamflow volume. The BFI is calculated using SepHydro, a hydrograph separation tool developed by the Canadian Rivers Institute (CRI), University of New Brunswick (UNB) and Agricultural and Agri-Food Canada (AAFC) (Danielescu 2018). Using daily flow data from the WSC stations as an input, SepHydro is used to estimate the percent of baseflow contribution for each of the stations to provide a regional estimate for BFI. SepHydro separates baseflow from streamflow using a variety of available methods. The method applied for this study is the Lynne and Hollick method (1979). The SepHydro interface allows for the application of numerous baseflow separation methods. The Lynne and Hollick method is selected by comparing fit and applicability of other methods to the station flows. Lynne and Hollick applies the following equation to the streamflow time series:

$$q_t = \alpha q_{t-1} + \frac{(1+\alpha)}{2}(Q_t - Q_{t-1})$$ **Equation 4-2**

Where: q = surface or quick runoff (m^3/s);
Q = the streamflow (m^3/s);
t = time step;
α = the catchment constant (between 0 and 1)

4.1.3 Environmental Water Balance

To support understanding of the baseline hydrologic system at the Project site, an accounting procedure is applied to assess the amounts of water transferring to various elements of the hydrologic system (e.g., evapotranspiration, infiltration, streamflow). This is referred to as an environmental water balance, which can be represented by the following relationship:

$$P = ET + R + I \pm \Delta S$$ **Equation 4-3**

Where: P = Precipitation;
ET = Evapotranspiration;
R = Overland Flow or Surface Runoff;
I = Infiltration (Surplus); and
ΔS = Change in Storage

A monthly water balance model based on the Thornthwaite equation (Thornthwaite and Mather 1957; McCabe and Wolock 1999) with a graphical user interface developed by the USGS is used to estimate Project site evapotranspiration, surface runoff and streamflow (USGS 2007). The model requires inputs of monthly precipitation, average monthly temperature, runoff factor, soil moisture storage capacity and snow and rainfall temperature thresholds.

The potential evapotranspiration (PET) in the model is calculated using the Hamon equation (Hamon 1961):

$$PET_{Hamon} = 13.97 \times d \times D^2 \times W_t$$ **Equation 4-4**

Where: PET_{Hamon} = Monthly potential evapotranspiration in millimeters;
d = number of days in a month;
D = mean monthly hours of daylight in units of 12 hours; and
W = saturated water vapor density term, in grams per cubic meter.

The saturated water vapor density term is calculated by the following equation:

$$W_t = \frac{4.95 \times e^{0.062 \times T}}{100}$$ **Equation 4-5**

Where: T = mean monthly temperature in degree Celsius (Hamon 1961)

Actual evapotranspiration (AET) is derived from PET and soil-moisture. When precipitation for a month is less than PET, the AET is equal to precipitation plus the amount of moisture that can be withdrawn from storage in the soil. If precipitation for a month is greater than PET, then AET equals PET.

PET represents maximum possible evaporation which traditionally is calculated as evaporation from a lake surface in similar climate conditions. ECCC has a limited number of stations where pan evaporation is monitored, and lake evaporation rates are estimated.

Water surplus is defined using the infiltration factor as defined by the Ontario Minister of Environment Conservation and Parks (MECP), formerly the Ministry of the Environment (MOE) (MOE 2003). The infiltration factor is determined from average topographic slope, hydrologic soil type, and vegetation cover type. Infiltrated water recharges aquifers and routes via interflow to streams and lakes. Net infiltrated water recharges aquifers and discharges as baseflow locally or regionally. For this study, ground watersheds are assumed to align with surface watersheds and all baseflow returns to a local watershed where infiltration occurred.

Additionally, for the purpose of the water balance calculations, it is assumed that runoff, evapotranspiration, and infiltration are negligible in months with average monthly temperatures below 0°C.

The water balance model is applied to climate normal, wet, and dry year conditions to estimate the baseline environmental water balance over a temporal scale compatible with the Life of Mine (LOM), which is expected to operate for 41 years. A warmup period of 2 year of climate normal data is applied, then followed by either the wet year, dry year, or climate normal for the third year. Results are taken from the third year for discussion.

4.1.4 Hydrological Model

4.1.4.1 Model Selections

The US Army Corps of Engineers' (USACE) Hydrologic Engineering Centre Hydrologic Modelling System (HEC-HMS) software is selected for use for the development of the baseline hydrological model. HEC-HMS has been widely used for watershed studies, subwatershed studies, hydrological statistics and simulations, site plans, and flood risk management for projects in Ontario. Version 4.10 is used for the development of this model.

4.1.4.2 Model Setup

4.1.4.2.1 Watershed Delineation

Watershed delineation is an important step in developing any hydrologic model. An accurate watershed delineation and discretization is required to generate accurate flows. A separate HEC-HMS model was generated for each of the three following watersheds: Jocko Creek, North Driftwood River, and West Buskegau River to improve system stability while performing runoff simulation runs. The subwatersheds used in the model are the same as described in Section 4.1.1.2. Figure A-3, Appendix A presents watershed and subwatershed delineation, with watershed characteristics tables provided in Appendix B.1.

Figure 4.1 to Figure 4.3 provide a visual schematic of each watershed's HEC-HMS modelling components and linkages.

Figure 4.1 Jocko Creek Watershed Model

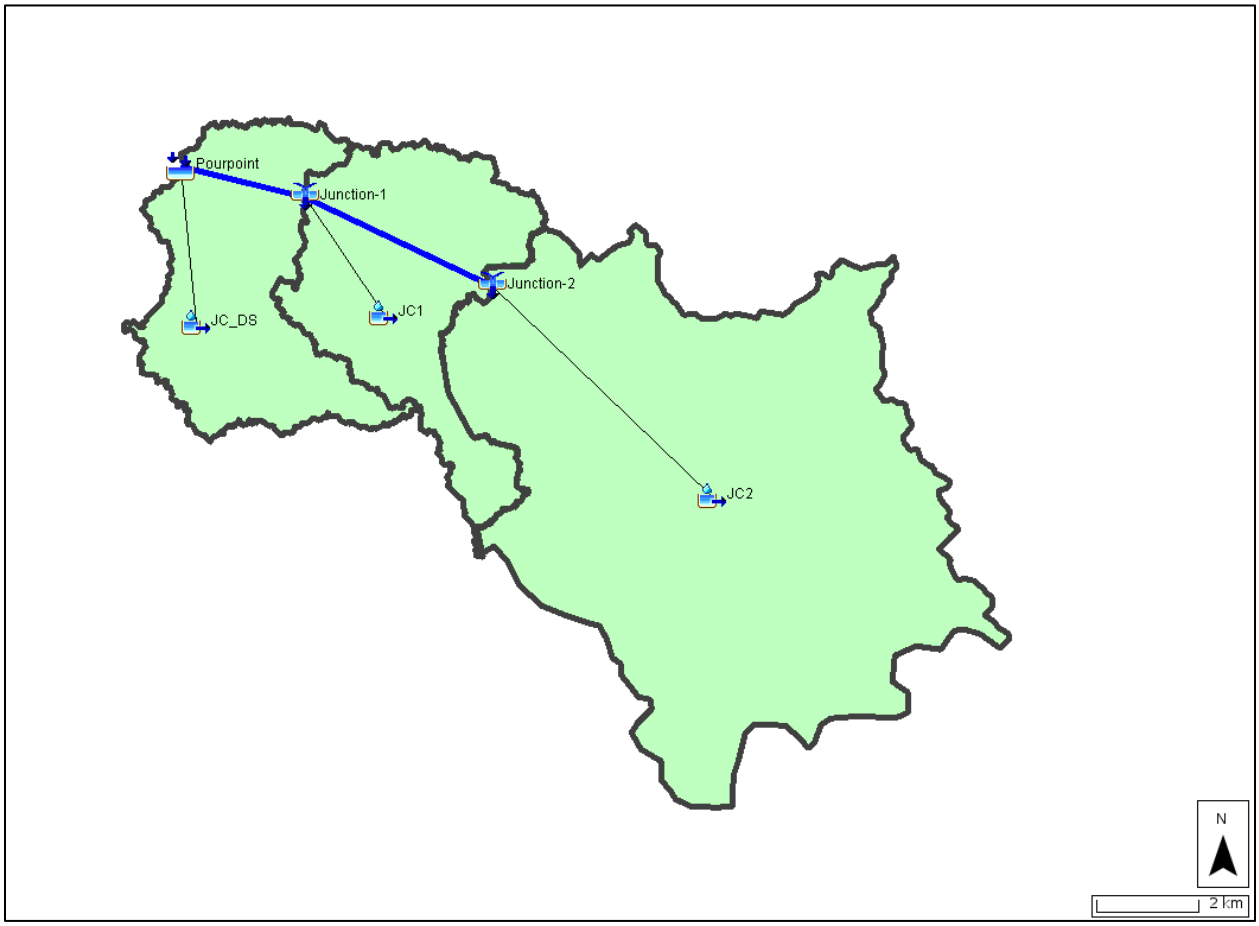


Figure 4.2 North Driftwood Watershed Model

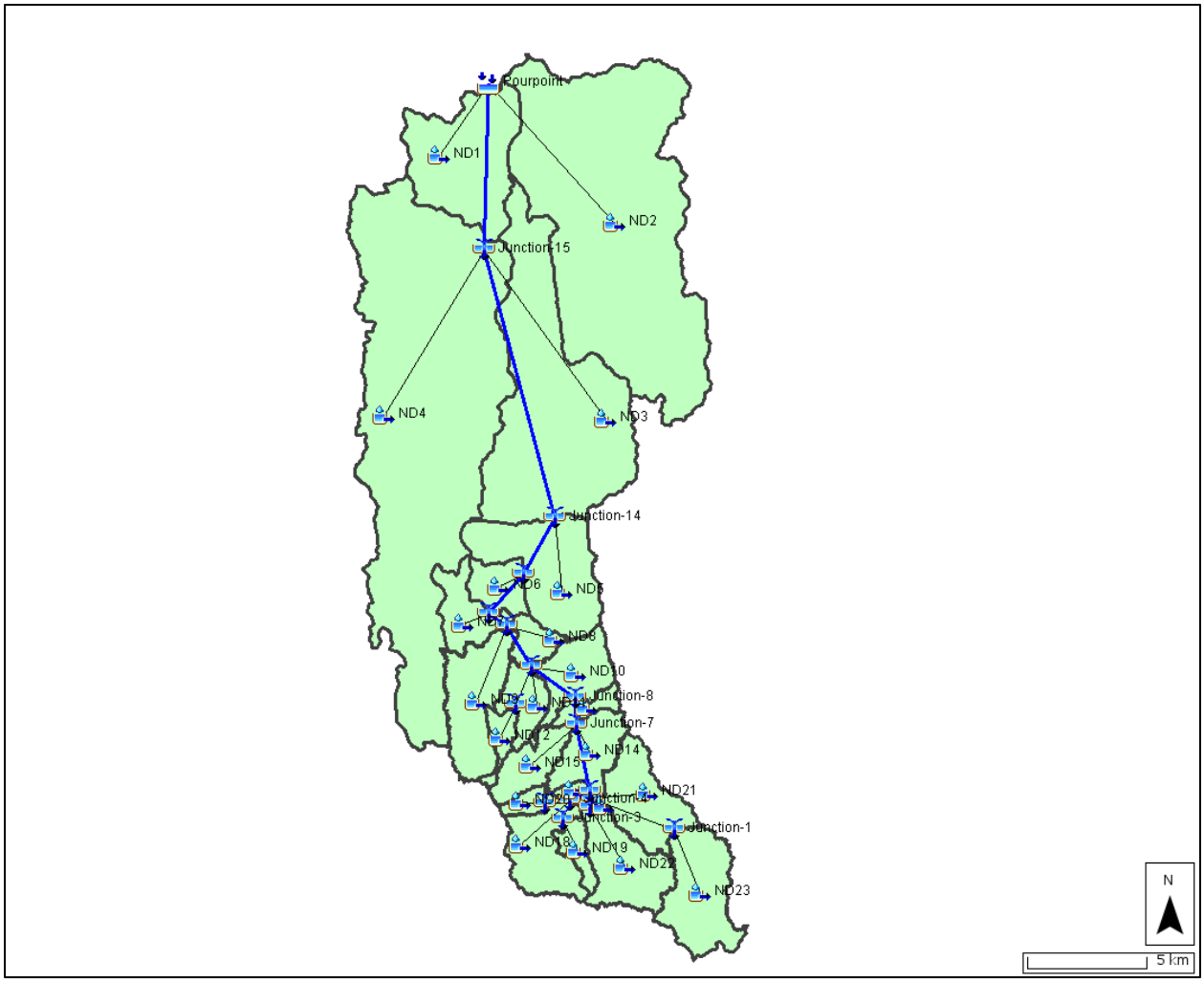
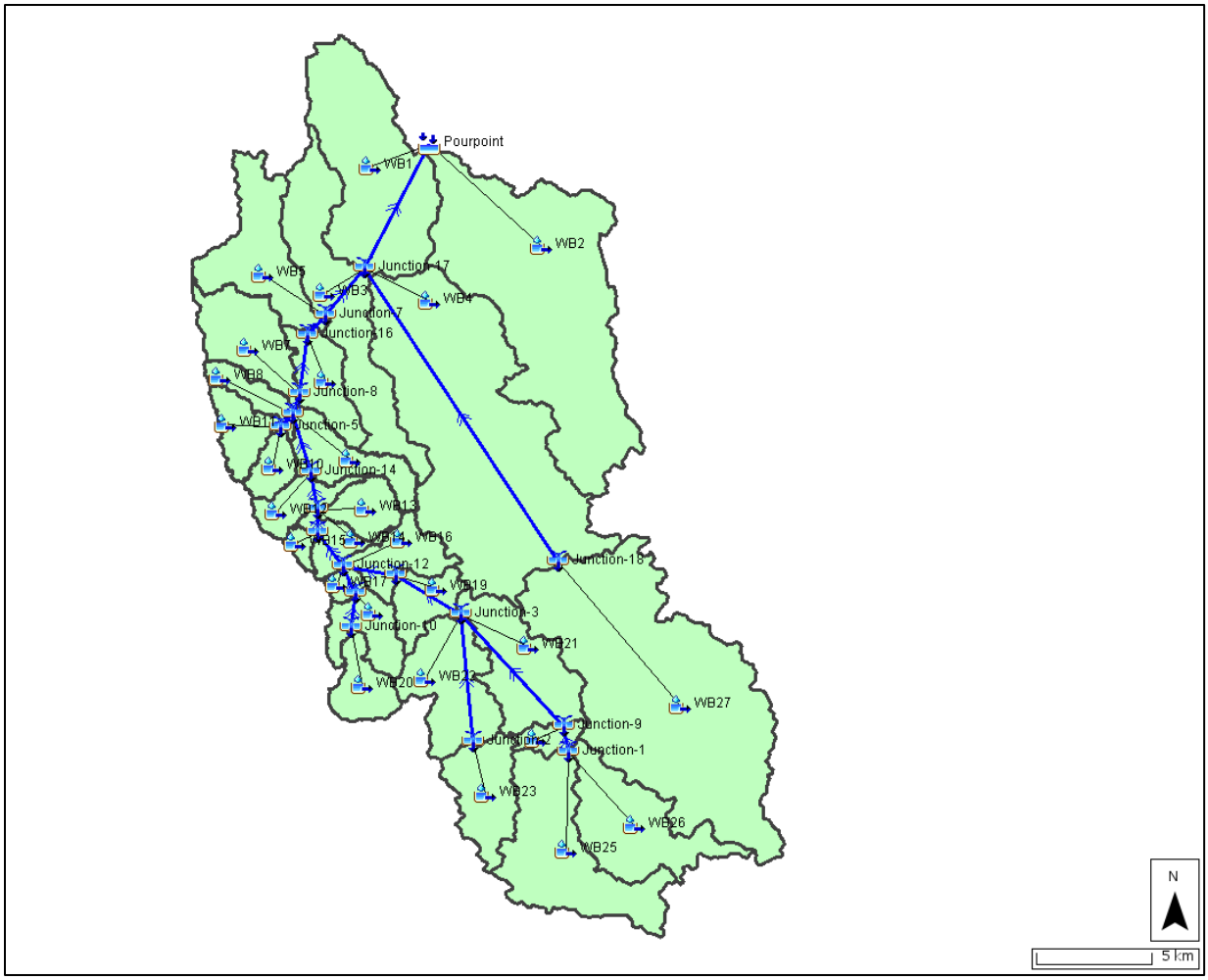


Figure 4.3 West Buskegau Watershed Model



4.1.4.2.2 Land Cover

The Ontario provincial land cover compilation and soils complex data were used to define subwatershed characteristics, such as the hydrologic Curve Number (CN) (MNRF 2023c, OMAFRA 2023). The data presented align with the observations in the Soils and Terrain Baseline Report ((Appendix B.1 of the Impact Statement) . Appendix B.1 of the Impact Statement provides summary tables describing the land cover and hydrologic soil group types of each of the subwatersheds as determined by provincial sources. The Curve Number (CN) for each subwatershed was calculated using the Soil Conservation Service (SCS) Runoff CN method as defined by United States Department of Agriculture (USDA) Technical Release for Urban Hydrology for Small Watersheds (TR-55) (USDA 1986). In following the SCS Runoff approach for CN, TR-55 Table 2-2a provided reference for CN values based on hydrologic soils group and land cover type. The cover type described by TR-55 Table 2-2a were matched to a corresponding land cover type provided by the Ontario Land Cover Compilation (MNRF 2014) to create an equivalency

table between land cover type, Ontario land cover type description, and hydrologic soil-group based curve numbers. Table 4.4 presents the equivalency values used in the determination of CN values.

Table 4.4 TR-55 Table 2.2a CN Values Equivalency Table for Ontario Land Cover Classes

Ontario Land Cover Type	Equivalent Cover Type from TR-55	Description of Equivalency	Curve Number by Soil Group			
			A	B	C	D
Bedrock	Impervious areas	Bedrock is primarily impervious	98	98	98	98
Bog	Brush, Good Condition	Describes areas with brush with > 75% ground cover by brush-weed-grass	30	48	65	73
Clear Open Water	open water	CN is the relationship between runoff and infiltration. If rainfall lands on open water, that is considered as complete runoff.	100	100	100	100
Community / Infrastructure	Impervious areas, streets and roads, paved: open ditches	Aerial imagery shows that infrastructure present is primarily roads and highways.	83	89	92	93
Coniferous Treed	Woods, Good Condition	Describes land that is very densely forested	30	55	70	77
Deciduous Treed	Woods, Good Condition	Describes land that is very densely forested	30	55	70	77
Disturbance	Herbaceous, Fair Condition	Describes herbaceous vegetation with vegetation cover of 30%	60*	71	81	89
Fen	Woods (grass), Poor Condition	Fens are groundwater fed wetlands and the water table is usually quite close to the surface level, limited ability for infiltration, vegetation is <25% forested	57	73	82	86
Mixed Treed	Woods, Good Condition	Describes land that is very densely forested	30	55	70	77
Sparse Treed	Woods, Fair Condition	Sparse Treed land cover type describes forested areas with less dense coverage, bedrock or rapidly draining soils, typically dried conditions (semiarid)	43	65	76	82
Swamp	Woods(grass), Fair Condition	“Swamp” describes open, shrub and treed communities where the water table is seasonally or permanently at, near, or above substrate surface - tree or shrub cover > 25% - dominated by hydrophytic shrub and tree species	43	65	76	82
Turbid Water	open water	CN is the relationship between runoff and infiltration. If rainfall lands on open water, that is considered as complete runoff.	100	100	100	100
Agriculture and Undifferentiated Rural Land Use	Pasture (grassland), Good Condition	Ontario Land Cover describes land as sparse shrubs in rural land, land cleared for agricultural use that may or may not be currently active.	39	61	74	80

Note: * This is an estimated value used for calculations as TR-55 does not provide a value for this cover type and soil condition.

CN is a direct function of the land cover type and the hydrologic soil group type. Since each subwatershed contained soils of multiple hydrologic group types, a weighted average of CN values for each individual subwatershed was used to define the overall CN.

Another input generated based on the topographic delineation of the subwatersheds is the lag time. In following with the TR-55 Manual, the SCS watershed lag method was used to calculate lag time. The calculation for lag time used for each subwatershed is described below.

Lag time is calculated by the following equation:

$$L = \frac{l^{0.8}\,(S+1)^{0.7}}{1900Y^{0.5}} \qquad \textbf{Equation 4-6}$$

Where:

L = Lag time (h)
l = flow length (ft)
Y = averaged watershed land slope (%)
S = maximum potential retention (in)

$$= \frac{1000}{cn'} - 10$$

Where: *cn'* = the retardance factor, equivalent to the CN (USDA 1986)

Appendix B1 provides a summary table for each variable (channel length and average slope). The maximum potential retention is calculated as described above, based on the determined weighted average CN values for each subwatershed. The determined input parameters are provided below in Table 4.5.

Table 4.5 Summary of Subwatershed Land-Use Based Input following USDA TR-55 Methods

Watershed	Subwatershed ID	Area (ha)	Weighted Average CN	Lag Time (min)
Jocko Creek	JC1	1,945	77.1	1,899
	JC2	7,182	77.0	6,212
	JCDS	1,837	77.5	2,553
North Driftwood	ND1	2,148	82.7	2,588
	ND10	771	75.7	1,649
	ND11	478	76.6	1,340
	ND12	242	77.5	1,295
	ND13	233	75.0	1,060
	ND14	719	77.0	1,379
	ND15	580	75.7	1,746
	ND16	107	77.9	780
	ND17	28	78.5	492
	ND18	953	77.9	1,638

Watershed	Subwatershed ID	Area (ha)	Weighted Average CN	Lag Time (min)
	ND19	275	76.1	1,175
	ND2	8,441	81.4	6,581
	ND20	165	73.2	953
	ND21	1,075	77.3	1,975
	ND22	1,066	78.6	1,598
	ND23	1,302	73.0	3,517
	ND3	5,061	77.2	6,539
	ND4	10,217	76.1	8,332
	ND5	1,807	73.6	3,097
	ND6	480	75.4	1,199
	ND7	628	75.7	1,806
	ND8	328	73.0	1,214
	ND9	1,225	77.4	2,263
West Buskegau	WB1	3,873	80.5	2,697
	WB10	444	73.2	1,632
	WB11	685	72.9	1,636
	WB12	603	77.3	1,439
	WB13	623	79.1	1,350
	WB14	491	80.3	1,529
	WB15	165	78.3	752
	WB16	851	76.2	2,230
	WB17	187	74.7	892
	WB18	804	73.8	2,075
	WB19	723	75.4	1,611
	WB2	7,070	79.1	5,493
	WB20	727	76.1	1,610
	WB21	1,887	75.4	3,505
	WB22	1,785	75.1	2,857
	WB23	1,262	77.9	3,509
	WB24	315	77.9	1,193
	WB25	2,848	76.6	5,584
	WB26	2,128	76.6	3,515
	WB27	8,326	72.2	6,300
	WB3	2,871	76.5	4,878
	WB4	8,042	78.7	5,558
	WB5	1,892	76.9	3,932
	WB6	975	75.7	2,263

Watershed	Subwatershed ID	Area (ha)	Weighted Average CN	Lag Time (min)
	WB7	1,342	73.0	3,056
	WB8	468	72.8	1,776
	WB9	1,017	75.9	2,522

4.1.4.2.3 Unit Hydrograph Selection

HEC-HMS software provides multiple options for unit hydrograph selection such as: Clark unit Hydrograph, Kinematic wave, ModClark, SCS Unit Hydrograph, Snyder Unit Hydrograph, and User-specified hydrograph options. For this model, the SCS unit hydrograph with a peaking factor of 250 was selected.

The SCS Unit Hydrograph method is described in detail within Chapter 16 of the National Engineering Handbook (NEH), created by the USDA Natural Resources Conservation Service (NRCS), as well as the TR-55 (USDA 1986; USDA NRCS 2007). The SCS unit hydrograph is standard, dimensionless representation of runoff resulting from a uniform rainfall depth of 1 inch applied to an entire watershed (USDA NRCS 2007). The unit hydrograph was derived following empirical methods and is a recognized standard of practice for use within the field of hydrology to characterize runoff response within watersheds (USDA NRCS 2007). The peaking factor (or otherwise known as the Peak Rate Factor [PRF]) describes the shape of the unit hydrograph. A higher PRF value leads to a higher peak runoff from the hydrograph. PRF values typically range between 600 and 100 (USDA NRCS 2007). Watersheds that are flatter, and more characterised by swamp or bog land types have lower PRF values. The selected value of 250 is consistent with the topography and physiographic conditions of the site and was determined based on iterative model calibration.

4.1.4.2.4 Channel Routing

Channel routing is required to simulate flood wave travel times and reduction in peak flow as flows propagate downstream along a reach. The HEC-HMS model defines reach components that route hydrographs through typical channel cross-sections using the Muskingham-Cunge routing method. Inputs for this routing method include channel bed and side slope, Manning's roughness coefficient across the main channel width, channel shape, and bed width.

Within HEC-HMS, subwatershed elements were linked with channel routing where the main river channel (either Jocko Creek, the North Driftwood River, or the West Buskegau River channel) of each watershed physically exists. Minor creeks and tributaries are not modelled with channel routing. Thus, channel geometry parameters maintain consistent along every reach of the channel within the subwatershed and not every subwatershed contains a section of the main channel.

Channel length and slope vary between subwatersheds, and were determined from the topographic assessment using LiDAR and the Provincial DEM. Channel bed width and side slope estimation was determined through field observations of channel geometry at the surface water monitoring stations described in Section 4.2.1. Channel geometry has been approximated as trapezoidal for all channels and

reaches. Additionally, HEC-HMS requires a celerity value for each reach. The input celerity of 5 ft/s (1.524 m/s) is standard and applicable in most modelling scenarios (USACE 2024). Table 4.6 summarizes the determined channel input parameters.

Table 4.6 HEC-HMS Channel Routing Model Input Summary

Watershed	Subwatershed ID	Reach Length (m)	Bed Slope (m/m)	Manning's n	Bottom Width (m)	Side Slope (xH:1V)
Jocko Creek	JC2	52,712	0.0180	0.035	8	2
	JCDS	11,250	0.0424	0.035	8	2
North Driftwood	ND1	19,624	0.0288	0.035	2	5.5
	ND10	12,061	0.0144	0.035	2	5.5
	ND13	3,934	0.0130	0.035	2	5.5
	ND14	4,207	0.0091	0.035	2	5.5
	ND3	45,820	0.0184	0.035	2	5.5
	ND5	17,321	0.0173	0.035	2	5.5
	ND6	5,298	0.0214	0.035	2	5.5
	ND7	5,097	0.0173	0.035	2	5.5
	ND8	6,047	0.0185	0.035	2	5.5
West Buskegau	WB1	30,602	0.0214	0.035	8	4
	WB12	5,576	0.0181	0.035	8	4
	WB14	5,222	0.0187	0.035	8	4
	WB16	11,997	0.0210	0.035	8	4
	WB19	10,941	0.0257	0.035	8	4
	WB21	19,548	0.0311	0.035	8	4
	WB3	21,752	0.0162	0.035	8	4
	WB4	67,900	0.0212	0.035	8	4
	WB5	11,414	0.0156	0.035	8	4
	WB6	13,142	0.0207	0.035	8	4
	WB9	8,191	0.0162	0.035	8	4

4.1.4.2.5 Snowmelt Model Parameters

HEC-HMS models hydrological systems through setting up various subbasin components, linking flows via reaches or junctions, and managing parameters to represent snowmelt, losses, and baseflow within each subbasin.

The Temperature Index method was chosen to process snowmelt conditions (USACE 2024). This method is an extension of the degree-day approach described within Chapter 11 of the NEH (USDA NRCS 2004). The Degree-day approach sets a defined amount of snowmelt to occur for each temperature day above freezing. The temperature index method supplements this approach by representing the impacts of the cold thermal energy stored in the snowpack, along with a limited memory of past conditions, and factors associated with atmospheric conditions on the melt rate (McNanus 2022).

Specific input parameters were chosen based off typical values and through further optimization of the model relative to local flow data. Table 4.7 summarizes the final input parameters into the HEC-HMS model for snowmelt.

Table 4.7 HEC-HMS Snowmelt Method Input Summary

Parameter Name	Description	Unit	Input Value
PX temperature	Temperature below which precipitation is considered as snow	ºC	0
Base Temperature	Base temperature defining freezing point	ºC	0
ATI Coefficient	Antecedent Temperature Index (ATI)	-	0.017
Wet melt rate	Represents the rate at which the snowpack melts when it is raining on the snowpack.	mm/ ºC day	20.450
Rain rate limit	If falling rain rate is greater than the rain rate limit, wet melt rate becomes applicable	mm/day	0.8
Cold Limit	Accounts for the changes in temperature that the snowpack undergoes during high precipitation	mm/day	4.941
Coldrate coefficient	Used to update the antecedent cold content index from one time interval to the next.	-	0.569
Water Capacity	specifies amount of melted water that must accumulate in the snowpack before liquid water becomes available at the soil surface for infiltration or runoff	%	3
ground melt rate	Fixed value to account for snowmelt caused by contact with the ground	mm/day	0

A final input for the temperature index method is the ATI-melt rate function. This dry melt function describes the relationship between melt rate and accumulated number of melt days over time. To determine the ATI-melt rate function, station data including snow depth measurements need to be sourced. In this case, the ECCC Timmins Victor Power Airport Station (6078285) was used.

First, the ATI-degree days is determined by taking the difference between air temperature above freezing temperature (0ºC). This is a cumulative value, so the ATI-degree days is always summed with that of the previous days. Each timestep now has a defined cumulative ATI-degree day value. Melt is determined for each timestep where there was no precipitation and with a positive ATI by taking the difference in measured snow depth with the past timestep. The melt rate of existing snow to the accumulated number of thawing degree days (McNanus 2022) is then the slope of the measured melt over the ATI-degree days. The melt rate function is summarized in the following table (Table 4.8).

Table 4.8 ATI Dry Melt Rate Function Summary Derived from Timmins Climate Station Data (6078262)

ATI (ºC Day)	Melt Rate (mm/ºC Day)
0	0.459
23.6	0.546
41.9	0.068
71.1	0.638
85.2	0.034

4.1.4.2.6 Losses Model Parameters

HEC-HMS models watershed losses, which represent the fraction of precipitation that is captured and stored, and does not contribute to runoff. The chosen loss method was the linear deficient and constant method, appropriate for long term continuous modelling runs within HEC-HMS (USACE 2024). This method defines an initial deficient capacity for the watershed and accounts for changes in infiltration capacity as the soil becomes saturated.

These values were iteratively generated through model calibration. Impervious area has been set to 0 as the watersheds cover naturalized land areas with minimal impervious land. Model input parameters are summarized in Table 4.9.

Table 4.9 HEC-HMS Loss Model Parameters

Parameter Name	Description	Unit	Input Value
Initial deficit	At the start of the simulation, it is the amount of water that would be required in order to fill the soil layer to the maximum storage	mm	72.38
Maximum deficit	the total amount of water the soil layer can hold, specified as an effective depth; best determined through calibration	mm	764.96
Constant rate	defines the infiltration and percolation rates when the soil layer is saturated	mm/hr	0.45
Impervious	percentage of the Subbasin Which is Directly Connected Impervious Area	%	0

4.1.4.2.7 Baseflow Model Parameters

The Recession Baseflow Method was used to define baseflow within the HEC-HMS models. Baseflow describes the fraction of flow that is present year-round as a result of groundwater inputs. The Recession Baseflow method defines initial discharge per area associated with each watershed. The initial discharge value comes from the results of the regional baseflow assessment, described within Section 4.1.2. The recession constant and ratio work to reset the baseflow contribution following storm events, making this baseflow method applicable for continuous modelling (USACE 2024). The parameter values are summarized in Table 4.10.

Table 4.10 HEC-HMS Recession Baseflow Parameters Summary

Parameter Name	Description	Unit	Input Value
Initial Discharge	Discharge per area; specifies the initial baseflow as a discharge with units of volume per time per area; based on result of the regional baseflow assessment.	$m^3/s/km^2$	0.0035
Recession Constant	Describes the rate at which baseflow recedes between storm events. It is defined as the ratio of baseflow at the current time, to the baseflow one day earlier.	-	0.999
Ratio	Ratio to Peak Threshold method; resets the baseflow during a storm event. Specified the flow ratio to the peak. The baseflow is reset when the flow divided by the peak flow falls to the specified value.	-	0.01

4.1.4.3 Model Calibration

An important step in developing a hydrological model is to calibrate the model using historical stream flows. The calibration process assist in the selection of an optimal set of model parameters, as were identified in Section 4.1.4.2.5, so the model can accurately predict flows. This study serves to provide a model to describe baseline conditions of the PA. Due to constraints within the project and limited temporal data from the local watersheds, the selected source for streamflow data to calibrate against comes from a nearby watercourse. Model calibration is based on available data from a nearby regional hydrological station operated by the WSC

The Porcupine River Hydrometric Data (HYDAT) station is the closest WSC regional flow station, with a total record from 1977-1995, and 2007-2022. This station is selected for model calibration due to its available data, proximity to the project study area watersheds (37 km SE), similar watershed size (408 km^2), and similar watershed characteristics. This station is also included in the regional hydrology assessment, as described in Section 4.1.2. In order to correctly relate stream flows recorded from the Porcupine River to watersheds in the LSA, recorded flows were extrapolated by drainage size to each of the three watersheds, generating a unique a streamflow time series for each model.

The widely accepted drainage-area ratio method (DARM) is used to develop daily timesteps of stream flow for three watersheds based on recoded flow in the Porcupine River. The DARM is a technique that statistically transfers same-day streamflow information from one location to another based on the change in drainage areas between both locations. The method estimates flow at an ungauged location by multiplying the measured flow at the nearby reference gauge by the area ratio of the ungauged to gauged drainage areas. This method is the most straightforward estimation approach for locations where no long-term streamflow data are available (USGS 2005; USGS 2006; and Gianfagna et al. 2015). Table 4.11 summarizes the ratios comparing drainage area between the referenced watersheds.

Table 4.11 Watershed Based Extrapolation Ratios to the Porcupine River HYDAT Station

Watershed	Drainage Area (km^2)	Ratio of Drainage Area to Porcupine River at Hoyle (Station 04MD004)
Porcupine River at Hoyle (Station 04MD004)	408	1.00
Jocko Creek	110	0.27
North Driftwood	383	0.94
West Buskegau	524	1.28

The time period 2008 – 2014 is selected for calibration since the recorded flows in this time period covered a range of high flow and low flow events. The Porcupine River at Hoyle station has data available until May 31, 2022. Beginning in 2014 until 2022, flow data quality issues were identified at Station ID 04MD004 by WSC due to backwater conditions from the operation of an Ontario Power Generation (OPG) dam downstream on Nighthawk Lake, localized beaver activity, and an upstream control dam at a tailing management facility (ECCC 2024). Impacted data from the 2014 to 2022 period was excluded from the analysis.

4.1.4.3.1 Meteorological Model Parameters

Within HEC-HMS, a meteorological model must be defined to establish atmospheric conditions of the model for the model run period. To accomplish this, nearby ECCC climate stations are used to provide daily temperature and precipitation depths for the models for the selected time period (Jan 1, 2008 until May 31, 2022) used for calibration.

A combination of the Timmins Climate station (6078262), Timmins Victor Power Airport station (VPA; 6078285) and Kapuskasing Station (6073975 /6073976 /6073978) are used to provide this data. A review of the climate data stations quality and selection process is discussed in detail within Section 5.1.7.

The Timmins VPA station provided consistent daily data for the model time period until 2009. Timmins Climate station became active in 2009 and became the primary source for meteorological data for the remaining calibration time period. The Timmins Climate station has missing temperature data for 80 days (1.5% of the data set) and missing precipitation measurements from 120 days (2.7% of the data set). The dataset was gap filled by linear interpolation when missing data was no more than two consecutive days of missing values. When data gaps were larger than two consecutive days, data from the Kapuskasing

Station was used for gap filling. The Kapuskasing station data accounts for 86 days of data, or 1.7% of the data set.

The Timmins Climate station recorded a 105.2 mm precipitation event on August 20, 2016. This precipitation event is in alignment with a 50-year storm and would have caused a significant hydrological response. However, the Porcupine station shows no hydrological response to this recorded event. To avoid model errors, this event was replaced with a less significant rainfall event that occurred on July 13, 2016, of 13.3 mm. This example evidences how variations in local weather patterns can impact results due to differences between model results and measured flows.

4.1.5 Regional Surface Water Quality

Regional surface water quality stations operated by the MECP as part of the Provincial Water Quality Monitoring Network (PWQMN) that monitor a suite of water quality parameters are selected to represent regional surface water quality relationships. This assessment examines water quality data at a regional scale, allowing for many years of water quality data from regional PWQMN sites to be analyzed allowing average and natural variability of parameters to be captured and assessed. This provides improved confidence in the surface water quality statistics, including identifying potential contaminants of concern.

The regional sites used in the baseline water quality analysis are presented below in Table 4.12 are selected to include in the assessment based on the following criteria:

- Located within a 200 km radius of the Project site
- Located upstream of pulp and paper effluent discharge points
- Located upstream of urban development areas
- Surface water quality monitoring data available for more than 10 years
- Surface water quality monitoring data preferably available within the last 25 years (1999) and ongoing collection

Table 4.12 Regional Surface Water Quality Sampling Locations

Station ID	Waterbody	NAD 83 UTM Zone 17N Coordinates	Distance to Site (km)	Period of Data Availability
19006401420	Mattagami River	473895m E, 5369134m N	24.71	1972 – Ongoing
19006404502	Porcupine River	483574m E, 5369945m N	25.26	1991 – Ongoing
19006400302	Porcupine River	487068m E, 5371339m N	25.36	1968 – 2005
19006400402	Porcupine River	495955m E, 5377416m N	26.34	1968 – Ongoing

Station ID	Waterbody	NAD 83 UTM Zone 17N Coordinates	Distance to Site (km)	Period of Data Availability
18771000602	Murdock Creek	570296m E, 5328291m N	115.40	1972 – 2003
18771000402	Blanche River	573257m E, 5316174m N	124.00	1972 – 2005
18013700102	Slate Creek	604928m E, 5251333m N	192.66	1988 – 2005

4.1.5.1 Data Analysis

Surface water quality data for each site, for each sampling event, are presented and compared against applicable regulatory guidelines. These include both the PWQOs (and Interim PWQOs where applicable) and CWQG-FALs.

Summary statistics are calculated for each parameter and include mean, minimum, maximum, standard deviation (std. dev.) and 75th percentile where applicable. Prior to calculating summary statistics for each parameter, results below the reportable detection limit (RDL) are processed based on guidance in Guidelines for Quality Assurance and Quality Control in Surface Water Quality Programs in Alberta (2006). The following criteria and treatments are applied to estimate a numerical value for values below the RDL at each Regional site:

- ≤15% of sample results below RDL – below RDL values represented as 50% of RDL value
- >15% and ≤50% results below RDL, and minimum 50 samples above the RDL value - probability plot regressions fitted to the above RDL data using the 5th percentile to replace non-detected sample results. To determine the 5th percentile, HYFRAN software (El Adlouni and Bobée 2015) is used to complete Lognormal, Weibull and Lognormal Pearson Type III regressions and selecting the regression with the best fit and fewest input parameters.
- >15% and ≤50% results below RDL, and minimum 30 samples above the RDL value – the above described probability plot regression approach is applied to the above RDL data and a note added to the results that the sample size may be inadequate to address potential outlier values. Additional water quality samples for this parameter would provide improved confidence in the non-detected sample results replacement value.
- >50% results below RDL – below RDL are not replaced with numerical values, and summary statistics are not calculated, besides the maximum parameter value.

Where RDL values were processed with numerical values, parameters are presented with respect to seasonal concentration differences (winter [January to March], spring [April to June], summer [July to September] and fall [October to December]).

4.2 Field Surveys

4.2.1 Hydrology

As part of the local hydrology baseline assessment, a field hydrometric monitoring program is conducted by WSP Golder, Stantec and Canada Nickel staff. WSP Golder installed the hydrometric stations and monitoring equipment between 2021 and 2022. WSP Golder, Stantec and Canada Nickel staff subsequently conducted equipment downloads and manual *in situ* flow and water level measurements. A total of 11 stations are installed at the Project site (Figure A-4, Appendix A).

Details for each station are presented in Table 4.13, including measurement history. A total of 6 stations were monitored for stage and discharge in 2021 with two field assessments, 10 sites in 2022 (one of which is a lake station to monitor stage) with quarterly monitoring when available, and 11 sites in 2023 (two of which were lake stations to monitor stage) with monthly monitoring when safe to do so. A hydrometric station summary sheet for each station describing the station and monitoring periods is presented in Table 4.13.

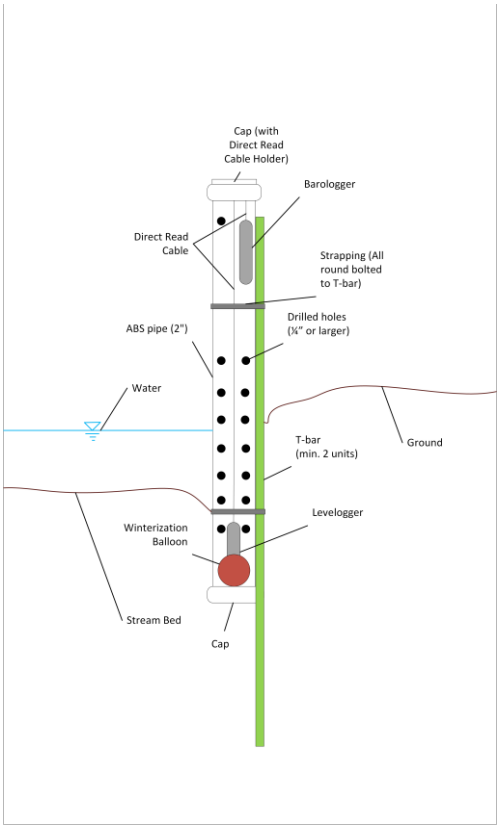
Table 4.13 Hydrometric Monitoring Stations

Station	NAD 83 UTM Zone 17N Coordinates	Drainage Area (km^2)	Observed Characteristics	Continuous and Manual Monitoring Period	Number of Manual Discharge Measurements	Number of Manual Stage Measurements
SW-1	472388m E, 5406654m N	7.2	Continuous water level, stage, flows and water temperature	July 2021 – Ongoing	2021 (1) 2022 (5) 2023 (7)	2021 (2) 2022 (2) 2023 (3)
SW-2b	469392m E, 5416357m N	105.5	Continuous water level, stage, flows and water temperature	April 2022 - Ongoing	2022 (3) 2023 (6)	2022 (2) 2023 (3)
SW-3	475779m E, 5405848m N	14.3	Continuous water level, stage, flows and water temperature	July 2021 - Ongoing	2021 (2) 2022 (4) 2023 (3)	2021 (2) 2022 (1) 2023 (1)
SW-4	479166m E, 5404727m N	13.6	Continuous water level, stage, flows and water temperature	July 2021 - Ongoing	2021 (2) 2022 (4) 2023 (3)	2021 (2) 2022 (2) 2023 (3)
SW-5	477086m E, 5409965m N	154.5	Continuous water level, stage, flows and water temperature	July 2021 - Ongoing	2021 (2) 2022 (3) 2023 (3)	2021 (2) 2022 (2) 2023 (4)
SW-6b	477325m E, 5416365m N	199.0	Continuous water level, stage, flows and water temperature	August 2022 - Ongoing	2022 (1) 2023 (8)	2022 (1) 2023 (4)

Station	NAD 83 UTM Zone 17N Coordinates	Drainage Area (km^2)	Observed Characteristics	Continuous and Manual Monitoring Period	Number of Manual Discharge Measurements	Number of Manual Stage Measurements
SW-7	474082m E, 5397600m N	72.3	Continuous water level, stage, flows and water temperature	April 2022 - Ongoing	2022 (3) 2023 (4)	2022 (3) 2023 (2)
SW-8	470602m E, 5399920m N	92.5	Continuous water level, stage, flows and water temperature	April 2022 - Ongoing	2022 (3) 2023 (3)	2022 (2) 2023 (2)
SW-9	471503m E, 5406812m N	12.3	Continuous water level, stage, flows and water temperature	April 2022 - Ongoing	2022 (3) 2023 (4)	2022 (3) 2023 (3)
SW-10	470349m E, 5406877m N	2.34	Continuous water level, water temperature	August 2022 - Ongoing	-	2022 (2) 2023 (2)
SuthLk	471002m E, 5404783m N	0.785	Continuous water level, water temperature	July 2023 - Ongoing	-	-
BARO	472764m E, 5408326m N	-	Atmospheric pressure, air temperature	July 2021 - Ongoing	-	-

Solinst Leveloggers® are installed at each station to monitor continuous water levels. A Solinst Barologger® is installed on site, located north of SW-9 along highway 655 to collect atmospheric pressure and air temperature data. This location was chosen as it was accessible for site staff and for being centrally located to the chosen hydrometric monitoring stations to provide accurate atmospheric data (Figure A.4, Appendix A). Figure 4.4 presents the typical stilling well setup for each of the 10 hydrometric stations.

Figure 4.4 Typical Stilling Well for Continuous Level Logger Installation



Each site has a staff gauge installed to allow manual water level measurements and support benchmark surveying for each site. Continuous water level and atmospheric pressure data is recorded at each site at a 30-minute frequency. The continuous water levels, water temperature, atmospheric pressure and air temperature data are processed in Aquarius™ hydrometric analysis software to barometrically compensate the Levelogger® water level data. The continuous water level data is also offset to compensate for differences between installed depth and thalweg channel depth and/or staff gauge measurements to support station rating curve development (e.g., stage: discharge relationships).

Manual measurements of streamflow are conducted using the Mid-Section Area-Velocity Method where the discharge is calculated from multiple velocity measurements and cross-section areas (Botma and Struyk 1971; WMO 2010a). Water velocity measurements under wadable conditions were conducted using either a Marsh-McBirney Flo-Mate 2000 with a topset wading rod or a FlowTracker2 (2021 to 2022). In 2023, all wadable flow measurements were captured with a FlowTracker2. During high flow events, either the Sontek M9 current profiler or the USGS Type AA Current Meter were utilized for data collection (2021 to 2022). In 2023, only the Sontek M9 is used during high flow events. The Marsh-McBirney Flow-Mate is a portable velocity flow meter type with an electromagnetic velocity sensor. The SonTek M9 and FlowTracker2 use acoustic doppler technology. Manual measurements are processed in Aquarius™ hydrometric analysis software to develop station rating curves.

The *in situ* continuous water levels and manual flow measurements are used to develop rating curves in the Aquarius™ software. The rating curve estimates continuous flows based on the relationship between water level and manual flow measurements. The WSC's manual for developing rating curves titled Hydrometric Manual – Data Computations (Rainville et al. 2016), World Metrological Organization (WMO) Manual on Stream Gauging, Vol. I: Fieldwork (2010a), WMO Manual on Stream Gauging, Vol. II: Computation of discharge (2010b) are used in this study to support rating curve development. The rating curve equation applied is listed in Eqiation 4-7 (Rainville et al. 2016).

$$\boldsymbol{Q = C\,(h + a)^n} \qquad \textbf{Equation 4-7}$$

Where:

Q	= discharge (m^3/s)
C, n	= constants
h	= gauge height/offset (m)
a	= stage at zero flow

4.2.1.1 Bathymetry

Canada Nickel staff conducted bathymetric surveys in eight lakes potentially overlain by Project activities, receiving effluent discharge or within watersheds potentially disturbed or altered by Project activities. The project site lakes are listed as follows:

- Gerry Lake
- Jack Lake
- Mel Lake
- Martin Lake
- Sutherland Lake
- Zed Lake
- Unnamed Lake South of Zed Lake
- Unnamed Lake LG Stockpile

Bathymetry data is collected from the project lakes by using a combined GPS/sonic transducer. The surveys are completed in alignment with the field methods provided in the Manual of Instructions for Bathymetric Surveys published by the MNRF (Levec and Skinner 2004). Vertical and horizontal resolutions are approximately +/- 0.1 m and 4.0 m respectively.

Lake perimeters from base mapping are digitized into a GIS database to calculate surface area and perimeter. Bathymetric data are used to determine maximum depth and digitized to estimate lake volume and calculate mean lake depth.

4.2.2 Surface Water Quality

4.2.2.1 Monitoring Period, Frequency, and Locations

Surface water quality monitoring sites in watercourses and waterbodies were selected based on the following criteria:

- Proximity of surface waters to receiving mine water discharge
- Proximity to the proposed tailings management facility (TMF)
- Waterbodies in the PA of importance to Indigenous nations
- Alignment with other monitoring programs (i.e. surface water quantity and fisheries)

Monitoring activities have been conducted by WSP Golder (2021, 2022, 2023) and Canada Nickel staff (2023).
The sampling frequency occurred annually, quarterly, bi-monthly, or monthly, with some locations as single sampling events. Sampling conducted in 2021 involved 19 sites. In 2022, 13 additional water quality monitoring sites were added to the program. In 2023, 13 sites were added to the monitoring program. The sampling locations are summarized in Table 4.14 and presented in Figure A.5, Appendix A.

Table 4.14 Local Surface Water Quality Monitoring Stations

Watershed	Station ID	Watercourse/ Waterbody Type	Reference/Rationale	Sampling Frequency	Monitoring Period
Jocko Creek	JCRK-01	Watercourse	To constrain and characterize effects of the Kidd Creek Mine on water quality of the Mattagami River.	Quarterly	May 2023 – November 2023
	JCRK-02	Watercourse	Upstream of proposed TMF	Monthly	February 2023 – December 2023
	JCRK-03	Watercourse	Jocko Creek, downstream from highway 655	Monthly	February 2023 – October 2023
	JC-S-01	Watercourse	South of proposed tailings facility	Monthly	May 2022 – December 2023
	KC-01	Watercourse	To constrain and characterize effects of the Kidd Creek Mine on water quality of the Mattagami River	Monthly	February 2023 – April 2023
	MATR-01	Watercourse	Proximate to a proposed discharge location and aligns with fisheries program.	Monthly	October 2021 – November 2023
	MATR-02	Watercourse	Downstream of proposed discharge location.	Quarterly	October 2021 – December 2023

Watershed	Station ID	Watercourse/ Waterbody Type	Reference/Rationale	Sampling Frequency	Monitoring Period
	MATR-REF	Watercourse	Mattagami River US of Lower Sturgeon Dam, upstream of Project discharges and confluence of Jocko Creek.	Monthly	May 2023 – November 2023
	UWC-01	Watercourse	Unnamed wetland/watercourse	Quarterly	February 2023 – October 2023
North Driftwood	DAVLK	Lake (Waterbody)	Davis Lake, proximate to the proposed TMF and process plant area	Quarterly	June 2022 – September 2022
	GERLK	Lake (Waterbody)	Gerry Lake, proximate to the proposed TMF and process plant area	Quarterly	August 2021 – December 2023
	JACLK	Lake (Waterbody)	Jack Lake, proximate to the proposed TMF and process plant area	Monthly	June 2022 – October 2022
	MARLK	Lake (Waterbody)	Martin Lake, proximate to the proposed TMF and process plant area	Monthly	August 2021 – December 2023
	MELLK	Lake (Waterbody)	Mel Lake, proximate to the proposed TMF and process plant area	Single event	September 2022
	SUTHLK	Lake (Waterbody)	Sutherland Lake, proximate to the proposed TMF and process plant area	Quarterly	September 2022 – October 2023
	NDR-P-01	Pond (Waterbody)	Small unnamed waterbody, North Driftwood River subwatershed	Quarterly	August 2021 – October 2022
	NDR-P-02	Pond (Waterbody)	Small unnamed waterbody, North Driftwood River subwatershed	Quarterly	August 2021 – October 2022
	NDR-P-03	Pond (Waterbody)	Small unnamed waterbody, North Driftwood River subwatershed	Quarterly	August 2021 – October 2022
	NDR-P-04	Pond (Waterbody)	Small unnamed waterbody, North Driftwood River subwatershed	Quarterly	August 2021 – October 2022
	NDR-P-05	Pond (Waterbody)	Small unnamed waterbody, North Driftwood River subwatershed	Quarterly	June 2022 – September 2022
	NDR-P-06	Pond (Waterbody)	Small unnamed waterbody, North Driftwood River subwatershed	Quarterly	August 2022 – October 2022
	NDR-P-07	Watercourse	Small unnamed tributary,	Quarterly	June 2022 – October 2022

Watershed	Station ID	Watercourse/ Waterbody Type	Reference/Rationale	Sampling Frequency	Monitoring Period
			North Driftwood River subwatershed		
	NDR-S-01	Watercourse	North Driftwood River, Main Stem	Quarterly	August 2021 – October 2022
	NDR-S-02	Watercourse	To support continuity and anticipated requirements for effects monitoring before and during proposed diversion of the North Driftwood.	Monthly	August 2021 – December 2023
	NDR-S-04	Watercourse	Proximate to proposed rock stockpile area, water diversion, and highway 655 relocation	Monthly	August 2021 – October 2022
	NDR-S-04b	Watercourse	Proximate to proposed rock stockpile area, water diversion, and highway 655 relocation. Downstream replacement for NDR-S-04, which will be overprinted.	Monthly	February 2023 – December 2023
	NDR-S-05	Watercourse	North Driftwood River, Main Stem	Two sampling events	June 2022 – August 2022
	NDR-S-06	Watercourse	Downstream of Project influences, likely will correspond to the local study area boundary for the Project	Monthly	June 2022 – December 2023
	NDR-TRIB-01	Watercourse	Small unnamed tributary, North Driftwood River subwatershed	Bi-Monthly	August 2021 – October 2022
	NDR-TRIB-02	Watercourse	Small unnamed tributary, North Driftwood River subwatershed	Quarterly	August 2021 – October 2022
West Buskegau	PRSLK	Lake (Waterbody)	Prosser Lake, within the vicinity of the planned TMF	Quarterly	February 2023 – November 2023
	BS-SW-01	Watercourse	Small unnamed wetland/tributary north of site	Monthly	May 2023 – August 2023
	PC-01	Watercourse	Tributary to the main stem of West Buskegau, proximate to planned TMF. Relocated and renamed from WBR-S-01.	Quarterly	March 2023 – December 2023
	WBR-P-01	Watercourse	Small unnamed wetland/tributary West Buskegau River	Annually	August 2021 – June 2022
	WBR-P-02	Watercourse	Wetland/tributary to the main stem of West Buskegau, proximate to rock storage facility	Single event	August 2021

Watershed	Station ID	Watercourse/ Waterbody Type	Reference/Rationale	Sampling Frequency	Monitoring Period
	WBR-P-03	Watercourse	Small unnamed wetland/tributary West Buskegau River	Monthly	September 2022 – December 2023
	WBR-P-04	Watercourse	Small unnamed wetland/tributary West Buskegau River	Monthly	September 2022 – December 2023
	WBR-S-01	Watercourse	West Buskegau River, Main Stem	Quarterly	August 2021 – August 2022
	WBR-S-02	Watercourse	West Buskegau River, Main Stem	Quarterly	August 2021 – June 2022
	WBR-S-03	Watercourse	West Buskegau River, Main Stem	Quarterly	August 2021 – September 2022
	WBR-S-04	Watercourse	Proximate to rock storage area, West Buskegau River, Main Stem	Monthly	August 2021 – December 2023
	WBR-S-05	Watercourse	West Buskegau River, Main Stem	Single event	September 2022
	WBR-S-06	Watercourse	Downstream of outflows from Prosser Lake and the TMF, proximate to the open pit	Monthly	February 2023 – October 2023
	WBR-S-07	Watercourse	Downstream of all potential Project effects, likely correspond to the local study area boundary for the Project	Quarterly	February 2023 – December 2023
	WBR-S-REF	Watercourse	Upstream reference site for the Project	Quarterly	March 2023 – December 2023

4.2.2.2 Monitoring Methods

Surface water monitoring was completed by both WSP and Canada Nickel staff. For each monitoring event, water samples were collected for submission to a Canadian Association for Laboratory Accreditation (CALA)-accredited laboratory following chain of custody protocols for analysis. Throughout the duration of the project, samples have been sent to two companies, ALS Environmental Laboratories (ALS) and Testmark Laboratories (Testmark). From August 2021 to October 2022, primary and duplicate samples were sent to ALS for analysis. In addition, samples for some sampling events in June and July 2023 were sent to ALS for analysis. From February 2023 to present, primary and duplicate samples have been sent to Testmark laboratories for analysis. In addition, *in situ* surface water quality was monitored using a calibrated YSI DSS multi-parameter probe. The *in situ* parameters included water temperature, pH, conductivity, dissolved oxygen (DO), oxidation reduction potential (ORP), and turbidity (added in 2023). Water samples were collected following standard protocols for grab sampling, sample vial labelling, sample storage and shipping in coolers at approximately four degrees Celsius (°C), and

completion of Chain of Custody (CoC) sample submission documentation. Water samples for ALS were submitted to their laboratory in Waterloo, ON, and samples for Testmark were sent to their Timmins, ON location.

Field sampling involved the following general steps:

- Analytical QA/QC in the ALS and/or Testmark labs
- Field verification of proposed water quality station locations
- GPS siting of monitoring station
- Completion of a field data sheet
- Measurement of *in situ* water quality parameters (colour, clarity, odour, temperature, conductivity, pH, turbidity, and dissolved oxygen) using a multiparameter sonde and visual observations at the time of analytical sample collection
- Shipping of water samples to Testmark ALS and/or Testmark labs for analysis

Sampling QA/QC is in keeping with laboratory, regulatory, and industry standards. QA/QC includes the following measures:

- Laboratory sample vial pre-labelling
- Trained and experienced sampling technician team consisting of at least two persons
- Routine random duplicate samples and field blanks
- Primary CoC form completion, with secondary review by alternate sampling technician
- Appropriate shipping protocols to maintain integrity of the samples received at the lab

Field meters used to collect *in situ* water quality data were calibrated with certified standard solutions and as per manufacturer maintenance manual guidance. Pre-cleaned and pre-labelled bottles and nitrile gloves were used for sample collection to minimize cross-contamination. Water samples were preserved on site with preservatives provided the laboratory and were stored at 4°C until analysis. Samples submitted to the laboratory that required filtration (e.g., dissolved metals) were field filtered prior to shipment. Samples that required filtration were submitted to the Testmark laboratories within recommended hold times to allow for laboratory filtration. Field blanks were collected to check for potential cross-contamination during field collections and with sample storage and transport, respectively.

Field duplicates were collected during each monthly sampling event with 22 duplicate samples out of 317 total samples collected. Field precision was determined by measuring the difference between the collected field data and its field duplicate using relative percent difference (RPD) calculations.

4.2.2.2.1 Lake Profiles

For select lakes, temperature and DO measurements were collected using a calibrated YSI DSS multi-parameter probe to assess the vertical profile in spring, summer, and fall. Measurements were collected at 1 m depth intervals, targeting the deepest part of the waterbody. Lake profile data were collected by WSP in 2022 and 2023 (WSP 2024).

4.2.2.2.2 Laboratory Methods

All water samples were shipped to ALS (2021 to 2023) and Testmark (2023) in Timmins, Ontario, which then shipped the samples to labs across Canada depending on parameter analysis required. Prior to conducting sampling, the required analytical parameters, WQGs, and detection limits were discussed with ALS and Testmark.

Analytical RDLs were selected based on PWQOs and CCME CWQG-FALs values, and RDLs listed in the MDMER Schedule 3 Tables 1 and 2. Adherence to required detection limits was adequate; however, detection limits varied at times due to sample dilution or analytical interference.

The analytical suite includes all the parameters listed in section 47. (2) of O.Reg. 35/24 and the baseline parameter list in the MDMER. Total and dissolved metals were analyzed. To investigate the nutrient status of the system, several nutrients were analyzed.

4.2.2.2.3 Laboratory Quality Assurance/Quality Control

Laboratory quality control programs included analysis of certified reference materials, laboratory control samples, laboratory duplicates, method blanks and matrix spikes to determine accuracy and precision of instrumentation and methods. Data reports submitted by ALS/Testmark were reviewed upon receipt to check that the reported data met the laboratory data quality objectives (DQOs). In instances where method recovery was not accurately calculated due to matrix interferences, detection limits were adjusted to prevent influence on analytical results. Data QA/QC controls included:

- Analytical QA/QC in the Testmark and/or ALS labs
- Analytical data review by qualified person subsequent to laboratory reporting
- Statistical analyses to detect data outliers and avoid analytical skew from data anomalies

4.2.2.2.4 Data Analysis

Surface water quality data for each site, for each sampling event, are presented and compared against applicable regulatory guidelines. These include both the PWQO (and Interim PWQOs where applicable) and CWQG-FAL. The data analysis approach for calculating summary statistics is discussed in Section 4.1.5.1. For local water quality data analysis, summary statistics are generated for parameters based on grouping stations in waterbodies and watercourses.

Where RDL values were processed with numerical values, parameters are presented with respect to seasonal concentration differences (winter [January to March], spring [April to June], summer [July to September] and fall [October to December]). PoPCs where the 75th percentile exceeds the PWQO criteria and classifies the receiver as a Policy 2 receiver for that parameter, are identified and further analyzed by each watershed.

5 Baseline Conditions for Surface Water Resources

5.1 Physiographic Setting

The physiographic setting descriptions align with the following baseline studies: 2021-2023 Fish and Fish Habitat Baseline Report (Appendix B.7.4 of the Impact Statement), Soils and Terrain Baseline Report (Appendix B.1 of the Impact Statement), Vegetation, Riparian and Wetland Environments Supplemental Baseline Report (Appendix B.7.1 of the Impact Statement) and Terrestrial Wildlife and Wildlife Habitat Supplemental Baseline Report (Appendix B.7.3 of the Impact Statement).

5.1.1 Physiography

The Project site is located within the Lake Abitibi Ecoregion of Ontario (Ecoregion 3E), a part of the Ontario Shield. This ecoregion is identified as a Humid Mid-Boreal Ecoclimatic Region, characterized by long, cold, and snowy winters, with short and mild summers (Ecoregions Working Group 1989). This region sits on top of the Precambrian Shield, with diverse surficial geology. Local site watersheds have organic, and clay dominant soils and land cover is primary forested with a significant presence of wetlands, such as swamps or marshes, open water areas and rivers (OMAFRA 2023; MNRF 2023a).

5.1.2 Topography

The topography of the PA is defined by a client provided LiDAR DEM and supplemented with provincially available topographic contour mapping (MNRF 2023b). The three Project study watersheds (Jocko Creek, North Driftwood, and West Buskegau Rivers) are relatively flat, with an overall topographic average slope of 1.7% for the entire Project study area (Figure A.3, Appendix A).

Elevations within the Jocko Creek watershed range from a minimum of 258.9 meters above sea level (masl) at subwatershed JCDS to a maximum of 322.3 masl within JC2, with an overall average slope of 1.8%. The North Driftwood watershed ranges from a minimum of 248.2 masl at the outlet of the watersheds within sub-basins ND1 and ND2, and a maximum of 303.1 masl within ND23 with a total average slope of 1.8%. The West Buskegau watershed has a minimum elevation of 260.9 masl at the watershed outlet within WB1, and a maximum elevation of 356.1 masl within the subbasin WB27, with a total average slope of 1.6% (Figure A.3, Appendix A). The average topographic elevation for all three watersheds is 276.7 masl. Channel slopes of the watershed vary from 0.05% within the West Buskegau, 0.08% within North Driftwood, and 0.11% at Jocko Creek according to OWIT (MNRF 2023a).

5.1.3 Vegetation

The OWIT assessment identified the PA to be covered primarily by mixed forests and coniferous forests (approximately 50%), as well as bogs and swamps (approximately 25%), with remaining land cover as either sparsely treed (approximately 15%), or as disturbance, fens, or open water (MNRF 2023a). Typical boreal vegetation found in this region include black spruce, tamarack, jack pine, trembling aspen, and white birch (Rowe 1972).

5.1.4 Watershed Delineation

The Jocko Creek watershed was determined to have a total area of 109.6 km^2, further delineated into 3 subwatersheds. The North Driftwood River watershed has a total area of 383.3 km^2, discretized into 23 subwatersheds. Lastly the West Buskegau River watershed is found to be 524.1km^2, split into a total of 27 subwatersheds. The North Driftwood River watershed outlet was selected to be downstream of the potential LSA boundary at the next major confluence, which was immediately downstream of the junction with Lennox Creek. The West Buskegau River watershed outlet was selected to be at the next major confluence downstream of the potential LSA, which was immediately downstream of the junction with Reamue Creek. The Jocko Creek watershed outlet was selected to be downstream of the expected influence of the PA activities and prior to the confluence with Kidd Creek. Watershed and subwatershed characteristics tables are provided in Appendix B.1. Figure A.3 within Appendix A presents the watersheds and subwatersheds of the study area.

5.1.5 Water Resources

As described, the delineated local watersheds include the Jocko Creek watershed, the North Driftwood River watershed, and the West Buskegau River watershed (Figure A.3, Appendix A).

Jocko Creek leads into the Mattagami River, draining northwards towards James Bay. Mattagami River confluences with the Missinaibi River, which combines into the Moose River, one of the major rivers leading into the James Bay. At the point of the Jocko Creek confluence, the Mattagami River covers a drainage area of 38,700 km^2 with a main channel length of approximately 550 km (MNRF 2023a). Jocko Creek is the southernmost watershed in the PA, closest to the City of Timmins. Lakes cover less than 0.5% of the Jocko Creek watershed area (MNRF 2023a). Within the Jocko Creek watershed, Zed Lake and an unnamed lake south of Zed Lake are included in the bathymetric assessment described in Section 5.2.3.3.

The North Driftwood River connects with the Abitibi River, which continues on to confluence with the Moose River, about 55km downstream from where the Mattagami River confluences with it as well. The North Driftwood watershed has less than 0.6% of the watershed area covered by lakes (MNRF 2023a). Lakes found in this watershed that are also included in the bathymetry assessment include Martin Lake, Gerry Lake, Jack Lake, Mel Lake, and Sutherland Lake. These lakes are found north of the Zed Lake in the Jocko Creek watershed, within subwatersheds ND19 and ND20.

West Buskegau drains northwards and connects with the Abitibi River 25 km upstream from where the North Driftwood River meets with the Abitibi River. The West Buskegau watershed contains a slightly greater proportion of lakes, covering about 0.9% of its total drainage area (MRF2023a). The lakes found in the West Buskegau include Prosser Lake in WB20, near the Jocko Creek Watershed, Sawmill Lake, Nerandeau Lake, and Lizard Lake in WB27.

5.1.6 Local Water Users

Ontario Power Generation (OPG) is currently operating a hydroelectric dam on the Mattagami River downstream from the Project site. The facility is called the Lower Sturgeon Generation Facility and has been in operation since 1923, providing 14 Megawatts (MW) of energy production to its end users (OPG 2024). The WSC operates a HYDAT station on the Mattagami River located just south of Timmins. This station is used for monitoring water level and flow.

A review of the MECP water well record found that >60 wells were noted to be located near the Project Site area (MECP 2024). Active wells include those used for commercial business, Bush Camps, or domestic water supply. The Groundwater Baseline Report (Appendix B.5 of the Impact Statement) Section 5.4 describes in detail the use of wells and history of well use in and around the Project RSA.

5.1.7 Climate

As MSC had not updated local climate station climate normals at the time of writing, an ensemble of historical climate stations from ECCC (2023a) were used to project the 1991-2020 climate normal. The historical climate stations in Table 5.1 are within a 100 km range of the Project, have more than 10 years of data, and have datasets that have a record period that includes more recent data trends (2000's and later). The climate stations were compared with each other to determine the climate data that best represents the PA and to form an ensemble of stations to represent conditions to present.

Table 5.1 Regional Climatic Stations

Station ID	Station Name	Coordinates	Record Period (Total)	Data Interval	Elevation (masl)	Distance from Site (km)	Comments
6078286	Timmins A	48°34'14" N 81°22'36" W	2012 – 2023 (12)	Hourly Daily	294.7	26.20	Missing precipitation, rain, and snow data
6078285	Timmins Victor Power A	48°34'11" N 81°22'36" W	1951 – 2012 (62)	Hourly Daily Monthly	294.7	26.29	Full precipitation, rain and snow Data set until 2009
6078262	Timmins Climate	48°33'26" N 81°23'25" W	2008-2023 (16)	Hourly Daily	294.4	27.73	Missing rain and snow data
6070QK6	Bonner Lake	49°23'00" N 82°07'25" W	1990 – 2023 (34)	Daily Monthly	245.0	84.43	Gaps in rain and snow data and data not subject to review
6073960 /6073980	Kapuskasing CDA	49°24'00" N 82°26'00" W	1918-2023 (106)	Daily Monthly	217.9	100	Missing rain and snow data
6073975 /6073976 /6073978	Kapuskasing A	49°24'50" N 82°28'03" W	1937-2023 (87)	Hourly Daily Monthly	226.5	100	
Source: ECCC 2023a							

The Timmins A (6078286), Timmins Victor Power A (VPA; 6078285), and Timmins Climate (6078262) stations are located within the closest proximity to the Project site and have elevations consistent with the PA (265 to 290 masl). Timmins VPA has a mostly complete data set from 1951 up to 2012 for temperature, and a mostly complete data set from 1951 to 2009 for precipitation. Although Timmins Climate has climate data from 2008 through 2023, the rain and snow data are not consistently reported for this period. The Timmins A station cannot be used to infill the missing Timmins Climate data as it does not start collecting precipitation, rain, and snow data until after 2021. Bonner Lake (6070QK6) has gaps in the snow and rain data, and the presented data available is not subject to review by the National Climate Archives. The Kapuskasing stations (6073960, 6073980, 6073975, 6073976, 6073978) are located a considerable distance from the site (100 km) and are not within the range of elevations within the PA, and thus may represent different climatic conditions than observed on site.

The 1991-2020 climate normal precipitation and temperature data was developed using Timmins VPA observations used from 1991 through 2009 for precipitation and 1991 through 2012 for temperature. The Timmins Climate station data supplemented the Timmins VPA data from 2009 to 2020 for precipitation and 2012 to 2020 for temperature to compute the updated climate normals.

5.1.7.1 Temperature

From the generated climate normal (1991-2020) dataset, average monthly and annual temperatures were estimated, as shown in Table 5.2. The climate normal mean temperature ranges from -16.4ºC in January to 17.6ºC in July.

Table 5.2 1991-2020 Temperature Climate Normal for Combined Timmins VPA and Timmins Climate Stations

Month	Average Temperature (ºC)
January	-16.4
February	-14.2
March	-7.6
April	0.9
May	9.7
June	15.3
July	17.6
August	16.2
September	11.8
October	4.6
November	-3.0
December	-11.2
Total	**2.0**

5.1.7.2 Precipitation

The climate normal annual precipitation from the combined stations for the 1991-2020 period is presented in Table 5.3.

Table 5.3 1991-2020 Precipitation Climate Normal for Combined Timmins VPA and Timmins Climate Stations

Month	Total Precipitation (mm)[1]
January	48.2
February	39.6
March	48.8
April	60.3
May	64.6
June	80.8
July	82.7
August	80.2
September	84.6
October	86.1
November	70.9
December	54.8
Total	**801.8**

Note:
1 wet equivalent precipitation

The annual climate normal precipitation was found to be 801.8 mm, a 4% decrease in total precipitation from the 1981-2010 climate normal presented by the ECCC for the Timmins VPA station of 834.6 mm (ECCC 2023b). A difference of 4% between the two climate normal periods likely result from changes in climatic conditions at the stations as well as the inclusion of data from the Timmins Climate station for precipitation recordings from 2009 to 2020.

The wet and dry years assessment was performed using the record of Timmins VPA station (1956 – 1990) and the combined station record used for determining updated climate normal years record for 1991-2020, as described in Section 5.1.7, yielding a total record of 64 years. The wettest year on record was 1961 with annual total precipitation amount of 1,129.7 mm, representing an event between the 100 and 200-yr return period. The driest year on record was 2010, with an annual precipitation amount of 521.4 mm, representing a dry year event with a return period of between 50 and 100 years. Table 5.4 summarizes the wet year and dry year return periods for annual precipitation.

Table 5.4 Wet and Dry Year Total Precipitation Return Periods

Return Period (Year)	Wet Year (mm)	Dry Year (mm)
5	940	680
10	981	634
25	1,034	579
50	1,073	541
100	1,113	505
200	1,152	472

Snow data is limited at the ECCC climate stations relevant to the Project. As identified in Table 5.1, most stations have no snow depth data, or inconsistent snow depth measurements. Only the Timmins VPA station has maintained snow depth information from 1955 until 2009. Since consistent snowfall data is not available for beyond 2009, the 1980-2010 climate normals from ECCC are provided to characterize snowfall at the site (Table 5.5).

Table 5.5 Timmins VPA Climate Station (6078285) Snow Statistics Summary (1981 - 2010 Climate Normal)

	Snowfall (cm)	Average Snow Depth (cm)	Median Snow Depth (cm)	Snow Depth at Month end (cm)	Extreme Daily Snowfall (cm)	Date (yyyy/dd)
January	57.8	53	53	62	33	1962/07
February	45.9	64	64	63	37	1999/28
March	44.8	54	54	34	48.2	1983/19
April	27.2	18	16	4	36	1985/06
May	5	1	0	0	17	1986/01
June	0.2	0	0	0	2.6	1980/10
July	0	0	0	0	0	1955/01
August	0	0	0	0	0	1955/01
September	1	0	0	0	7.2	1989/23
October	15.1	0	0	1	19.3	1976/15
November	49	7	5	14	28.4	1966/28
December	65.2	28	28	41	39.6	1985/01
Year	311.3	19	18	18	-	-
Source: ECCC 2023b						

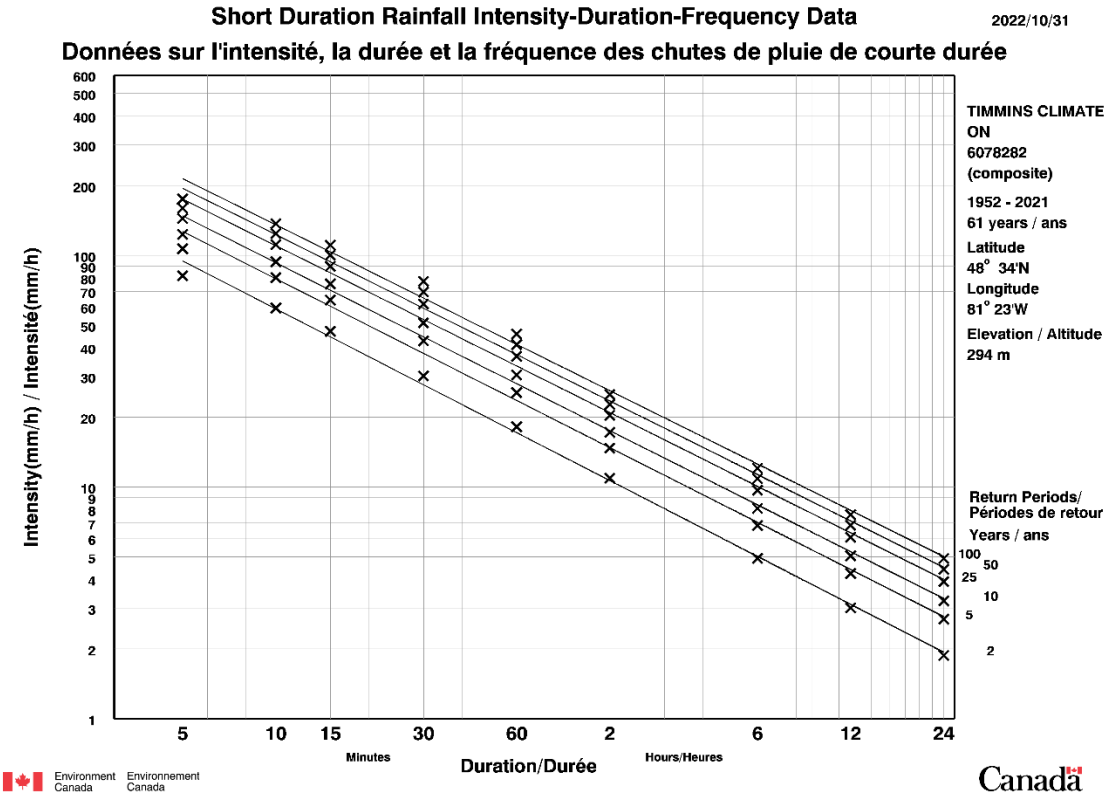
5.1.7.2.1 Intensity Duration Frequency Curve

An intensity-duration-frequency (IDF) curve was obtained from ECCC using a composite dataset of Timmins stations from 1952 through 2021 using a Gumbel distribution and the method of moments. The composite Timmins stations had a combined 61 years of data, with the IDF curve results presented in Table 5.6 and Table 5.6 and in Figure 5.1.

Table 5.6 Intensity-Duration-Frequency Curves for Combined Timmins Stations

Duration	Total Rainfall (mm)					
	2 Year	**5 Year**	**10 Year**	**25 Year**	**50 Year**	**100 Year**
5 minute	6.8	8.9	10.3	12.0	13.3	14.6
10 minute	9.9	13.4	15.7	18.6	20.7	22.9
15 minute	11.8	16.1	18.9	22.5	25.1	27.7
30 minute	15.1	21.4	25.6	30.9	34.8	38.7
1 hour	18.2	25.6	30.5	36.7	41.3	45.8
2 hour	21.8	29.4	34.4	40.8	45.6	50.2
6 hour	29.4	40.8	48.6	58.2	65.4	72.6
12 hour	36.0	50.4	61.2	73.2	81.6	91.2
24 hour	45.6	64.8	76.8	93.6	106	118
Source: ECCC 2023c						

Figure 5.1 Intensity-Duration-Frequency Curves for Combined Timmins Stations



Source: ECCC 2023c

5.1.8 Climate Change

Impacts from climate change to the LSA is necessary to consider, as warming of 1.3°C of Canada's climate between 1948 and 2016 has been observed (Bush and Lemmen 2019). Northwestern Ontario has observed an increase of 2.4°C between 1970 and 2020, with a greater ratio of winter precipitation falling as rain (MNRF 2021).

Modelled climate change projections coming from the ensembled CMIP6 models, distributed through Climatedata.ca are provided in 30-year time frame projection periods. Based on the Project temporal scale of three years of construction, 41 years of operations, five years of active closure, and further into the post-closure period, projections of climate change impacts for the 2071-2100 years are considered to include the active mine, closure, and post-closure period.

Changes in temperature and precipitation are described in the ensuing sections using the moderation emissions scenario, defined as SSP2-4.5, as recommended by the CSA (2019). Climate change modelled results for the time period of 2071-2100.

5.1.8.1 Temperature

Projected changes in temperature under the 2071-2100 period are provided for the moderate emissions scenario, SSP2-4.5, in Table 5.7. Modelled results for the low and high emissions scenarios, SSP1-2.6 and SSP5-8.5, are provided in Appendix B.3. Results come from the ensembled CMIP6 models, provided by Climatedata.ca (2024), which use 1971 – 2000 as a reference period for comparison.

Table 5.7 Projected Temperature Changes at Timmins Climate Station - SSP2-4.5, Projection Period 2071-2100, relative to 1971-2000 Climate Normal

Parameter	Spring	Summer	Autumn	Winter
Median Change in Temperature	+3.9˚C	+3.7˚C	+3.6˚C	+5.3˚C
90th percentile confidence interval	+2.8˚C – +5.2˚C	+2.5˚C – +5.6˚C	+3.1˚C – +5.8ºC	+4.2˚C – +7.6ºC
Source: ClimateData.ca 2024				

The results of the ensembled models show that temperatures are expected to increase seasonally by on average 3.7˚C through the spring, summer, and autumn months. Winter months can expect significantly greater warming by 5.3˚C.

Increasing temperatures will affect runoff by impacting the spring freshet that comes as a consequence of snowpack melt. Warmer temperatures in northern Ontario would lead to less snow and ice buildup over the winter months, increase in evapotranspiration rates, changes to local growing seasons and water levels, and alterations to wetlands found in Northern Ontario (Dove-Thomson et. al. 2011). These changes would impact availability of water to streams and rivers in the LSA.

5.1.8.2 Precipitation

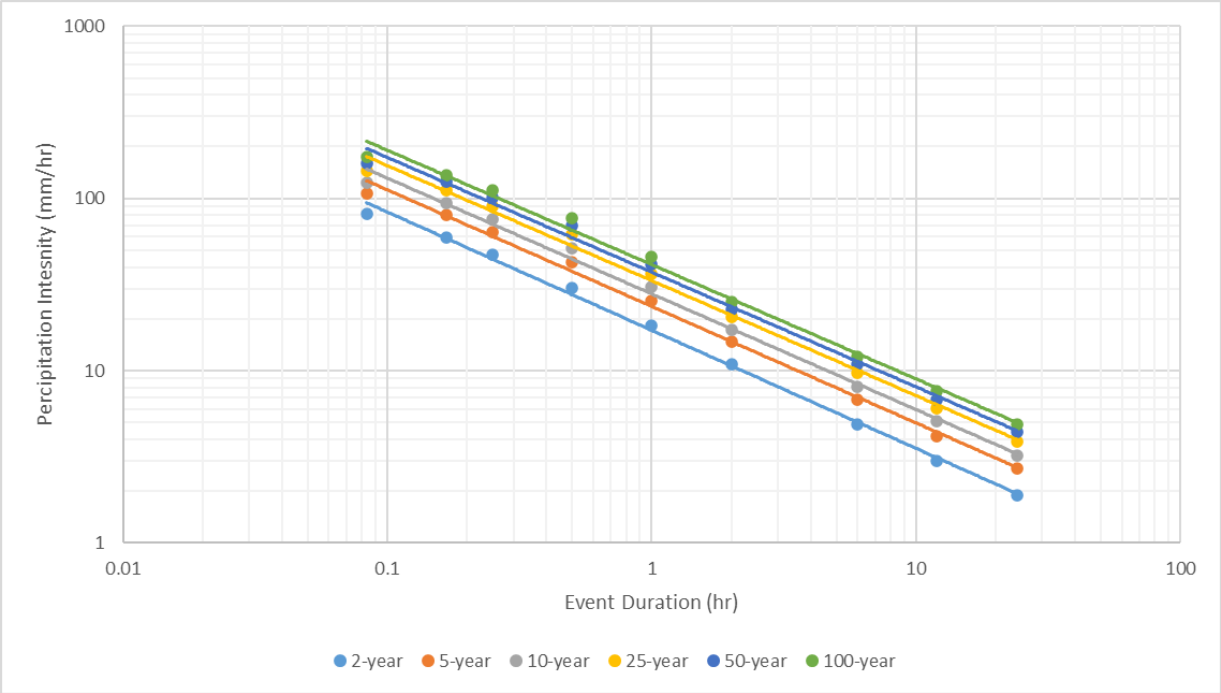
Projected changes in precipitation will affect the IDF curves at the 2071-2100 period. The impacted IDF curve is provided for the moderate emissions scenario, SSP2-4.5, in Table 5.8 and Figure 5.2.

Table 5.8 Projected IDF Curve at Timmins Climate Station - SSP2-4.5, Projection Period 2071-2100 - Converted to Total Rainfall Depths

Duration	Total Precipitation (mm)					
	2-year	5-year	10-year	25-year	50-year	100-year
5	8.8	11.5	13.3	15.6	17.3	18.9
10	12.8	17.3	20.3	24.0	26.8	29.7
15	15.3	20.8	24.5	29.0	32.5	36.0
30	19.5	27.5	33.0	40.0	45.0	50.0
60	24.0	33.0	39.0	48.0	53.0	59.0
120	28.0	38.0	44.0	52.0	60.0	64.0

Duration	Total Precipitation (mm)					
	2-year	5-year	10-year	25-year	50-year	100-year
360	37.8	52.8	60.0	78.0	84.0	96.0
720	46.8	64.8	79.2	94.8	106	118
1440	60.0	84.0	98.4	120	137	151
Source: Climatedata.ca 2024						

Figure 5.2 Projected IDF Curve at Timmins Climate Station - SSP2-4.5, Projection Period 2071-2100



Source: Climatedata.ca 2024

IDF curves for the low and high emissions scenarios (SSP1-2.6 and SSP5-8.5) as well as the relative percent difference comparison tables are provided in Appendix B.3. In reference to the IDF curve presented in Section 5.1.7.2 0, overall precipitation amounts for storms of all durations and events have increased by an average of 22.7% under the SSP2-4.5 emissions scenario. The SSP1-2.6 and SSP5-8.5 scenarios see relative percent difference increases of 15.9% and 36.2%, respectively. In general, for the projection period of 2071-2100, the PA should expect increased precipitation intensities from storm events of all durations and return periods in reference to the present day IDF-curve (ECCC 2023c; Table 5.6)

The 2071—2100 climate normal total precipitation was generated using the CanDCS-u6 26 models ensemble within the CMIP6 model ensemble. A GEV extreme precipitation block maxima and minima distribution curve is fitted to obtain the 50-year and 100-year return period annual total precipitation amounts for the wet and dry year, respectively, for each of the 26 models within the SSP2-4.5 CMIP6 ensemble. The monthly wet and dry return period quantities are based on relative percentages of annual precipitation for the 2071-2011 climate normal monthly amounts. The climate change adjusted wet year, dry year, and climate normal total precipitation monthly and annual amounts are provided in Table 5.9.

Table 5.9 Combined Timmins Climate Stations Wet Year, Dry Year, and CMIP6 2071-2100 SSP2-4.5 Climate Normal - Annual & Monthly Total Precipitation (mm)

Condition	Wet Year (mm)		Dry Year (mm)		2071-2100 Climate Normal (mm)
Return Period->	**50 year**	**100 year**	**50 year**	**100 year**	
January	86.96	91.09	35.83	30.19	71.33
February	68.07	71.31	28.05	23.63	55.84
March	80.08	83.89	32.99	27.80	65.69
April	74.28	77.81	30.60	25.79	60.93
May	92.56	96.97	38.14	32.13	75.93
June	102.90	107.80	42.40	35.72	84.41
July	103.41	108.33	42.61	35.90	84.83
August	95.44	99.98	39.32	33.13	78.29
September	113.94	119.35	46.94	39.55	93.46
October	98.60	103.29	40.62	34.23	80.88
November	106.52	111.59	43.89	36.98	87.38
December	92.13	96.51	37.96	31.98	75.57
Annual	**1114.90**	**1167.92**	**459.34**	**387.03**	**914.54**

Relative to the present period climate normal value of 801.8 mm, the projected total annual precipitation for the 2071-2100 under the SSP2-4.5 scenario is a relative percent increase of 14%. Relative to the climate normal wet year and dry year assessment presented in Table 5.4, the wet year and dry year monthly and annual return periods are extended respectively (drier results for dry years, and wetter results for wetter years) indicating that while the climate will become generally wetter, the climatic range will widen, storm intensity will increase with longer periods of inter-event dry periods..

The total precipitation amounts for the 2071-2100 climate normal, and wet and dry years were derived from total precipitation in the CMIP6 CanDCS-u6 26 models ensemble for the period of 2071-2100. The climate change adjusted wet year, dry year, and climate normal rainfall and snowfall monthly and annual amounts are provided in Appendix B.3 and Figure A.6, Appendix A.

5.2 Hydrology

5.2.1 Regional Hydrology

The regional hydrology assessment is based on the WSC stations listed in Table 4.2. The results of this assessment allow for the development of equations that relate catchment area to flow. These relationships can then be applied to the watersheds at the Project site to assist with characterizing local hydrology. Hydrological relationships are calculated for the mean annual flow, mean monthly flow, peak flows, and low flows, as presented in the following sub-sections. Environmental flows are estimated using the Tessman method at a monthly scale using a decision matrix of mean monthly and mean annual flows, as discussed in Section 5.2.1.6.

5.2.1.1 Homogeneity Tests

The first step in the regional assessment is to verify the hydrologic homogeneity of the group of stations presented in Table 4.2. A station should not be eliminated because it failed a single homogeneity test but can be eliminated if it fails multiple tests demonstrating more heterogeneity than homogeneity. The following describes the homogeneity tests performed and their results. Appendix B.4 presents the overall summary table including the results summary of the tests performed.

5.2.1.1.1 Vegetation and Land Cover

Land cover classes were extracted from OWIT for each of the eight WSC stations being considered. OWIT was also used to extract the land cover information for the each of the three local watersheds (Jocko Creek, North Driftwood, and West Buskegau watersheds). The major land cover types of the LSA watersheds are mixed treed (27.3%), coniferous treed (20.8%), bog (15.5%), sparse treed (11.4%), swamp (10.5%) and disturbance (8.1%).

Of the identified eight WSC stations, there was little difference in primary land cover. Stations were primarily covered by mixed treed cover, varying between 31% - 45% of the total cover. Increased disturbance land cover areas were noted in the Stations 04LC003 and 04LE002 watersheds, making up 16% and 20% of their land, respectively.

5.2.1.1.2 Percent Area of Waterbodies

Area of wetlands and lakes is another output from OWIT that was collected for each of the WSC station watersheds. Area of wetlands and lakes was also collected for the three Project site watersheds and combined to represent the total site watershed. Percent area of waterbodies was then calculated using the total drainage area and the percent difference between the WSC stations to the Project site was assessed.

The total Project site watershed is estimated to have waterbodies covering 25% of its area (MNRF 2023a). Three WSC stations had a percent area of waterbodies that fell outside of a ±15% range from the Project site, Station 04LK001 (64%), and Station 02JC008 (8%). The other stations had a percent area of lake and wetlands ranging between 12% and 19%.

5.2.1.1.3 Annual Precipitation

OWIT provides the estimated annual total precipitation of the WSC watersheds using the 1981 – 2010 climate normal period. The WSC station annual precipitation amounts were compared to 1981 to 2010 climate normal precipitation of Timmins VPA Station (834.6 mm) by assessing relative percent difference.

Station percent difference in annual precipitation varied form a range between -8% up to 4%. On average, the percent difference from selected WSC stations and the Project site 1991-2020 climate normal value was -1%.

5.2.1.1.4 Unit Flow

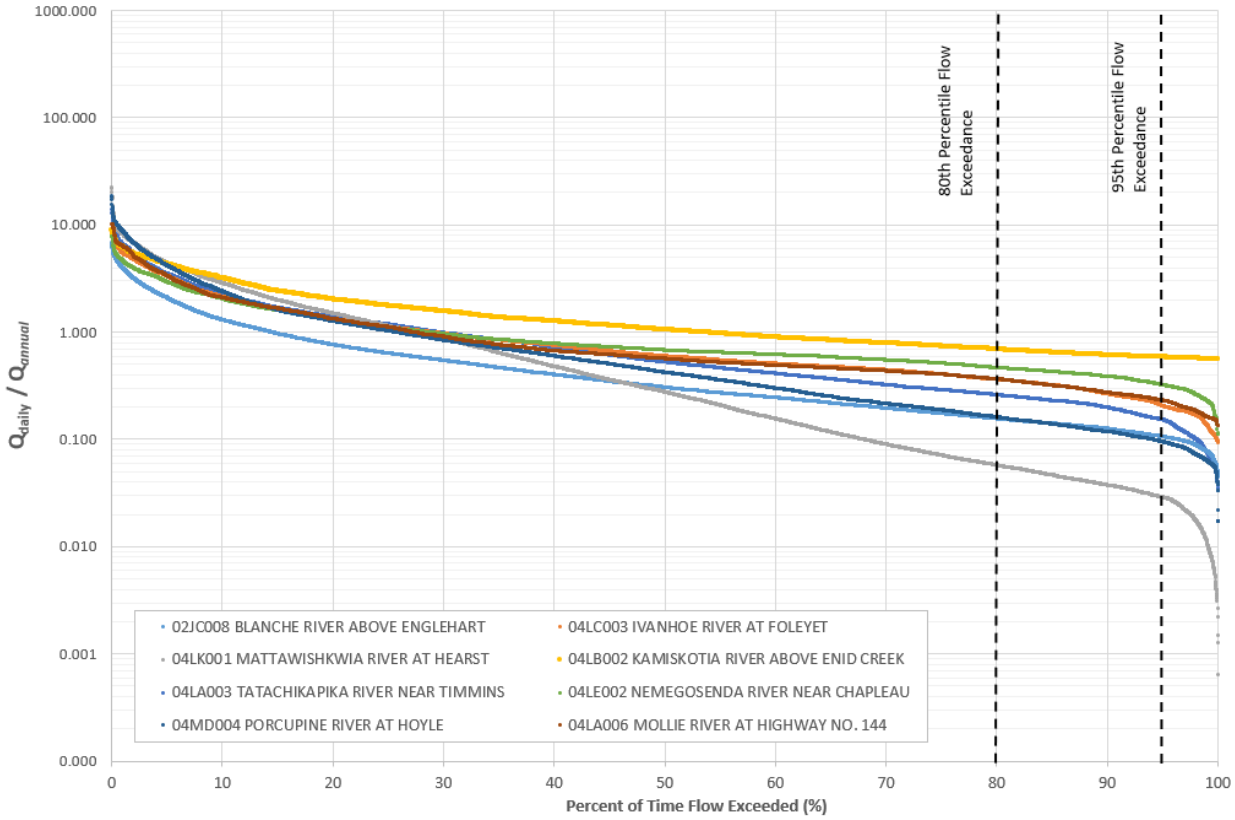
Unit flows were calculated for each WSC station by dividing the MAF by the associated catchment area to provide a unit of flow per square kilometre of catchment area. The unit flows for the WSC stations were averaged and their standard deviation was calculated. The average unit flow was 13.04 L/s/km^2 for the stations assessed, with a standard deviation of 3.62 L/s/km^2.

One station had a unit flow outside of one standard deviation from the average value, which was 02JC008 with a unit flow of 22.32 L/s/km^2. This station has the greatest drainage area (1780 km^2) and the least fraction of lakes and wetlands (8%) which likely contributes to the greater amount of surface runoff.

5.2.1.1.5 Flow Duration Curve

Flow duration curves for the WSC stations were developed following the methods described in Section 4.1.2 and the results are presented in Figure 5.3. The FDCs were normalized to present a range of flow duration exceedances and facilitate station to station comparison.

Figure 5.3 Regional Station Flow Duration Curves

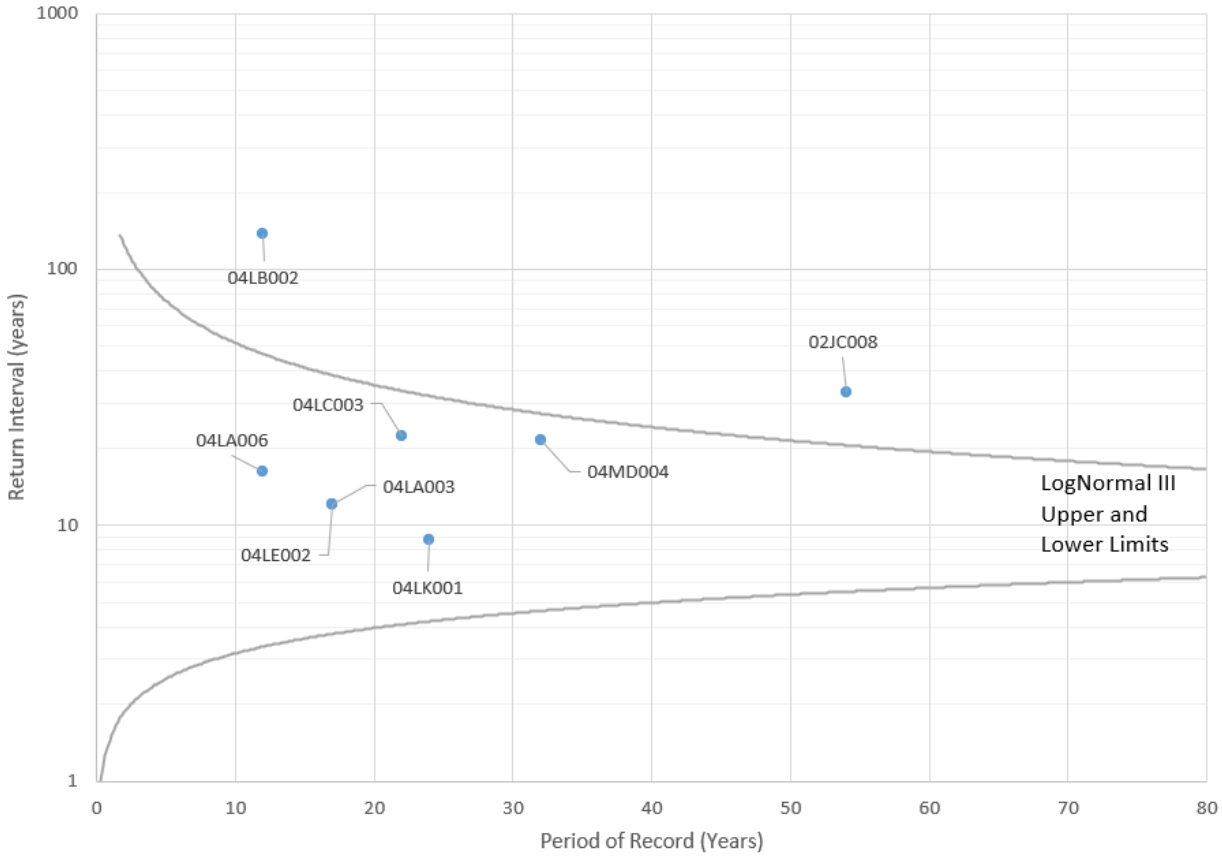


Stations 02JC008, 04LK001, and 04LB002 fell out of alignment with the other regional station's FDCs. Station 04LB002 has the shortest period of record (16 years) which may contribute to its variation. Station 02JC008 has the largest drainage area and the longest period of record (56 years). This station shows variation from most of the station curves in the first half of its curve, which implies fewer peaking flows through this station watershed. Lastly, Station 04LK001 deviates from much of the stations in the later have of its FDC curve. This would indicate much lower flows at this station watershed, or some variation in its dataset. This station has a 13-year gap in its 26-year record data set (1993 to 2006 is missing) which could affect its result. These variations imply that these stations have varying hydrological response behaviour to the others.

5.2.1.1.6 Index Flood

The results of the index flood test are presented in the Figure 5.4. Stations 04LB002 and 02JC008 are outside of the Log-Normal Type III 95% confidence interval.

Figure 5.4 Index Flow Test of the Regional Hydrology Stations



5.2.1.1.7 Regional Station Selection

As described in the homogeneity test results, a number of tests yielded moderate to minor differences among regional hydrometric stations such as with vegetation and land cover and annual precipitation. However, based on the results of the unit flow assessment, FDC curve assessment and index flow assessment, WSC stations 02JC008, 04LK001, and 04LB002 were removed from the regional dataset. The WSC stations used to proceed with the regional assessment are listed in Table 5.10.

Table 5.10 Regional WSC Stations Selected for the Regional Hydrology Assessment

Station ID	Station Name	Drainage Area (km^2)	Years of Record	Record Period	Site Proximity (km)	Climate Normal[1] Prec. (mm)
IVANHOE RIVER AT FOLEYET	04LC003	1640	20	2002- 2023	100 km SW	844
TATACHIKAPIKA RIVER NEAR TIMMINS	04LA003	872	23	2001-2023	52 km S	830
NEMEGOSENDA RIVER NEAR CHAPLEAU	04LE002	432	18	2006-2023	150 km SW	869
PORCUPINE RIVER AT HOYLE	04MD004	408	34	1977-1994; 2007-2022	37 km SE	836
MOLLIE RIVER AT HIGHWAY NO. 144	04LA006	92.5	17	2007-2023	150 km S	828

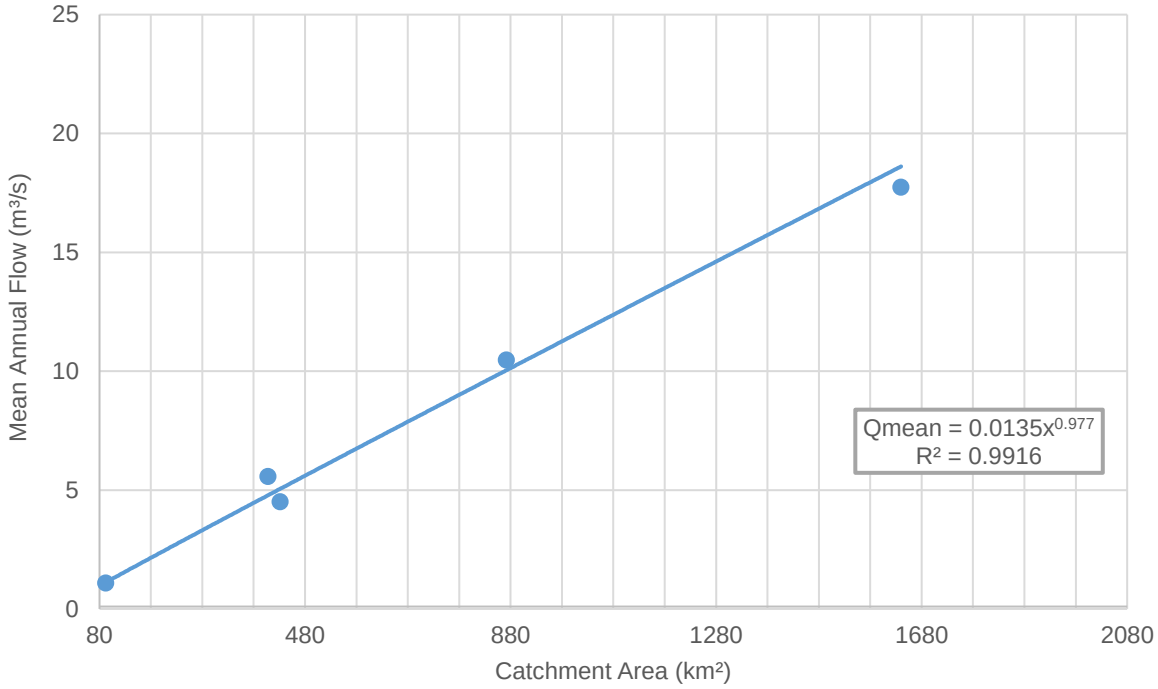
Note:
1 Annual precipitation data from OWIT (MNRF 2023a)

Stations 04LC003 and 04LE002 were flagged as having a greater proportion of disturbance land use type within their watershed (16% and 20% of their land, respectively) through the homogeneity testing. This difference was not enough evidence to support that they varied greatly from other stations as they were in alignment for all other remaining homogeneity tests. As explained in Section 4.1.2, stations are not eliminated because of a failure of a single test, but if it failed multiple tests demonstrating more heterogeneity than homogeneity. These two stations demonstrate a greater degree of homogeneity and are kept within the assessment.

5.2.1.2 Mean Annual Flow

The MAF for the selected five WSC stations were plotted against their catchment areas on a log-log graph (Figure 5.5). The log regression equation between MAFs and catchment areas that comes from this assessment can be applied to the LSA watersheds to estimate MAFs. The R^2 (0.99) between MAF values and catchment areas indicates a good relationship. The same assessment was performed for minimum and maximum annual flows. These graphs can be found within Appendix B.4.

Figure 5.5 Regional Station Relationship Between Mean Annual Flow and Catchment Area



These results are summarized in Table 5.11, including the determination of the runoff coefficient from each of the stations using the unit flows.

Table 5.11 Mean Annual Flow and Runoff Coefficient Summary

Station Name	Station ID	Drainage Area (km^2)	Mean Annual Flow (m^3/s)	Unit Flow ($m^3/s/km^2$)	Runoff Coefficient (-)
IVANHOE RIVER AT FOLEYET	04LC003	1640	17.7	0.011	0.40
TATACHIKAPIKA RIVER NEAR TIMMINS	04LA003	872	10.5	0.012	0.46
NEMEGOSENDA RIVER NEAR CHAPLEAU	04LE002	432	4.5	0.010	0.38
PORCUPINE RIVER AT HOYLE	04MD004	408	5.6	0.014	0.51
MOLLIE RIVER AT HIGHWAY NO. 144	04LA006	92.5	1.1	0.012	0.45

5.2.1.3 Mean Monthly Flows

The mean monthly flows for each of the five selected stations are presented in Figure 5.6. The minimum monthly flows and maximum monthly flow graphs are found in Appendix B.4.

Figure 5.6 Regional Station Mean Monthly Flows

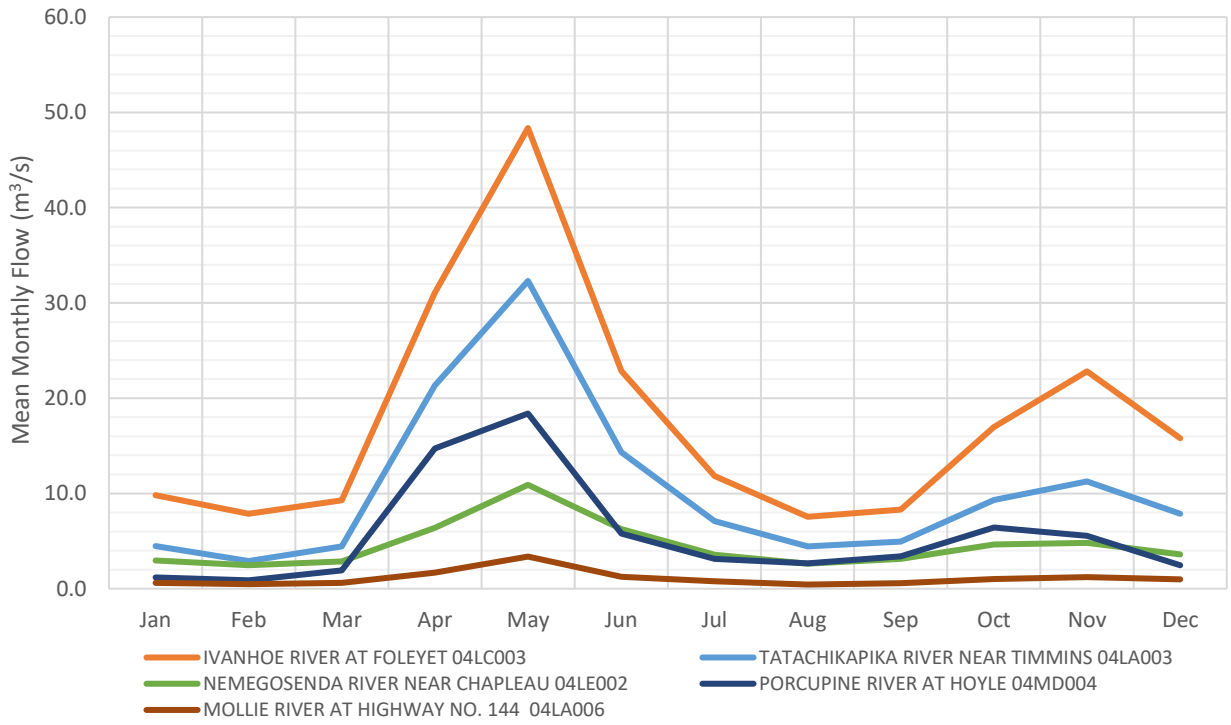


Figure 5.6 and Figure A.7 to A.9 in Appendix A help to characterize the behaviour of stream flow in each of the regional watersheds. Each of the figures describe two major peaks within any year. The first peak occurs in May due to spring freshet and the second in November due to fall rainfall. Typically, flows are reduced in winter months (January – February) and in late summer (July to September) (Figure 5.6). Flows are reduced in July – September despite elevated monthly precipitation amounts due to the water abstraction effects of evapotranspiration (ET) and increased infiltration capacity during that period.

On a log-log graph, the mean flows by station are plotted against their catchment area to elicit individual monthly regression relationships of flows. The R^2 of the relationships between each month's mean flow and catchment areas ranges between 0.90 and 1, with a mean of 0.97. Overall, this indicates a good fit of the regression to the regional stations. Appendix B.4 presents the relationships between mean monthly flows and catchment area, as well as the coefficient of determination results.

5.2.1.4 Baseflows

Baseflow separation was conducted for historical flows at the selected regional WSC stations using the Lyne and Holick Method using an alpha value of 0.999, described in Section 4.1.2. The results of baseflow separation for the regional stations are presented in Table 5.12.

Table 5.12 Regional Station Baseflow Separation Results[1]

Station ID	Drainage Area (km^2)	Period of Record	Winter	Spring	Summer	Fall	Annual Baseflow Ratio (BFI)	Baseflow Discharge Rate per Unit Area ($m^3/s/km^2$)
04LC003	1640	2001-2022	0.56	0.19	0.54	0.23	0.29	0.0032
04LA003	872	2005-2021	0.55	0.14	0.49	0.24	0.24	0.0037
04LE002	432	2006-2021	0.68	0.30	0.64	0.48	0.47	0.0054
04MD004	408	1977-2021	0.58	0.10	0.29	0.20	0.18	0.0024
04LA006	92.5	2008-2021	0.59	0.19	0.56	0.27	0.31	0.0029
Total Averages			**0.59**	**0.18**	**0.50**	**0.28**	**0.30**	**0.0035**

Note:
1 Proportion of total streamflow derived from baseflow

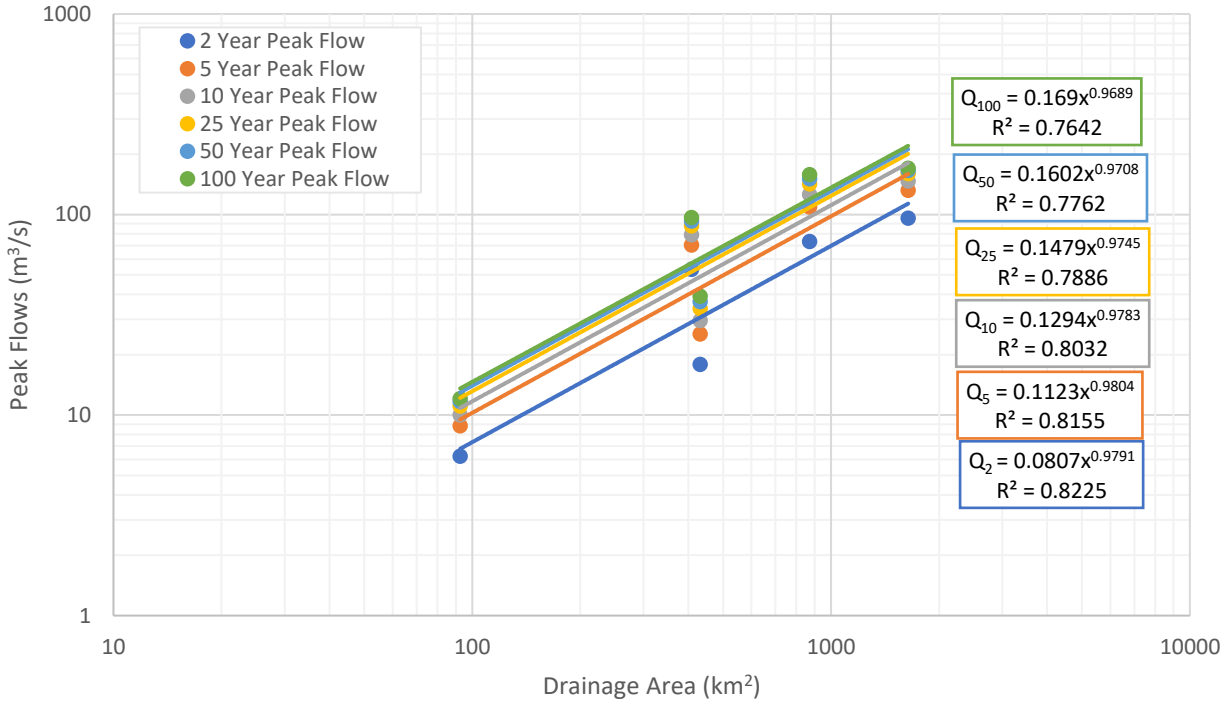
The BFI value describes the proportional contribution of baseflow primarily derived from groundwater discharge and watershed storage, such as lake and wetland storage and flow attenuation to total streamflow. In the winter, the BFI ratio is at its highest, which is expected during these months. In the spring and fall, the impacts of baseflow to streamflow are decreased due to greater amounts of runoff from precipitation and snowmelt events. On average, the annual BFI ratio is 0.30 which implies overall importance of groundwater discharge as well as lake and wetland attenuation to total streamflow. The regional average discharge per area of baseflow (0.0035 $m^3/s/km$) is used as an input for the hydrological model, described in Section 4.1.4.2.7.

5.2.1.5 Flood Flows

Flood frequency peak flows are computed for various return periods using the single highest flow event (in most cases instantaneous flow) from each year of record for each selected WSC station and then conducting a statistical assessment of these values. Probability distributions were compared first to determine which would best fit the data to define the design flows of various return periods. A single station frequency analysis method with a Log-Pearson Type III distribution was used to estimate 2, 5, 10, 100-year return periods was used in this study.

Figure 5.7 presents the relationships between peak flows and catchment areas for the examined return periods.

Figure 5.7 Regional Assessment Peak Flood Flows Regression

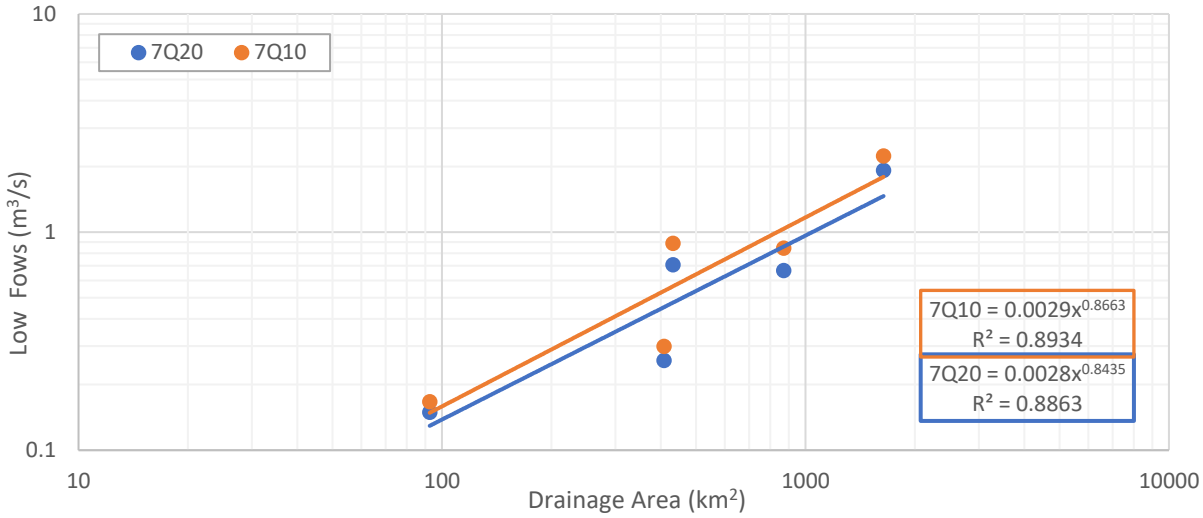


The R^2 values of the developed regression relationships between the peak flows and catchment areas ranges from 0.76 to 0.82, indicating a good level of confidence for each return period. The R^2 values tend to decrease as return periods increase, providing some indication that there is a trend of variance between each of the regional stations in terms of their recorded peak floods. This could be a result of varying record lengths and difference in local precipitation events.

5.2.1.6 Low and Environmental Flows

The 7Q10 (7-day average low flow with a 10-year return period) and 7Q20 (7-day average low flow with a 20-year return period) are indicators of extended low water conditions. The 7Q10 and 7Q20 low flows are plotted against catchment area, presented in Figure 5.8 for the selected regional WSC stations. Single low flow indices were derived using a regional frequency analysis for the selected WSC stations.

Figure 5.8 Regional Low Flows and Catchment Area Regression



A summary of the environmental flows determined through the Tessman Method (Section 4.1.2) is provided below in Table 5.13. Another important environmental flow threshold includes 10% of instantaneous or daily flows and 30% of the mean annual discharge as indicated in Section 4.1.2 (DFO 2013). The 30% of mean annual discharge is derived from the regression equation for mean annual flow in Section 5.2.1.2 and is presented in Table 5.14.

Table 5.13 Regional Station Environmental Flows Calculated Following the Tessman Method

	Environmental Flows (m^3/s)				
	04LC003	**04LA003**	**04LE002**	**04MD004**	**04LA006**
Drainage Area (km^2)	**1640**	**872**	**432**	**408**	**92.5**
January	7.10	4.19	1.80	2.16	0.44
February	6.08	3.35	1.73	1.64	0.41
March	7.10	4.19	1.80	2.22	0.44
April	14.7	7.64	3.70	3.49	0.76
May	20.8	11.5	5.89	5.58	1.37
June	9.87	5.15	2.50	2.35	0.51
July	7.10	4.19	1.80	2.22	0.44
August	7.10	4.19	1.80	2.17	0.44
September	7.10	4.19	1.80	2.22	0.44
October	7.27	4.19	2.01	2.22	0.45
November	8.64	4.56	2.24	2.22	0.47
December	7.10	4.19	1.80	2.22	0.44

Table 5.14 Summary of Project Site Mean Annual Flows and 30% of Mean Annual Flows

Watershed	Station	Drainage Area (km^2)	MAF (m^3/s)	30% MAF (m^3/s)
Jocko Creek	SW-8	92.5	1.13	0.338
North Driftwood	SW-2b	105.5	1.28	0.384
West Buskegau	SW-6b	199.0	2.38	0.714

5.2.2 Environmental Water Balance

An environmental water balance was created using the Thornthwaite Monthly Water Balance model developed by the USGS (2007), as described in Section 4.1.2.

The model was run for three input data scenarios: Climate normal (1991-2020), driest year (2012), and wettest year (1961). The model was run on a monthly time step using one year of monthly total precipitation and average temperature data from the applicable ECCC climate station for each scenario, following two years of climate normal data to act as the warm-up period for the model. Other model inputs, such as latitude and infiltration capacity, are presented in Table 5.15. Input values were based on local conditions, professional judgment and values suggested in McCabe and Wolock (1999), and USGS (2007).

Table 5.15 Environmental Water Balance Inputs

Input Parameters	Values
Runoff Factor	0.65
Direct Runoff Factor	0.05
Soil Moisture Storage Capacity (mm)	331
Latitude of Location (Degree)	49
Rain Temperature Threshold (Degree Celsius)	0.0
Snow Temperature Threshold (Degree Celsius)	0.0
Maximum Melt Rate	0.5

The infiltration factor was calculated following MOE procedures (2003) and used for the determination of groundwater recharge values. The infiltration factor Project Site area was calculated as 0.35 based on a topographical factor of 0.1 for land with a topographic slope of 1.7%, a soil factor of 0.1 for clay soils, and a cover factor for 0.15 representing a blend of woodland and cropland type covers, represented by wetland type vegetation. The runoff factor would then be 0.65, as presented in Table 5.15. The following tables summarize outputs form the Thornthwaite Monthly Water Balance model for all three climatic conditions (Table 5.16 to Table 5.18).

Table 5.16 Environmental Water Balance for the Climate Normal Period from 1991 to 2020

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Precipitation, mm	48.2	39.6	48.8	60.3	64.6	80.8	82.7	80.2	84.6	86.1	70.9	54.9	801.7
Actual ET, mm	3.7	5.2	11.7	27.8	61.7	94.5	107.1	80.8	45.1	21.7	9.4	4.7	473.4
Total Streamflow, mm	5.2	2.6	1.3	66.7	67.7	43.8	24.0	13.9	26.6	45.5	20.6	10.3	328.2
Storage Change, mm	39.3	31.8	35.8	-34.2	-64.8	-57.5	-48.4	-14.5	12.9	18.9	40.9	39.9	0.1
GW Recharge, mm	0.7	0.2	0.1	29.8	26.0	13.5	5.7	2.9	9.9	18.1	5.8	2.0	114.9
Overland Flow, mm	1.3	0.5	0.1	55.3	48.4	25.2	10.6	5.4	18.5	33.7	10.8	3.8	213.3

Table 5.17 Environmental Water Balance for the Wettest Year – 1961

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Precipitation, mm	20.9	95.7	65.9	37.2	103.4	100.5	147.7	156.1	168.9	45.7	106.3	81.4	1129.7
Actual ET, mm	3.1	5.8	12.4	29.0	50.6	81.6	106.7	77.7	48.5	22.6	10.1	4.6	452.7
Total Streamflow, mm	5.2	2.6	1.3	65.1	99.1	78.2	70.4	79.5	105.0	61.0	29.4	14.7	611.5
Storage Change, mm	15.8	89.2	53.3	-75.1	-61.9	-58.6	-26.1	-2.5	7.4	-29.3	78.6	70.7	61.5
GW Recharge, mm	0.7	0.2	0.1	29.2	40.1	27.1	23.5	28.3	39.6	18.3	6.2	2.1	215.4
Overland Flow, mm	1.3	0.5	0.1	54.1	74.6	50.4	43.6	52.6	73.5	34.1	11.4	4.0	400.1

Table 5.18 Environmental Water Balance for the Driest Year - 2010

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Precipitation, mm	13.0	20.2	9.8	29.6	37.2	58.7	80.6	48.6	122.8	32.2	43.9	24.8	521.4
Actual ET, mm	4.6	6.0	18.1	37.0	74.9	87.0	116.7	87.4	41.4	21.3	10.2	5.3	509.9
Total Streamflow, mm	2.0	0.7	0.2	22.8	11.1	6.2	5.2	2.8	9.4	8.8	2.5	0.9	72.6
Storage Change, mm	6.4	13.5	-8.5	-30.2	-48.8	-34.5	-41.3	-41.6	72.0	2.1	31.2	18.6	-61.1
GW Recharge, mm	0.7	0.2	0.1	8.0	3.9	2.2	1.8	1.0	3.3	3.1	0.9	0.3	25.4
Overland Flow, mm	1.3	0.5	0.1	14.8	7.2	4.0	3.4	1.8	6.1	5.7	1.6	0.6	47.2

Under the 1991 – 2020 climate normal period, actual evapotranspiration is modelled to account for 473.4 mm based on the monthly temperature and precipitation, soil storage, and land cover type. Statistics Canada (2017) estimated actual evapotranspiration rate for the Project site area is in the 400 mm to less than 500 mm range with a 1 km resolution dataset, which is comparable to the climate normal water balance result (Table 5.16). This provides independent verification for the modelled actual evapotranspiration amount.

The 1991- 2020 climate normal total stream flow estimate of 328.2 mm represents a streamflow (runoff) coefficient of 41%. The average regional gauging station value for the runoff coefficient is 44% (ranges from 38% to 51%), which is comparable to the environmental water balance result (Table 5.11). The 1991-2020 climate normal total groundwater recharge (infiltration) estimated for the project site is 114.9 mm/year, which is 35% of the total streamflow amount (Table 5.16). This is comparable to the determined baseflow index of 0.30 presented in Table 5.12.

5.2.3 Local Hydrology

5.2.3.1 Hydrometric Monitoring Results

Data collected by the local hydrometric monitoring program was utilized for the generation of station specific rating curves and hydrographs. These results provide a quantitative measure of the hydrological nature of the Project study area.

Following the end of the 2023 data collection period, station hydrometric summaries, rating curves, and hydrographs were compiled and are presented in Appendix B.2. Table 5.19 summarizes the results of the final rating curves developed for each station.

Table 5.19 Rating Curve Results Summary

Watershed	Station	Equation[1,3]	R^2	Data Points
Jocko Creek	SW-7	$X = 0.6227\ (Y)^{3.723}$	0.96	7
	SW-8	$X = 0.4051(Y)^{3.2593}$	0.90	7
North Driftwood	SW-1	N/A[2]	N/A	9
	SW-2b	$X = 1.7922\ (Y)^{2.428}$	0.99	7
	SW-3	N/A[2]	N/A	8
	SW-9	$X = 9.740\ (Y)^{8.201}$	0.92	4
West Buskegau	SW-4	$X = 0.420\ (Y)^{2.307}$	0.50	5
	SW-5	$X = 6.259\ (Y - 0.5)^{1.343}$	0.99	8
	SW-6b	$X = 5.937\ (Y - 0.6)^{1.110}$	0.98	7

Notes:
1 X = Discharge (m^3/s) and Y = Thalweg Depth (m)
2 SW-1 and SW-3 have no presented rating curve equation due to reduced data quality - no relationship found.
3 The Rating Curve equations are applicable to ice-free periods alone.

Within Table 5.19, the total number of data points used in the generation of the station specific rating curve may be less than those reported to have been collected, presented in Table 4.13, due to parsing of data used in the rating curve generation. Data points could be parsed for a number of reasons, including measurement under ice conditions which are not applicable for the generation of ice-free rating curves, presence of extreme outliers that may indicate a low- quality measurement result, or due to a high level of uncertainty in the data results due to field measurement errors or beaver dam effects. Thalweg depth, or maximum water depth, was used for the development of the rating curves as surface water elevation recordings had not been collected during each measurement. Using thalweg depth as the basis for the rating curves allowed for the inclusion of more of the available data points. Station specific rating curves and hydrographs are presented in Appendix B.2. Although coefficient of determination values of the rating curves are generally high, all stations require further field flow measurements at a wider range of flow depths to improve the statistical integrity of the stage-discharge relationships.

5.2.3.1.1 Jocko Creek

SW-7

SW-7 is one of the two stations located within the Jocko Creek watershed (Figure A.2, Appendix A). This station is located upstream of a large culvert crossing under Highway 655. This station has recorded in total seven flow measurements over the course of the study period, with one ice cover flow measurement point. The channel crossing is approximately 13.5 m wide and 3.03 m deep at bankfull. Directly downstream from the channel crossing, a box culvert bypassing Highway 655 exists and is 4.2 m wide (Appendix B.2). Upstream from the crossing, the channel is naturalized and surrounded by forest. The crossing itself has a rocky bottom with gravels and cobbles making up the channel bed. The stilling well with the Levelogger® was setup at the measuring cross-section.

SW-8

SW-8 is the second Jocko Creek watershed station and is located further downstream from SW-7 (Figure A.2, Appendix A). A total of six measurements were recorded from SW-8 (none during ice conditions). Downstream of the station exists a bridge passage, and the upstream condition of the channel is naturalized, straight, with forest cover on either of the banks. The channel bed is primarily comprised of soft soils with the Levelogger® setup at the cross-section for flow data collection. The channel is approximately 14.4 m wide and 2.81 m deep at bankfull.

The rating curve from SW-8 is the most downstream rating curve, and thus it is used to represent the Jocko Creek watershed (Figure 5.9). Bankfull depth has been reported to be at 2.81 m, therefore for flows extending beyond this depth contain some uncertainty. The hydrograph from this station is generated from the associated rating curve equation. An event specific hydrograph is presented in Figure 5.10. Uncertainty exists in the hydrograph above flows which have not been captured yet by field data measurements (above 10 m^3/s).

Figure 5.9 SW-8 Open Water Rating Curve - Jocko Creek

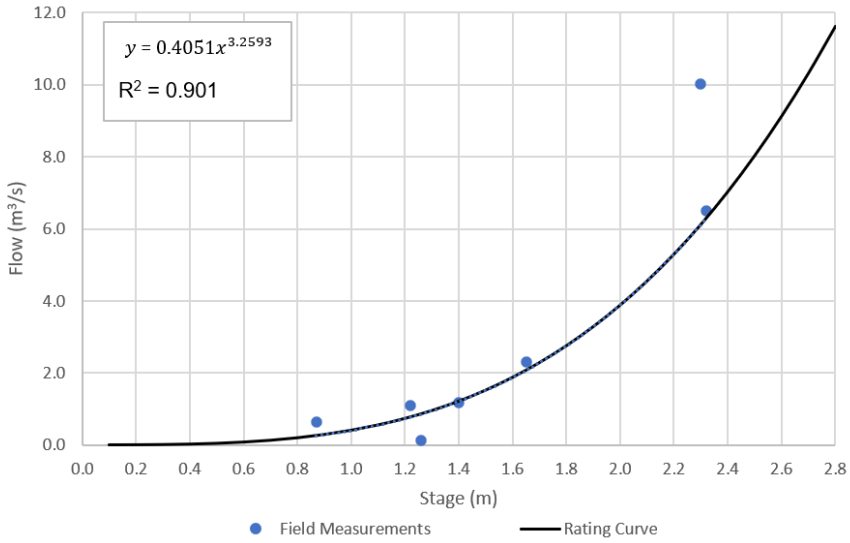
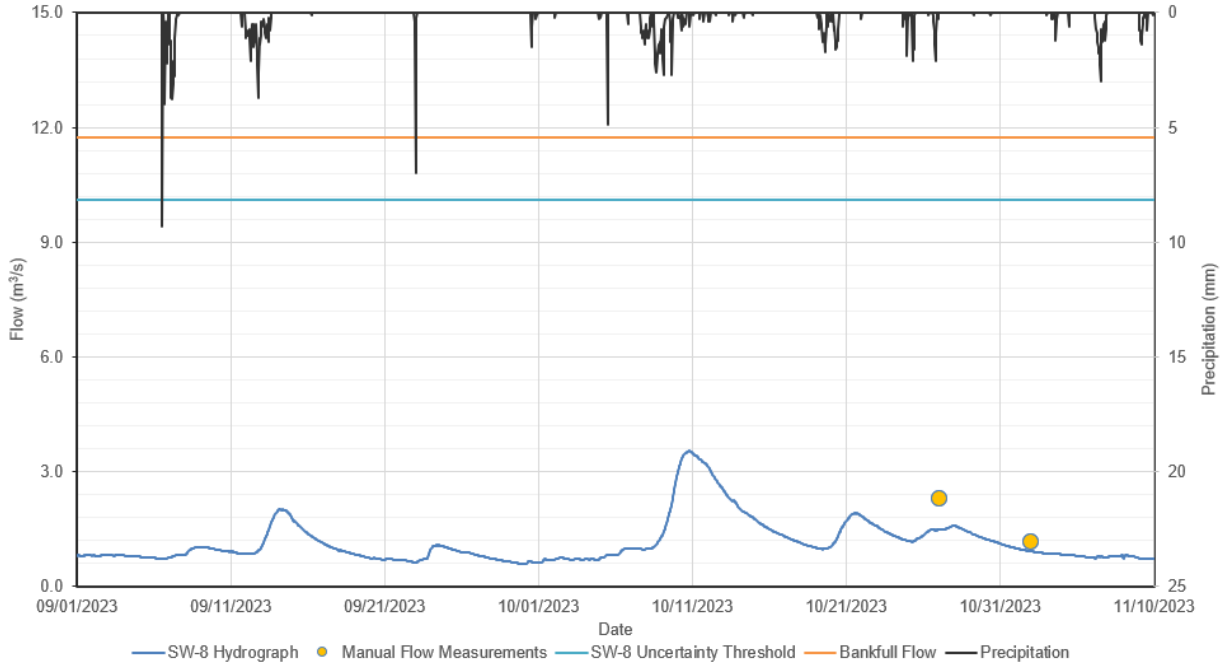


Figure 5.10 SW-8 Event Specific Hydrograph - Jocko Creek



The rising limb of the hydrograph reaches peak flow conditions within 36 to 70 hours following a precipitation event with a relatively steep rising limb. The falling limb of the hydrograph typically takes between 200 hours and 210 hours to return to baseflow conditions following a rainfall event.

5.2.3.1.2 North Driftwood

SW-1

SW-1 is hydrometric station located at a corrugated steel pipe (CSP) culvert on a tributary in the North Driftwood River watershed (Figure A.2, Appendix A). Upstream of the culvert, a large, ponded area surrounded by dense vegetation, grasses, and trees is found. Downstream of the culvert, the tributary confluences with the North Driftwood River, and the channel bed is gravelly with some soft bed material. Flow was monitored at the culvert outlet and the stilling well with Levelogger® was setup near the culvert inlet.

Throughout the course of the hydrometric study period, debris and mud were observed at the culvert inlet resulting in a periodic blockage of the culvert. Due to periodic flow constraint, a rating curve or culvert flow equation could not be developed to estimate continuous flows for ice-cover and ice-free conditions (Appendix B.2).

SW-2b

SW-2b is the most downstream station located on the North Driftwood River, located downriver from a bridge (Figure A.2, Appendix A). The stilling well with Levelogger® was setup at the upstream side of the bridge near the cross-section. The cross section is approximately 13.5 m wide, 1.62 m deep at bankfull, and has a channel bottom that is gravelly with cobbles.

The rating curve representing the North Driftwood watershed has reduced confidence when flows are greater than 2.5 m^3/s due to lack of field measurements above this discharge (Figure 5.11). The hydrograph from this station is generated from the related rating curve equation (Figure 5.12).

Figure 5.11 SW-2b Rating Curve - North Driftwood

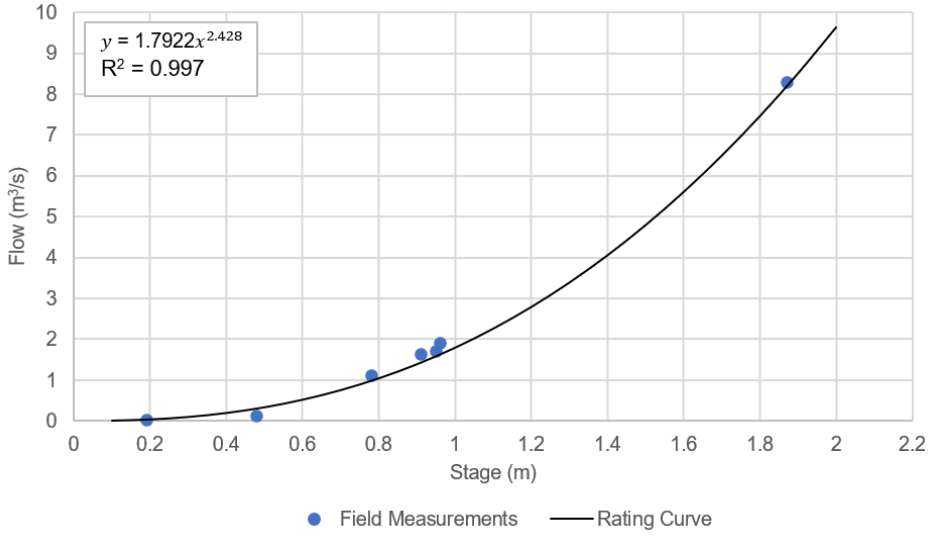
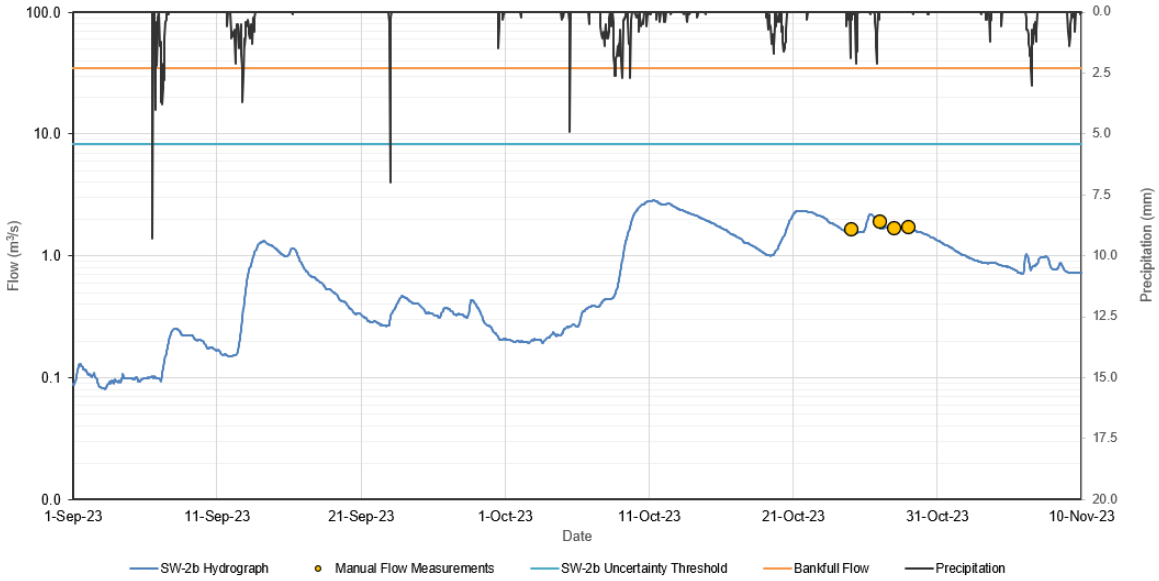


Figure 5.12 SW-2b Event Specific Hydrograph - North Driftwood



The rising limb of the hydrograph reaches peak flow conditions within 19 to 41 hours following a precipitation event with a relatively steep rising limb. The falling limb of the hydrograph typically takes between 170 hours to 211 hours to return to baseflow conditions following a rainfall event. This hydrograph is similar to that of the SW-8 hydrograph representing Jocko Creek. Lag time to peak flows from a rainfall event are somewhat quicker at SW-2b, but the length of the falling limb is rather similar (Figure 5.10 and Figure 5.12).

SW-3

SW-3 is station located within a wetland area of the site at the upstream end of the North Driftwood River watershed (Figure A.2, Appendix A). This station is often flooded, with very saturated soils making the channel bed unstable. The channel is approximately 4.75 m wide and has a bankfull depth of 0.78 m. Upstream and downstream from the cross section, the channel is braided, with dense grasses and vegetation at either of the banks. The stilling well with the Levelogger® was setup at the cross section of the flow measurement.

Beaver dam activity was observed to cause a backwatering effect through the 2021 to 2022 monitoring period. A rating curve relationship was not able to be generated for this station due to reduced confidence of field data (Appendix B.2).

SW-9

SW-9 is on the North Driftwood River and is located at the outlet of Martin Lake (Figure A.2, Appendix A). This station is a grouping of three culverts totalled together for flow measurements. Upstream from the culverts, the ponded tributary confluences with the North Driftwood River main channel. The stilling well with the Levelogger® was setup at the cross section of the flow measurement.

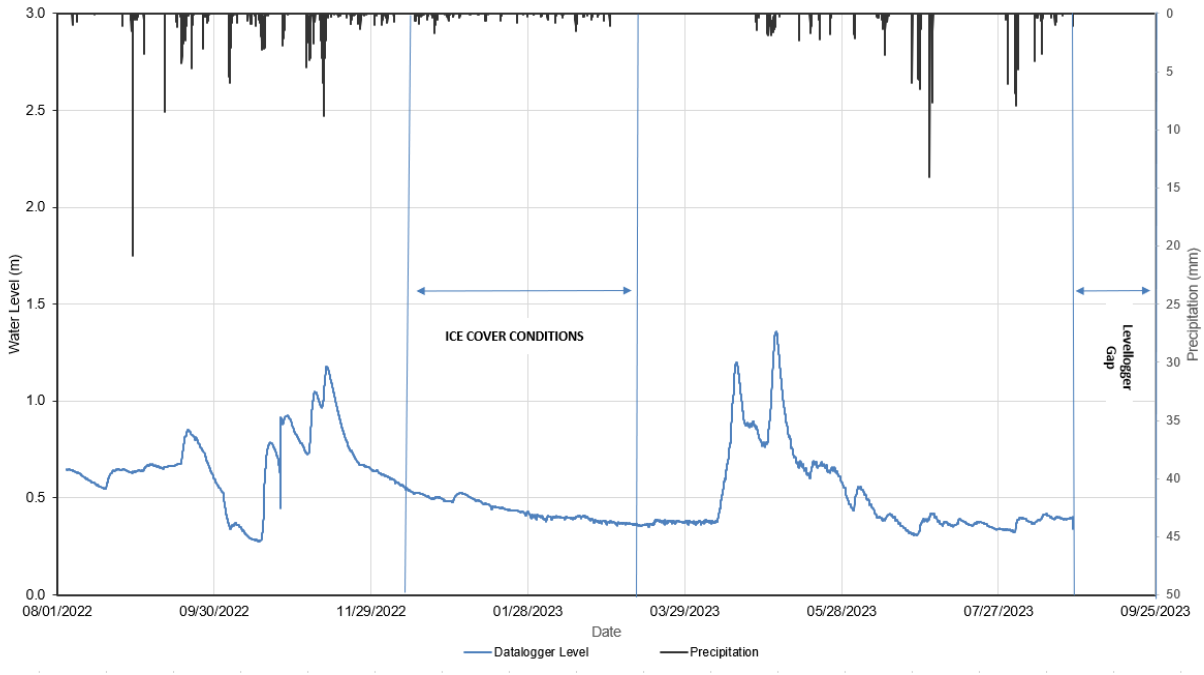
Beaver dams were blocking the culverts for the beginning period of the hydrometric monitoring study but were cleared in October 2022. Four of the gathered data points from 2023 were used for the generation of the rating curve due to reduced data confidence of data collected in 2022 (Appendix B.).

5.2.3.1.3 Lakes Monitoring

SW-10

SW-10 is a lake level monitoring station, monitoring the water level of Martin Lake, located within the North Driftwood River watershed (Appendix B.2). Continuous water level data was recorded at 30-minute intervals using the Levelogger® stilling well setup at the site. Using local barometric pressure data, daily water depths at the lake station were calculated. The continuous water level graph is provided in Figure 5.13.

Figure 5.13 SW-10 Martin Lake Continuous Level Graph

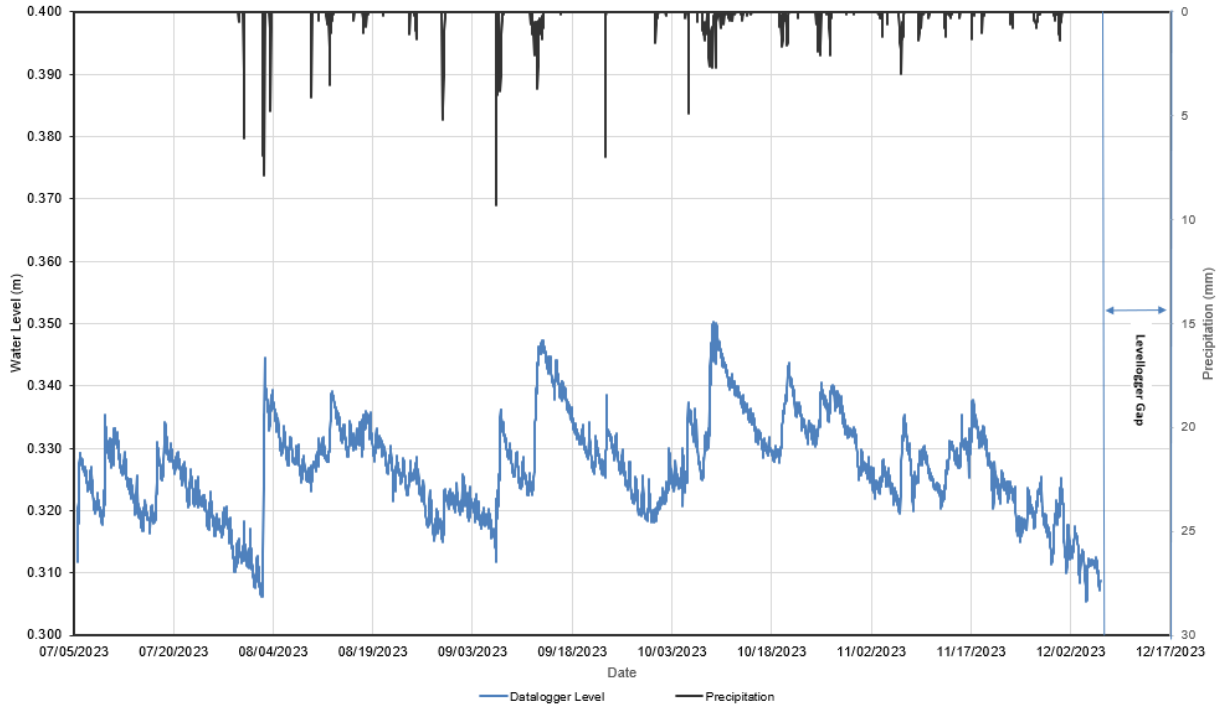


The existing record of lake level data at the Martin Lake Station covers over one year of data. Martin Lake has a mean depth of 3.4 m with a maximum depth of 11 m, identified by the bathymetric assessment provided in Section 5.2.3.3 with bathymetric mapping provided in Appendix A. Lake level has been recorded to fluctuate between a minimum of 0.28 m, recorded on October 17, 2022, and a maximum of 1.36 m occurring on May 3, 2023. Temperature and dissolved oxygen measurements lake profiling have been collected at Martin Lake and are presented in Section 5.3.2.1.1.

SuthLk

SuthLk is the lake level monitoring stations installed at Sutherland Lake, located within the North Driftwood River watershed (Appendix B.2). Continuous water level data was recorded at 30-minute intervals using the Levelogger® stilling well setup at the site. Using local barometric pressure data, daily water depths at the lake station were calculated. The continuous water level graph is provided in Figure 5.14.

Figure 5.14 Sutherland Lake Continuous Level Graph



The existing record of lake level data at the Sutherland Lake Station covers less than half a year of data at the end of 2023. Sutherland Lake has a mean depth of 4.1 m with a maximum depth of 22 m, identified by the bathymetric assessment provided in Section 5.2.3.3 with bathymetric mapping provided in Appendix A. Lake level has been recorded to fluctuate between a minimum of 0.305 m, recorded on December 4, 2023, and a maximum of 0.350 m occurring on October 9, 2023. Due to the minimal record available at Sutherland Lake, it is likely that the full range of typical water levels at this lake have not been captured. Temperature and dissolved oxygen measurements lake profiling have been collected at Sutherland Lake and are presented in Section 5.3.2.1.1.

5.2.3.1.4 West Buskegau

SW-4

SW-4 is one of the stations located within the West Buskegau watershed located along Prosser Creek (Figure A.2, Appendix A). Similar to SW-3, it is a station located within a wetland area of the site, with saturated soils creating an unstable channel bed. The channel itself is approximately 11.5 m wide 1.2 m deep at the crossing to bankfull. Both upstream and downstream ends of the channel are surrounded by dense vegetation, grasses, and forest cover. The stilling well with the Levelogger® was setup at the cross section of the flow measurement. A total of nine measurements were collected from SW-4, with one being under ice conditions. Hydrometric station summary sheet along with station hydrographs are provided in Appendix B.2.

SW-5

SW-5 is a station located towards the downstream end of the West Buskegau watershed (Figure A.2, Appendix A). The channel is straight with a soft soil material making up the channel bed. Both the upstream and downstream ends from the cross-section are surrounded by tree cover and vegetation. A cross section survey is yet to be completed to determine the bank full depth and channel width. The stilling well with the Levelogger® was setup at the cross section of the flow measurement along the right bank of the channel. This site has a total of 10 recorded flow measurements, one taken under ice conditions.

SW-6b

SW-6b is the most downstream station of the West Buskegau watershed (Figure A.2, Appendix A). It is located further downstream in the watershed than SW-5. The channel is straight with a soft soil material making up the channel bed. The channel is nearly 17.2 m wide and 1.81 m deep at bankfull. the upstream and downstream ends from the cross-section are surrounded by tree cover and vegetation. A total of nine measurements were collected at this site over the course of the hydrometric monitoring program, with only one ice cover measurement taken.

The SW-6b rating curve representing the West Buskegau watershed has reduced confidence for when flows are greater than 6.0 m^3/s (Figure 5.15). The hydrograph from this station is generated from the related rating curve equation (Figure 5.16).

Figure 5.15 SW-6b Rating Curve - West Buskegau

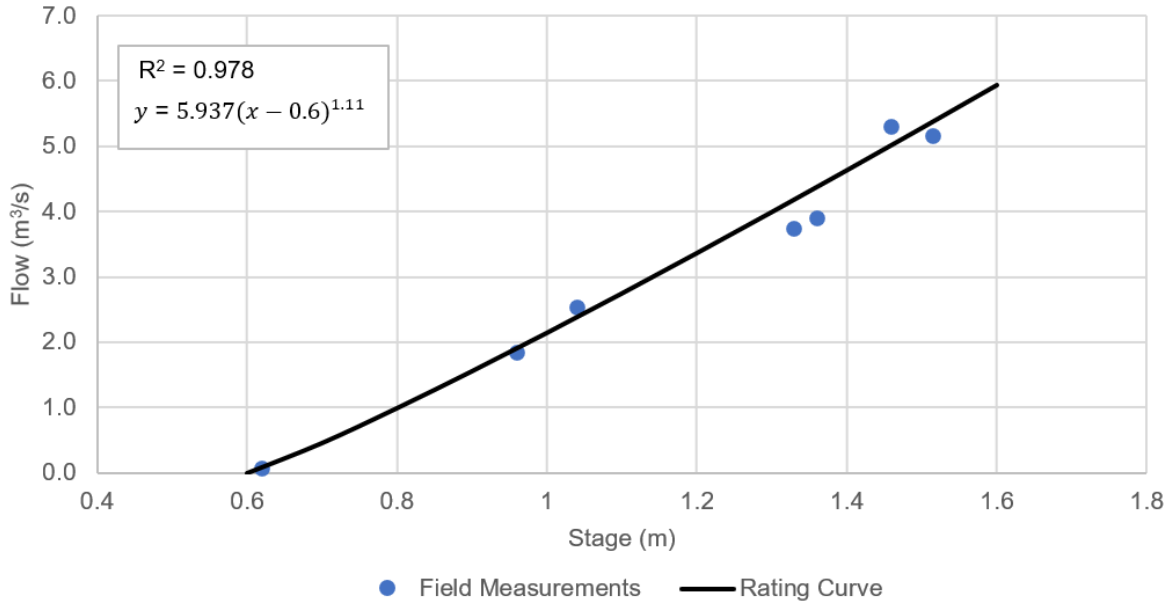
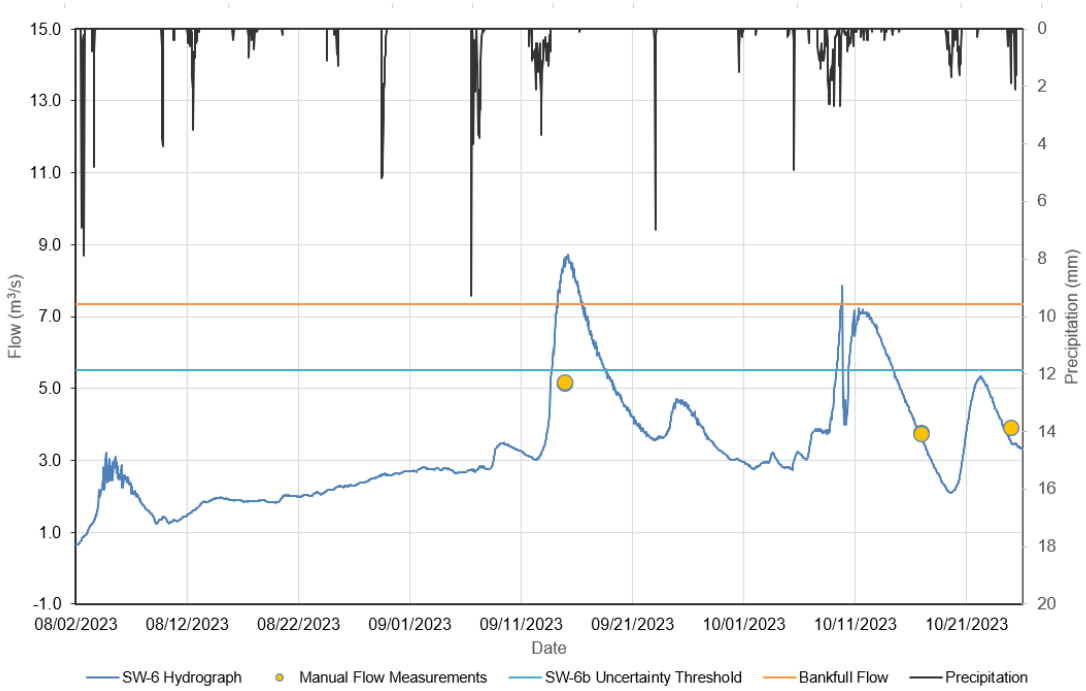


Figure 5.16 SW-6b Event Specific Hydrograph - West Buskegau



The rising limb of the hydrograph reaches peak flow conditions within 48 to 102 hours following a precipitation event with a relatively steep rising limb. The falling limb of the hydrograph typically takes between 189 hours to 200 hours to return to baseflow conditions following a rainfall event. This station has the longest time to peak following a rainfall event, with comparable falling limb times to the previously presented hydrographs (Figure 5.10 and Figure 5.12). The West Buskegau is the largest of the watersheds and SW-6b has the largest drainage area of the hydrometric monitoring stations (Table 4.13). The slope of the West Buskegau channel is the lowest of the three watersheds at 0.05% with North Driftwood at 0.08% and Jocko Creek at 0.11% according to OWIT (MNRF 2023a). The lower channel slope would contribute to the longer time to peak within the watershed.

5.2.3.2 Ice Cover

As part of hydrometric flow monitoring, manual measurements of watercourse ice thickness were taken. Table 5.20 presents the recorded ice thicknesses within the area of the Project.

Table 5.20 Ice Thickness Measurement Summary

Year	Watershed	Station	Date	Recorded Ice Thickness (m)
2022	North Driftwood	SW-3	2-Feb-22	0.33
	West Buskegau	SW-5	2-Feb-22	0.56
2023	Jocko Creek	SW-7	23-Feb-23	0.48
		SW-7	1-Mar-23	0.48
		SW-8	27-Feb-23	0.04
		SW-8	24-Mar-23	0.03
	North Driftwood	SW-1	23-Feb-23	0.51
		SW-2b	28-Feb-23	0.47
		SW-9	27-Feb-23	0.33
		SW-10	27-Feb-23	0.43
	West Buskegau	SW-6b	28-Feb-23	0.45

In general, ice thickness varies throughout the surface water quality stations. Stations recorded ice thicknesses ranging from 0.33 m to 0.56 m in February 2022 and 2023 and March 2023. Only station SW-8 has recorded minimal ice thickness of between 0.03 and 0.04 m at the Jocko Creek study watershed in February and March 2023, respectively. SW-8 is a station located across a stretch of the Jocko Creek directly downstream from a bridge, where flow is typically very deep (0.87 to 2.3 m on record). Ice depth may not have developed due to surface water turbulence caused by the upstream bridge.

Martin Lake (SW-10) has one recorded ice thickness recording from February 27th 2023. Ice depth was recorded to be 0.43 m during this site visit.

5.2.3.3 Bathymetry

A bathymetric assessment of specific site lakes was performed, with mapping provided in Figures A.10 to A.18, Appendix A. The results are presented in Table 5.21.

Table 5.21 Bathymetry Results of Select Study Area Lakes

Watershed	Name	0 m Elevation (masl)	Mean Depth (m)	Maximum Depth (m)	Surface Area (ha)
North Driftwood	Unnamed Lake – LG Stockpile West	270.19	2.5	11.0	5.02
	Martin Lake	268.29	3.4	11.0	19.98
	Gerry Lake	268.28	6.2	21.0	14.29
	Jack Lake	274.07	4.5	18.0	5.34
	Sutherland Lake	274.68	4.1	22.0	7.95
	Mel Lake	274.86	7.3	21.0	2.73
Jocko Creek	Zed Lake	282.53	4.0	13.0	4.56
	Unnamed Lake – South of Zed Lake	278.58	7.9	13.0	4.10

The bathymetry data are relative to normal fall water levels and are not tied to a benchmark. Additional bathymetry data is presented in the 2021-2023 Fish and Fish Habitat Baseline (Appendix B.8.2 of the Impact Statement) and the Fish and Fish Habitat Supplemental Baseline Report (Appendix B.8.1 of the Impact Statement)).

5.2.3.4 Local Hydrology Assessment

Local site subwatersheds are defined by the hydrometric monitoring station locations (Table 4.13) within each major watershed. Application of the equations determined through the regional assessment is executed in order to quantify annual flows, low flows, and flood flows. These results are presented in Table 5.22.

Table 5.22 Application of Regional Regression Relationships for Annual Flows, Low Flows, and Flood Flows to Local Sites

Watershed	Station	Drainage Area (km2)	Mean Annual Flow (m3/s)	Minimum Annual Flow (m3/s)	Maximum Annual Flow (m3/s)	Low Flow (m3/s)		Flood Flows (m3/s)	
						7Q10	7Q20	25-year	100-year
Jocko Creek	SW-7	72.3	0.88	0.46	1.28	0.12	0.10	9.59	10.70
	SW-8	92.5	1.13	0.58	1.63	0.15	0.13	12.19	13.58
North Driftwood	SW-1	7.2	0.09	0.06	0.14	0.02	0.01	1.01	1.14
	SW-2b	105.5	1.28	0.65	1.85	0.16	0.14	13.86	15.42

Watershed	Station	Drainage Area (km2)	Mean Annual Flow (m3/s)	Minimum Annual Flow (m3/s)	Maximum Annual Flow (m3/s)	Low Flow (m3/s)		Flood Flows (m3/s)	
						7Q10	7Q20	25-year	100-year
	SW-3	14.3	0.18	0.10	0.26	0.03	0.03	1.98	2.22
	SW-9	12.3	0.16	0.09	0.23	0.03	0.02	1.71	1.92
West Buskegau	SW-4	13.6	0.17	0.10	0.25	0.03	0.03	1.88	2.12
	SW-5	154.5	1.86	0.92	2.68	0.23	0.20	20.09	22.32
	SW-6b	199.0	2.38	1.17	3.43	0.28	0.24	25.72	28.53
Note: SW-8, SW-2b, and SW-6b are the most downstream stations of their respective watersheds									

Mean monthly regression relationships developed through the regional hydrology assessment and an environmental flows assessment using the Tessman Methods were applied to the subwatersheds of the site as defined by the monitoring stations. The mean monthly equations applied for the assessment are provided in Appendix B.4, Table B4.2. The results of the application of the Tessman methods and the mean monthly regression equations are provided in Appendix B.4, Table B4.2 and Table B4.3, respectively. This assessment confirmed that environmental flows are maintained at the site. Mean monthly flow values are greater than the environmental flow values for all local site stations at each month.

5.2.4 Hydrologic Model Results

Model calibration is performed to set up the model to match historical recorded flows. As described in Section 4.1.4.3, the Porcupine River HYDAT station was used to estimate flow at the most downstream outlet of each watershed using the DARM method. The determination of model parameters, presented under Section 4.1.4.2, were determined by the calibration process of the models, as described. The model calibration period covered data from January 1, 2008 to December 31, 2014. Through an iterative process of adjusting variables related to baseflow inputs, inputs related to losses, and snowmelt parameters, model calibration was completed. HEC-HMS has an internal model optimization function which allows for multiparameter optimization. Using multiparameter optimization, model input values are adjusted to better improve model results to fit the flows from the Porcupine River station.

Statistical parameters used to quantify the fit of the model to the prorated Porcupine Station flows include the Nash-Sutcliffe Efficiency (NSE), Root-Mean-Square-Error (RMSE), and the Coefficient of Determination (R^2). The R^2 value ranges from 0 to 1. A value of 0 indicates no correlation at all between the model and the prorated flows, whereas a value of 1 would indicate a perfect fit. The RMSE value describes the magnitude of variance between modelled results and the comparison data being used – a lower RMSE value means there is less deviation between model results and observed results.

The calibration model statistics of each of the three watershed models is provided from Table B1.5 to Table B1.6 within Appendix B.1. The following summarizes results of model calibration for each watershed:

- A review of calibration results for the Jocko Creek watershed indicates that the calibrated model is good with a R^2 of 0.66 and NSE of 0.64.
- A review of calibration results for the North Driftwood watershed indicates that the calibrated model is good with a R^2 of 0.54 and NSE of 0.52.
- A review of calibration results for the West Buskegau watershed indicates that the calibrated model is satisfactory with a R^2 of 0.60 and NSE of 0.46.

Overall, a review of the model statistics indicate that the calibrated models are acceptable and that the models reasonably represent local flows based on measured flow at the Porcupine River station. It is noted that as the watershed models become more complex or represent larger drainage areas, NSE values tend to decrease (Jocko Creek is the smallest and least complex, and West Buskegau is the largest [Figure 4.1 and Figure 4.3]). These changes in model statistics indicate some level variability between model results. Further improvement in statistical fit could come from use of local watershed-specific flow data to preform calibration once confidence in local station rating curves is improved. Hydrographs from each of the three models are shown in Figure 5.17 to Figure 5.19. Variances between the model and prorated flows could be attributed to differences in localized rainfall patterns between the Porcupine station watershed area generally east of Timmins, the meteorological station in Timmins and the PA north of Timmins. The following summarizes results of model calibration for each watershed:

- Within the Jocko Creek model, baseflows appear to be well represented, as are spring freshet volumes. In general, the model aligns with the flow response from the regional Porcupine station.
- Within the North Driftwood model, baseflows appear to be well represented. Spring freshet volumes tend to peak above the Porcupine prorated flows. In general, the model aligns with the flow response form the regional Porcupine station.
- Within the West Buskegau model, baseflows appear to be well represented. Spring freshet volumes tend to peak above the Porcupine prorated flows. In general, the model aligns with the flow response form the regional Porcupine station.
- Model validation will progress to align the model to LSA flows, as local watershed watercourse rating curve confidence develops.

Figure 5.17 Jocko Creek Model Calibration - January 1, 2008 to December 31, 2014

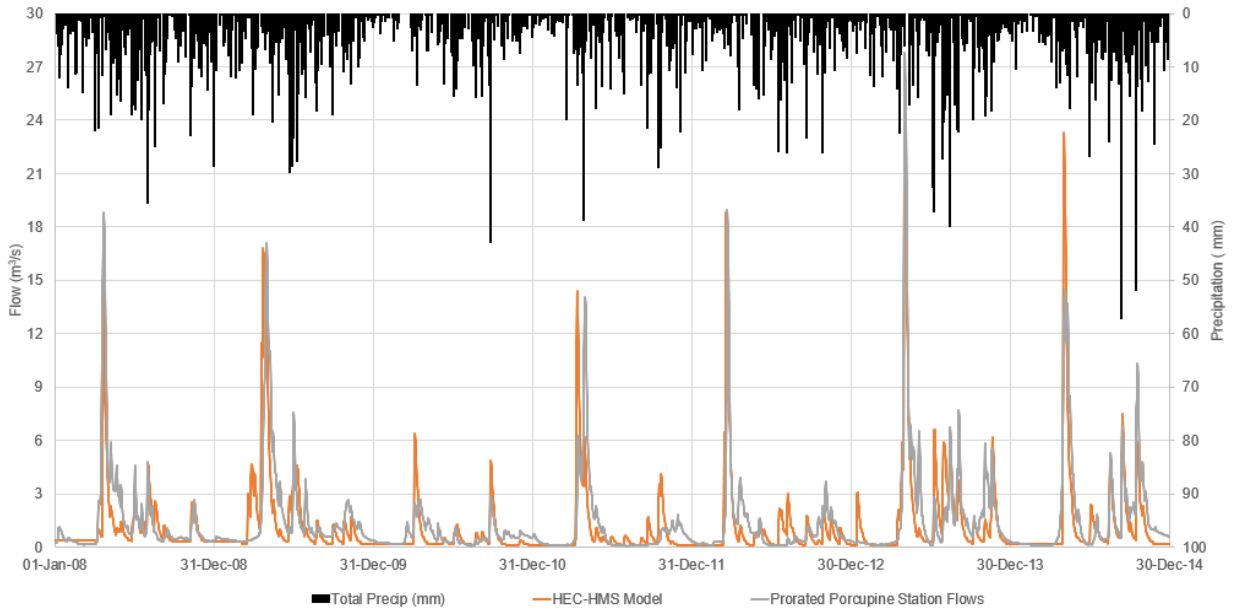


Figure 5.18 North Driftwood Model Calibration - January 1, 2008 to December 31, 2014

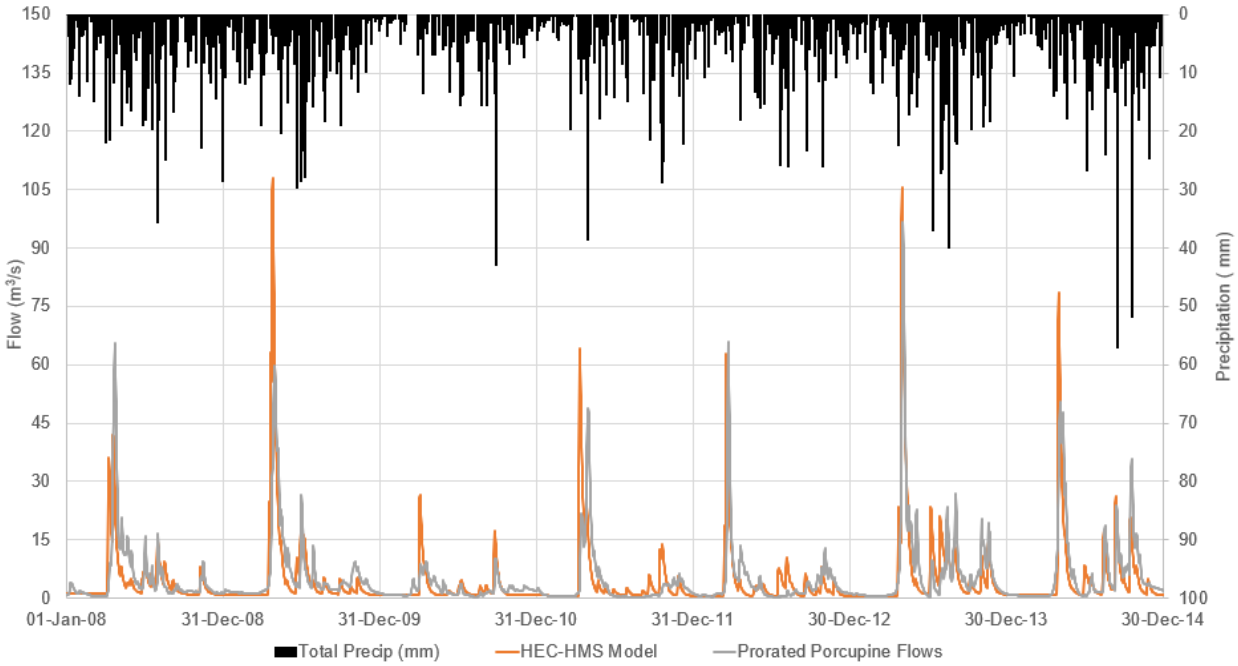
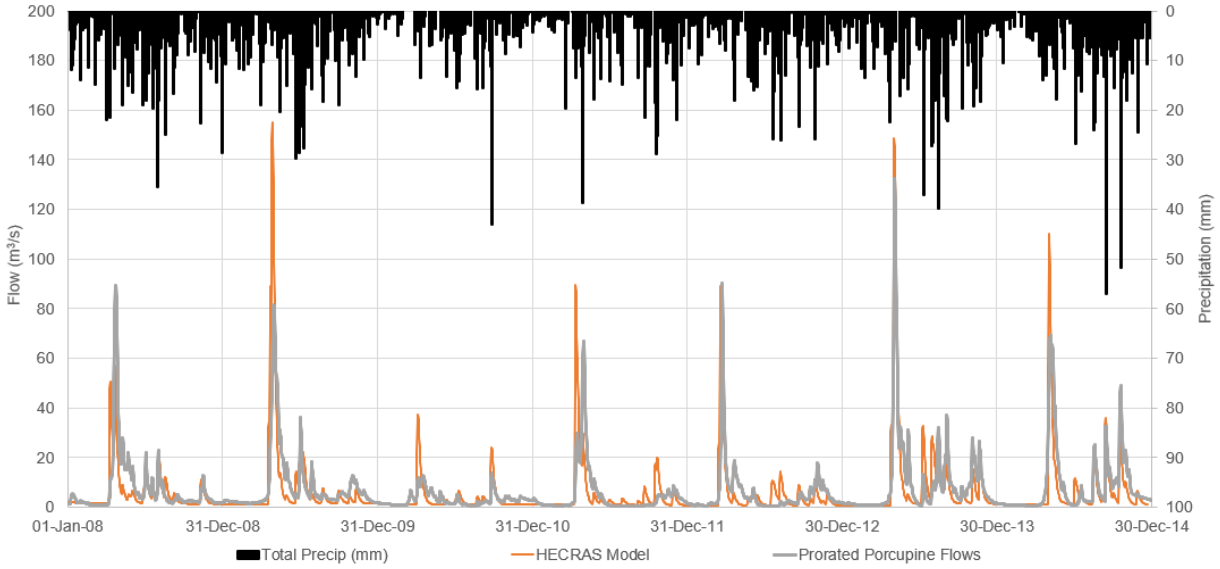


Figure 5.19 West Buskegau Model Calibration - January 1, 2008 to December 31, 2014



5.3 Water Quality

5.3.1 Regional Water Quality

Regional water quality data was obtained from seven monitoring stations in the Provincial Water Quality Monitoring Network (PWQMN) as discussed in Section 4.1.5. The seven watercourse monitoring stations were located within a 200 km radius of the Project Site, ranging from approximately 25 km to 193 km and located south and southeast of the Project Site. Appendix B.5 provides detailed analytical results for the sites assessed.

5.3.1.1 General Chemistry

Table 5.23 presents summary water quality statistics for the laboratory analytical general constituents. General chemistry field and laboratory analytical water quality results are presented in Appendix B.5.

In the regional watercourses, the lab pH results ranged from 1.20 to 9.16 with a 75th percentile value of 7.90 and a 25th percentile value of 7.35, indicating a circumneutral environment. There were 24 of 1143 samples where the lab pH was lower or higher than the CWQG-FAL and PWQO value range. No substantial seasonal differences for lab pH were observed. The field pH results ranged from 5.54 to 10.94 with a 75th percentile value of 7.49 and a 25th percentile value of 7.13, indicating a circumneutral environment. There were 31 of 295 samples where the field pH was lower or higher than the CWQG-FAL and PWQO criteria range. No substantial seasonal differences for field pH were observed.

Field measured dissolved oxygen results ranged from 0 mg/L to 22 mg/L with a 75th percentile of 10.00 mg/L and a 25th percentile of 6.5 mg/L with 6.5 mg/L being the CWQG-FAL lower range value for cold water fish species at other life stages. The 25th percentile dissolved oxygen value is below the CWQG-FAL cold water early life stages value of 9.5 mg/L. Dissolved oxygen was observed to be higher on average in October and November with no other substantial seasonal trends.

Total alkalinity (as $CaCO_3$) ranged from 7.4 mg/L to 296.8 mg/L with a 75th percentile of 108.0 mg/L and mean value of 78.5 mg/L. The relatively low alkalinity values indicate limited acid buffering potential. No substantial seasonal differences for alkalinity were observed.

Hardness (as $CaCO_3$) values ranged from 26 mg/L to 1500 mg/L with a 75th percentile of 308 mg/L. Hardness within the range of greater than 180 mg/L is considered very hard water (Health Canada 1979). Concentrations for copper, cadmium, lead, and nickel have hardness dependent CWQG-FAL criteria, with lower hardness values resulting in lower CWQG-FAL thresholds. Sulphate guidance is hardness dependent and is derived from the BC Water Quality Guidelines for the Protection of Freshwater Aquatic Life (BC MECCS 2023). Hardness was observed to slightly higher in the summer months than the rest of the year.

Total suspended solids (TSS) concentrations in the regional watercourse monitoring stations ranged from below the RDL (<1 mg/L) to a maximum of 22.5 mg/L with a 75th percentile of 8.4 mg/L and mean value of 5.6 mg/L.TSS varied throughout the year, with no notable seasonal trends.

Electrical conductivity ranged from 0 µS/cm to 2270 µS/cm with a 75th percentile of 660 µS/cm and mean value of 458 µS/cm. Higher conductivity values were observed during the winter and were lower in the spring through fall.

Chloride concentrations ranged from below the RDL (1 mg/L) to a maximum of 440 mg/L with a 75th percentile of 30 mg/L and mean of 21.5 mg/L. There were seven observed exceedances of the CWQG-FAL for chloride, with five measured at station 18771000602, located on Murdock Creek. Higher chloride concentrations were observed the during winter and were lower in the spring through fall, which aligns with the electrical conductivity results.

Sulphate concentrations ranged from 0.01 mg/L to a maximum of 1,430 mg/L with a 75th percentile of 190 mg/L and mean of 137.7 mg/L. With a 75th percentile hardness of 308 mg/L and mean of 191 mg/L, the BC WQG-FAL criteria of 429 mg/L applies. There were 40 exceedances out of 617 sampling events. Higher sulphate concentrations were observed the winter and lower in the spring through fall.

Where the 75th percentile (or 25th percentile value for pH and dissolved oxygen) of any parameter exceeds the PWQO or CWQG-FAL, it is identified as a PoPC. No PoPCs were identified for the general constituents of the PWQMN stations, although dissolved oxygen 25th percentile concentrations were below the CWQG-FAL guideline value for cold water early life stages (9.5 mg/L) and equal to the cold water other life stages minimum value (6.5 mg/L)

A 95th percentile parameter value was calculated to capture the upper range of natural variability within the regional dataset. In addition, the 5th percentile was used calculated to capture the lower value natural variability of pH and dissolved oxygen, which have lower limit CWQG-FAL and PWQO values. The 95th and 5th percentile results for field pH were 8.5 and 6.49, respectively, indicating slightly alkaline or acidic conditions can occur within regional watercourses and were predominantly within the PWQO value range (6.5 to 8.5). The field dissolved oxygen 5th value was below the cold water species CWQG-FAL lower range value. The sulphate 95th percentile values was observed to exceed its respective BC water quality guideline value.

Table 5.23 Summary of General Constituents in Regional Water Quality Monitoring Stations

	Parameters	Units	CCME CWQG-FAL		PWQO	Minimum	Maximum	Mean	75th Percentile (25th) [e]	95th Percentile (5th) [e]	Std. Dev.	# of Samples	# of Non-detects	# of Observed Exceedances
			Short-term	Long-term										
Watercourses	pH, Lab	S.U.	-	6.5 – 9	6.5 – 8.5	1.20	9.16	7.61	7.90 (7.35)	8.30 (6.9)	0.47	1143	0	24
	pH, Field	S.U.	-	6.5 – 9	6.5 – 8.5	5.54	10.94	7.49	7.79 (7.13)	8.50 (6.49)	0.63	295	0	31
	Chloride	mg/L	640	120	-	<1	440.0	21.5	30.0	54.0	30.4	963	1	7
	Conductivity, Lab	µS/cm	-	-	-	0	2,270	458	660	1,100	336	1226	0	N/A
	Dissolved Oxygen	mg/L	-	Narrative [b]	Table [d]	0.00	22.00	8.31	10.00 (6.5)	13.00 (3.0)	3.06	1162	0	382
	Hardness (as $CaCO_3$)	mg/L	-	-	-	26	1500	191	308	516	185	605	0	N/A
	Sulphate	mg/L	-	Table [c]	-	0.01	1,430.00	137.73	190.00	475.16	169.48	617	0	N/A
	Total Alkalinity (as $CaCO_3$)	mg/L	-	-	-	7.4	296.8	78.5	108.0	160.0	43.9	980	2	N/A
	Total Suspended Solids (TSS)	mg/L	-	Narrative [a]	-	<1	22.50	5.63	8.38	15.99	5.71	25	2	N/A

Notes:

N/A - not applicable

a TSS narrative “clear flow: Maximum increase of 25 mg/L from background levels for any short-term exposure (e.g., 24-h period). Maximum average increase of 5 mg/L from background levels for longer term exposures (e.g., inputs lasting between 24 h and 30 d).”

b DO Narrative = Lowest acceptable DO concentrations for the protection of freshwater organisms; 6 mg/L or greater for early life stages of warmwater species, 5.5 mg/L or greater for other life stages of warmwater species, 9.5 mg/L or greater for early life stages of coldwater species, and 6.5 mg/L or greater for other life stages of coldwater species

c Sulphate guideline value is from British Columbia Ministry of Environment and Climate Change Strategy for the protection of aquatic life (Guideline: 128 mg/L for hardness 0 to 30 mg CaCO3·L-1; 218 mg/L for hardness 31 to 75 mg CaCO3·L-1, 309 mg/L for hardness 76 to 180 mg CaCO3·L-1, 429 mg/L for hardness 181 to 250 mg CaCO3·L-1) (Meays and Nordin 2013)

d Dissolved oxygen: Consult PWQO table depending on cold water or warm water fish species present

e Field pH and dissolved oxygen have lowest acceptable range guideline values for CCME CWQG-FAL and PWQO

5.3.1.2 Nutrients

Table 5.24 presents a summary of the laboratory analytical nutrient results with complete analytical results provided in Appendix B.5.

Nitrate concentrations in watercourses ranged from below the RDL (0.005 mg N/L) to a maximum of 5.430 mg N/L with a 75th percentile of 0.400 mg N/L. There were no observed exceedances of the CWQG-FAL for nitrate in the regional watercourses. No substantial seasonality patterns for nitrate were observed.

Nitrite concentrations ranged from below the RDL (0.001 mg/L) to a maximum of 1.98 mg/L with a 75th percentile of 0.018 mg N/L. Exceedances of the CWQG-FAL were recorded in 32 of 790 samples with the 75th percentile value below the guideline. No substantial seasonality patterns for nitrite were observed.

Ammonium (NH_4^+) represents the ionized portion of total ammonia and is what was monitored by the PWQMN program. Un-ionized ammonia (NH_3) represents the more toxic form of ammonia (CCME 2010). Un-ionized ammonia is calculated from total ammonia using field pH and water temperature values. The CWQG-FAL has a guideline table for total ammonia and a guideline value for un-ionized ammonia. The PWQO has guideline value for un-ionized ammonia. As total ammonia or un-ionized ammonia results are not available for the PWQMN program the ammonium results cannot be assessed in comparison to CCME CWQG-FAL and PWQO values. Ammonium concentrations typically were higher in the winter months.

Dissolved organic carbon (DOC) ranged from a minimum of 3.6 mg/L to a maximum of 43.5 mg/L with a 75th percentile of 13.6 mg/L and mean value of 12.03 mg/L. No substantial seasonal differences of DOC were observed.

Total phosphorous (TP) concentrations ranged from below the RDL (0.002 mg/L) to a maximum of 13,281 mg/L with a 75th percentile of 0.110 mg/L and mean of 10.898 mg/L. Station 18771000602, located on Murdock Creek, had elevated TP concentrations that were an order of magnitude higher than other regional sites, including a suspect value of 13,281 mg/L, particularly for samples collected between 1972 to 1993. When excluding station 18771000602 (Murdock Creek), TP concentrations ranged from below the RDL to a maximum of 5.25 mg/L with both a 75th percentile and mean value of 0.070 mg/L. The PWQO value for TP is 0.030 mg/L for watercourses, with a total of 706 out of 1,067 samples (excluding 18771000602) exceeding the PWQO. The 75th percentile value exceeds the respective PWQO criteria for TP and is identified as a PoPC. A seasonal pattern was observed with TP peaking in January, then decreasing in the spring to a low annual value in May and increasing slightly during the summer and fall months.

A 95th percentile value was used to capture the range of natural variability within the regional dataset. For the nutrient parameters analyzed, there was substantial natural variability captured in the dataset, with the 95th percentile values being up six times greater in value than the 75th percentile values.

Table 5.24 Summary of Nutrients in Regional Water Quality Monitoring Stations

Surface Water Feature Type	Parameters	Units	CCME		PWQO	Minimum	Maximum	Mean	75th Percentile	95th Percentile	Std. Dev.	# of Samples	# of Non-detects	# of Observed Exceedances
			Short-term	Long-term										
Watercourses	Nitrate	mg/L	124	3	-	<0.005	5.430	0.453	0.400	2.488	0.828	1,247	68	0
	Nitrite	mg/L	-	0.06	-	<0.001	1.98	0.04	0.02	0.13	0.14	790	69	32
	Ammonium	mg/L	-	-	-	0.00	1,116.00	1.47	0.17	3.07	33.86	1,087	44	N/A
	Dissolved Organic Carbon	mg/L	-	-	-	3.60	43.50	12.03	13.60	25.57	6.43	274	0	N/A
	Phosphorus, Total	mg/L	-	Guidance Framework [a]	Guidance [b]	<0.002	13,281	10.898	0.110	0.643	377.914	1,235	29	872
	Phosphorus, Total (without Station 18771000602)					<0.002	5.25	0.070	0.070	0.220	0.187	1,067	29	706

Notes:

N/A - not applicable, T – total, D - dissolved

a TP narrative = Trigger Ranges for Total Phosphorus (mg/L) (see Guidance Framework for Phosphorus factsheet): ultra-oligotrophic <0.004, oligotrophic 0.004-0.01, mesotrophic 0.01-0.02, meso-eutrophic 0.02-0.035, eutrophic 0.035-0.1, hyper-eutrophic >0.1.

b Phosphorus, total (TP): To avoid nuisance concentrations of algae in lakes, average TP concentrations for the ice-free period should not exceed 0.02 mg/L, A high level of protection against aesthetic deterioration will be provided by a TP concentration for the ice-free period of 0.01 mg/L or less. This should apply to all lakes naturally below this value, and excessive plant growth in rivers and streams should be eliminated at a TP concentration below 0.03 mg/L

5.3.1.3 Metals and Metalloids

Table 5.25 presents a summary of the laboratory analytical metal and metalloid results with individual sample event analytical results for the seven PWQMN stations provided in Appendix B.5.

Total aluminum concentrations ranged from 0.6 µg/L to 6,100 µg/L with a 75th percentile of 270 µg/L and a mean value of 223 µg/L. The CWQG-FAL for total aluminum is 5 µg/L if pH < 6.5 and 100 µg/L if pH > 6.5. The total aluminum concentrations were recorded to exceed the CWQG-FAL value for 210 of 423 sampling events along with the 75th percentile value and it is identified as a regional PoPC. A seasonal pattern was observed with total aluminum peaking in January, then decreasing in the spring and summer and increasing slightly during the fall months. The PWQMN program did not analyze for dissolved aluminum.

Total arsenic concentrations had a 75th percentile value of 9 µg/L that exceeded the CWQG-FAL and PWQO values. A total of 49% (158) of the 317 detectable results had values that exceeded the guideline values. Arsenic is identified as a regional PoPC. Arsenic concentrations were typically higher in the summer compared the other seasons.

Total cadmium concentrations in watercourses ranged from below the RDL (0.02 µg/L) to a maximum of 8.0 µg/L with a 75th percentile of 0.75 µg/L and mean of 0.58 µg/L. Out of 406 sampling events, there were 192 observed exceedances of the PWQO and CWQG-FAL criteria. The 75th percentile of total cadmium exceeds both the PWQO of 0.2 µg/L and hardness dependent interim PWQO of 0.5 µg/L and is considered a PoPC. Cadmium concentrations were observed to be lower in the winter and spring and higher in the summer and fall with a peak in December.

Total cobalt concentrations ranged from below the RDL (0.5 µg/L) to a maximum of 176 µg/L with a 75th percentile of 4.9 µg/L and a mean value of 10.5 µg/L. There were 192 recorded exceedances of the interim PWQO limit of 0.9 µg/L over 404 sampling events and is therefore considered a PoPC. No substantial seasonal differences for cobalt concentrations were observed.

Total copper concentrations ranged from below the RDL (1 µg/L) to a maximum of 350 µg/L with a 75th percentile of 14.8 µg/L and mean value of 19.3 µg/L. The CWQG-FAL and interim PWQO for copper are based on hardness and criteria are calculated per sampling event where applicable. There were 624 recorded copper exceedances of 921 samples of the PWQO. The 75th percentile of total copper exceeds both the PWQO of 5 µg/L and hardness dependent interim PWQO of 5 µg/L and is considered a PoPC. Total copper concentrations were observed to be higher in the late fall and winter and lower in the spring through early fall.

Total iron concentrations ranged from below the RDL (1 µg/L) to a maximum of 7,500 µg/L with a 75th percentile value of 690 µg/L and a mean value of 541 µg/L. Out of the 998 samples collected, there were 511 exceedances of the CWQG-FAL and PWQO, approximately 51% of the samples. The 75th percentile value exceeds the CWQG-FAL and PWQO of 300 µg/L and it is identified as a PoPC. A seasonal pattern was observed with total iron peaking in March, then decreasing throughout the spring and summer to a typically low value in May and increasing slightly during fall months.

Total lead concentrations in the regional stations have a maximum of 220 µg/L. No statistics were calculated for the lab results due to too few above detection limit samples with approximately 75% of the samples (587 of 778) as non-detects. The RDLs varied substantially at the sites over the monitoring periods (e.g., maximum RDL 30 µg/L) with a number exceeding the CWQG-FAL and PWQO values based on sample event hardness. A total of 152 exceedances were identified for 191 observed values. Based on the variation of detection limits and number of analyzed lead exceedances it is considered a regional PoPC. Observed lead concentrations were typically higher in the winter months.

Total mercury concentrations in the regional stations had a maximum value of 0.09 µg/L. No statistics were calculated for the lab results due to too few above detection limit samples with approximately 95% of the 84 samples from all stations as non-detects. The four observed mercury values exceeded the CWQG-FAL value. Out of the 80 non-detect values, 21 had RDL values above the CWQG-FAL value ranging from 0.03 to 0.09 µg/L.

Total silver results had 96 of 134 samples as non-detect with 23 of the non-detects having detection limits that exceeded the CWQG-FAL and/or PWQO values. Of the observed silver concentrations, 34 of 36 had values that exceeded the PWQO value. Of the samples collected 42% had observed values or RDLs that exceeded the guideline value and silver is considered a regional PoPC.

Total zinc concentrations ranged from below the RDL (1 µg/L) to a maximum of 73,000 µg/L with a 75th percentile of 30 µg/L and a mean value of 111 µg/L. With the maximum outlier value removed, zinc concentrations have a mean value of 33 µg/L and maximum of 2,500 µg/L. Total zinc concentrations are compared to the PWQO lower limit of 20 µg/L, with 307 exceedances recorded out of 941 sampling events. Every PWQMN station had an exceedance zinc, except station 19006400302 on Porcupine River where only 9 samples were analyzed for total zinc. Total zinc is identified as a PoPC as the 75th percentile exceeds the PWQO. Concentrations of total zinc were higher in the winter months and lower in the spring through early fall.

Other total metals and metalloids monitored (beryllium, manganese, molybdenum, nickel, uranium, vanadium, zirconium) had detection limits that were below CWQG-FAL and PWQO values. Uranium was only monitored at four regional sites (19006400102,1900640042, 19006401420, 19006404502) and zirconium at three sites (1900640042, 19006401420, 19006404502). The number of exceedances of applicable guideline values for these parameters ranged from 0% (total beryllium, total vanadium) to 24% (total manganese).

A 95th percentile value is used to capture the range of natural variability within the regional dataset (Table 5.25). For the metal and metalloid parameters analyzed the 95th percentile values were typically three to four times greater than the mean and 75th percentile values.

The regional watercourse water quality results for the seven PWQMN monitoring sites identified typically circumneutral waters with well oxygenated waters that can support cold water species at other life stages.

Table 5.25 Summary of Metals and Metalloids in Regional Water Quality Monitoring Stations

	Parameters	Units	CCME		PWQO	Minimum	Maximum	Mean	75th Percentile	95th Percentile	Std. Dev.	# of Samples	# of Non-detects	# of Observed Exceedances
			Short-term	Long-term										
Watercourses	Total Aluminum	µg/L	-	Narrative [b]	-	0.6	6,100.0	222.9	269.5	684.5	418.9	423	5	210
	Total Arsenic	µg/L	-	5	5	<0.2	1,180	15	9	35	78	396	79	158
	Total Beryllium	µg/L	-	-	Table [g]	<0.1	0.329	0.026	0.027	0.088	0.041	273	95	0
	Total Cadmium	µg/L	Equation [c]	Equation [d]	Table [h]	<0.2	8.0	0.58	0.75	2.12	0.86	406	208	192
	Total Cobalt	µg/L	-	-	0.9	<0.5	176.0	10.5	4.9	62.4	26.6	404	145	192
	Total Copper	µg/L	-	Equation [e]	Table [i]	<1	350.0	14.8	19.3	45.3	25.3	921	106	624
	Total Iron	µg/L	-	300	300	<1	7500	541	690	1,500	692	998	9	511
	Total Lead	µg/L	-	Equation [f]	Narrative [j]	-	220	-	-	-	-	778	587	152
	Total Manganese	µg/L	-	-	-	9.5	1,300.0	74.8	82.5	218.2	115.3	359	0	85
	Total Mercury	µg/L	-	0.026	0.2	-	0.09	-	-	-	-	84	80	4
	Total Molybdenum	µg/L	-	73	40	<0.2	570.0	9.9	5.2	20.9	45.1	330	54	9
	Total Nickel	µg/L	-	Equation [a]	25	<2	230.0	14.2	20.0	49.8	17.9	889	345	83
	Total Silver	µg/L	-	0.25	0.1	-	6.40	-	-	-	-	134	96	36
	Total Uranium	µg/L	33	15	5	-	27.4	-	-	-	-	133	57	29
	Total Vanadium	µg/L	-	-	6	<0.5	4.23	0.79	1.04	2.66	0.78	273	53	0
	Total Zinc	µg/L	-	-	20	<1	73000.0	110.5	30.0	100.0	2380.1	747	113	283
	Total Zirconium	µg/L	-	-	4	<1	1.360	0.356	0.473	1.120	0.320	338	119	42

Notes:
NA - not applicable, T – total, D - dissolved

a Ni equation: Hardness ≤60 mg calcium carbonate (CaCO3)·L-1, CWQG-FAL is 0.025 mg/L, Hardness >60 to ≤180 mg CaCO3·L-1 use equation $e^{\{0.76[\ln(\text{hardness})]+1.06\}}$, Hardness >180 mg CaCO3·L-1, CWQG-FAL is 0.15 mg/L

b Al CWQG = 5 µg/L if pH <6.5, 100 µg/L if pH ≥6.5

c Cd short-term: 0.11 µg/L if hardness 0 to <5.3 mg CaCO3·L-1, $10^{\{1.016(\log[\text{hardness}]) - 1.71\}}$ if hardness ≥5.3 mg CaCO3·L-1 to ≤360 mg CaCO3·L-1, 7.7 µg/L if hardness >360 mg CaCO3·L-1

d Cd long-term: 0.04 µg/L if hardness 0 to <17 mg CaCO3·L-1, $10^{\{0.83(\log[\text{hardness}]) - 2.46\}}$ if hardness ≥17 to ≤280 mg CaCO3·L-1, 0.37 µg/L if hardness >280 mg CaCO3·L-1

g Mn (dissolved) short-term: benchmark calculator in Appendix B of Scientific Criteria Document for the Development of the Canadian Water Quality Guidelines for the Protection of Aquatic Life: Manganese

h Mn (dissolved) long-term: CWQG calculator in Appendix B of the Scientific Criteria Document for the Development of the Canadian Water Quality Guidelines for the Protection of Aquatic Life: Manganese.

e Cu long-term: 2 µg/L if hardness 0 to <82 mg CaCO3·L-1, $0.2*e^{\{0.8545[\ln(\text{hardness})]-1.465\}}$ if hardness ≥82 to ≤180 mg CaCO3·L-1, 4 µg/L if hardness >180 mg CaCO3·L-1

f Pb long-term: 1 µg/L if hardness 0 to <60 mg CaCO3·L-1, $e^{\{1.273[\ln(\text{hardness})]-4.705\}}$ if hardness ≥60 to ≤180 mg CaCO3·L-1, 7 µg/L if hardness >180 mg CaCO3·L-1

g Beryllium: 0.011 mg/L if hardness is <75 mg CaCO3 L^{-1}, 1.1 mg/L if hardness >75 mg CaCO3 L^{-1}

h Cadmium: 0.0001 mg/L if hardness is 0 to 100 mg CaCO3 L^{-1}, 0.0005 if hardness is >100 mg CaCO3 L^{-1}

i Copper: 0.001 mg/L if hardness is 0 to 20 mg CaCO3 L^{-1}, 0.005 mg/L if hardness is .20 mg CaCO3 L^{-1}

j Lead: 0.001 mg/L if hardness is <30 mg CaCO3 L^{-1}, 0.003 mg/L if hardness is 30 to 80 mg CaCO3 L^{-1}, 0.005 mg/L if hardness is > 80 mg CaCO3 L^{-1}

Regional water quality is classified as very hard with low alkalinity indicating limited acid buffering potential. No general chemistry parameter 75th percentile values (or 25th percentile values for pH and dissolved oxygen) exceeding or outside of CWQG-FAL and PWQO value ranges. Nitrogen compounds (nitrate and nitrite) were typically below CWQG-FAL values. Total phosphorus was identified as a PoPC exceeding the PWQO value for rivers (0.03 mg/L) with higher values in winter months. Total aluminum, arsenic, cadmium, cobalt, copper, iron, lead, silver, and zinc were identified as PoPCs. Metal and metalloid concentrations were typically higher during the winter months or did not observe seasonal trends.

5.3.2 Local Water Quality

To facilitate data analysis and discussion, results are assessed by grouping monitoring stations located in waterbodies and watercourses, outlined in Section 4.2.2. Appendix B.6 provides detailed analytical results for all sites. From 2021 to 2023, a total of 33 watercourse locations and 13 waterbody locations were sampled across three main watersheds, Jocko Creek (nine sites), North Driftwood River (22 sites), and West Buskegau River watersheds (15 sites) (Figure 7-5). Monitoring locations were aggregated by both type (watercourses and waterbodies), and by watershed to assess water quality relationships of water feature type, watershed, and seasonality.

Appendix C presents the Laboratory Certificates of Analysis for the surface water quality samples.

5.3.2.1 General Chemistry

Table 5.26 presents summary water quality statistics for the laboratory analytical general constituents. General chemistry field and laboratory analytical water quality results are presented in Appendix B.6. Seasonal analysis results are provided in Appendix B.8. Watershed analysis results are presented in Appendix B.9.

The field pH results ranged from 2.79 to 7.90 with a 75th percentile value of 6.71 and 25th percentile value of 5.14 in watercourses. Field pH ranged from 4.09 to 8.05 with a 75th percentile of 7.34 and 25th percentile value of 5.61 in waterbodies, indicating slightly acidic conditions in both types of surface water features. Field pH results were observed below the lower limit of both the CWQG-FAL and PWQO pH 6.5 value in 115 of 183 samples and for the 25th percentile value. A seasonal trend was observed in both watercourses and waterbodies with lower pH values in the summer months (July to September) and higher pH values in the winter months (January to March). Jocko Creek, North Driftwood River and West Buskegau River watersheds had similar pH levels, with a 25th percentile of 5.15, 5.73, and 5.02, respectively (Appendix B.9).

Field dissolved oxygen ranged from 0.09 mg/L to 19.73 mg/L with a 75th percentile of 9.37 mg/L and 25th percentile value of 5.65 mg/L in watercourses. In waterbodies, field dissolved oxygen ranged from 3.34 mg/L to 17.89 mg/L with a 75th percentile of 9.29 mg/L and 25th percentile value of 6.59 mg/L. The 25th percentile values are above the PWQO for cold water species of 5 mg/L and watercourses below the CWQG-FAL values for cold water species other life stages. Field dissolved oxygen was observed to be higher in the winter and early spring and lower in the late spring through fall for watercourses and

waterbodies. The 25th percentile of field dissolved oxygen was 6.38 mg/L in Jocko Creek watershed, 5.4 mg/L in North Driftwood River watershed, and 6.02 mg/L in West Buskegau River watershed.

Total alkalinity (as $CaCO_3$) ranged from below the RDL (1 mg/L) to 134 mg/L with a 75th percentile of 50.8 mg/L and mean value of 34.6 mg/L in watercourses. The total alkalinity in waterbodies ranged from 4.6 mg/L to 268 mg/L with a 75th percentile of 118 mg/L and a mean value of 79.1 mg/L. The relatively low alkalinity values in watercourses and waterbodies indicate limited acid buffering potential. Jocko Creek and West Buskegau River watersheds had similar alkalinity, with a 75th percentile of 52 mg/L and 50 mg/L, respectively. The North Driftwood River watershed had a higher alkalinity, with a 75th percentile of 82 mg/L. No substantial seasonal trends for total alkalinity were observed for the watercourse or waterbody monitoring locations.

Hardness (as $CaCO_3$) values ranged from 6 mg/L to 189 mg/L with a mean value of 43 mg/L and 75th percentile concentration of 55 mg/L in watercourses. In waterbodies, the hardness ranged from 11.3 mg/L to 233 mg/L with a mean value of 77 mg/L and 75th percentile concentration 110 mg/L. Hardness within the range of 60 to less than 120 mg/L is considered medium hardness (CCME 1979). Concentrations for copper, cadmium, lead, and nickel have hardness dependent CWQG-FAL criteria, with lower hardness values resulting in lower CWQG-FAL thresholds. Sulphate guidance is hardness dependent and is derived from the BC Water Quality Guidelines for the Protection of Freshwater Aquatic Life (BC MECCS 2023). Jocko Creek and West Buskegau River watersheds had similar hardness values, with a 75th percentile of 53 mg/L and 54 mg/L, respectively, which are within the soft water categorization. The North Driftwood River watershed had a higher hardness, with a 75th percentile of 81 mg/L. No substantial seasonal trends for total hardness were observed for the watercourse or waterbody monitoring locations.

Total suspended solids (TSS) concentrations in watercourse monitoring stations ranged from below the RDL (0.67 mg/L) to 80 mg/L with a mean value of 6.6 mg/L and 75th percentile concentration of 7.7 mg/L. TSS in waterbodies ranged from below the RDL (0.67 mg/L) to 27.3 mg/L with 41 of 75 samples below the RDL and therefore no statistics were calculated. In Jocko Creek watershed, TSS concentrations had a 75th percentile value of 6.4 mg/L. The North Driftwood River watershed had a 75th percentile value of 5.7 mg/L and the West Buskegau River watershed had the highest 75th percentile of the three watersheds with a value of 7.7 mg/L. TSS was observed to be slightly higher in the winter months in watercourses and in the late fall for waterbodies.

Field specific conductivity results in watercourses from 0.017 mS/cm to 0.602 mS/cm with a mean value of 0.088 mS/cm. In waterbodies, the field specific conductivity ranged from 0.016 mS/cm to 0.780 mS/cm with a mean value of 0.140 mS/cm. Field dissolved oxygen was observed to be higher in the winter months and lower in the spring through fall for watercourses and waterbodies, with a stronger seasonal trend observed in watercourse monitoring locations. Jocko Creek and North Driftwood River watersheds had similar field specific conductivities with a 75th percentile of 0.12 mS/cm and 0.13 mS/cm, respectively. The West Buskegau River watershed had a slightly lower overall specific conductivity, with a 75th percentile of 0.09 mS/cm.

Chloride concentrations in watercourses ranged from below the RDL (0.2 mg/L) to a maximum of 56.9 mg/L with a 75th percentile value of 3.1 m/L. In waterbodies, chloride concentrations ranged from below the detection limit (0.2 mg/L) with a maximum value of 1.1 mg/L. No statistics were calculated for the waterbodies due to too few above RDL results. Above 75th percentile chloride concentrations were observed at JC-S-01 in February and March 2023. Located 200 m west of highway 655, the temporary elevated chloride concentrations at the monitoring location may be influenced by seasonal road salting. There were no observed exceedances of the CWQG-FAL for chloride in either the monitored watercourses or waterbodies. Jocko Creek and North Driftwood River watersheds had similar chloride values, with a 75th percentile of 4.6 mg/L and 4.2 mg/L, respectively. The West Buskegau River watershed had notably lower chloride concentrations, with a 75th percentile of 0.4 mg/L.

Sulphate concentrations ranged from below the RDL (0.3 mg/L for ALS and 0.5 mg/L for Testmark) to a maximum of 201 mg/L with a 75th percentile value of 1.2 mg/L in watercourses. The two highest sulphate concentrations were both measured in KC-01 in February 2023 and March 2023 with values of 201 mg/L and 158 mg/L, respectively. KC-01 is located on Kidd Creek and is downstream of the Glencore Kidd Mine, which extracts base metals (copper, zinc, and silver). Sulphate concentrations ranged from below the RDL to a maximum of 4.08 mg/L with a 75th percentile value of 1.60 mg/L in waterbodies. With a 75th percentile hardness of 53 mg/L and 54 mg/L, Jocko Creek and West Buskegau River watersheds have a BC WQG-FAL criteria of 218 mg/L. The North Driftwood River watershed had a 75th percentile hardness of 81 mg/L, indicating a sulphate criteria of 309 mg/L for the watershed. The sulphate 75th percentile concentrations were below the respective guidelines for each watershed. Jocko Creek watershed had a 75th percentile concentration of 3.7 mg/L for sulphate, the North Driftwood River watershed had a 75th percentile value of 1.0 mg/L, and the West Buskegau River watershed had 75th percentile value of 0.9 mg/L.

Cyanide (free) in watercourses ranged from below the RDL (0.001 mg/L) to 0.0186 mg/L with a mean of 0.0026 mg/L and 75th percentile value of 0.0030 mg/L. Cyanide (free) in waterbodies ranged from below the RDL (0.001 mg/L) to a maximum of 0.007 mg/L. No statistics were calculated for the waterbodies due to too few above RDL results, with 72% of the samples having non-detect values. Exceedances of the CWQG-FAL for cyanide (free) were recorded for 11 of 210 sampling events in watercourses and one of 71 sampling events in waterbodies. Jocko Creek watershed had a cyanide (free) 75th percentile value of 0.0040 mg/L. The West Buskegau River and North Driftwood River watersheds had slightly lower concentrations, with a 75th percentile of 0.0034 mg/L and 0.0030 mg/L, respectively.

Cyanide (WAD) ranged from below the RDL (0.001 mg/L) to 0.0120 mg/L with a mean value of 0.0025 mg/L and 75th percentile of 0.0030 mg/L. In waterbodies, cyanide (WAD) ranged from below the RDL to a maximum of 0.0160 mg/L. No statistics were calculated for the waterbodies due to too few above detection limit samples, with 76% of the samples as non-detects. Exceedances of the CWQG-FAL and PWQO for cyanide (WAD) were recorded for 12 of 209 sampling events in watercourses and one of 71 sampling events in waterbodies. The 75th percentile of cyanide (WAD) was 0.0030 mg/L in Jocko Creek watershed, 0.0021 mg/L in North Driftwood River watershed, and 0.0040 mg/L in West Buskegau watershed.

Fluoride ranged from below the RDL (0.05 mg/L) to a maximum of 0.32 mg/L in watercourses. In waterbodies, fluoride ranged from below the RDL (0.05 mg/L) to a maximum of 0.11 mg/L. No statistics were calculated for the watercourses and waterbodies due to the number of results with below RDL values. There were three observed exceedances of the long-term CWQG-FAL criteria, at KC-01 in the Jocko Creek watershed in February 2023, and WBR-P-03 in May 2023, and WBR-S-REF in November 2023 with both located in the West Buskegau River watershed. No exceedances were observed in the North Driftwood River watershed, with the maximum value of 0.11 mg/L recoded at GERLK (Gerry Lake) in May 2023.

Chrysotile asbestos samples were collected in December 2023 at 12 watercourse monitoring locations and one waterbody location. The water samples were analyzed for determination of asbestos structures of lengths ≥0.5 µm and >10 µm. The samples analyzed were below the RDL of 0.20 MFL (million fibres per litre) at the 12 watercourse locations. The waterbody location sampled, Martin Lake (MARLK) had a detected fibre ≥0.5 µm with a concentration of 0.51 MFL. Due to the number of non-detect results, no seasonal or watershed patterns were observed.

Samples for Radium-226 analysis were collected in October 2021 at three watercourse locations and in August 2021 and one waterbody location. Samples were collected in December 2023 at 12 watercourse monitoring locations and one waterbody location. Approximately 71% of the sample results were below the RDL of 0.005 Bq/L with the maximum value recorded of 0.009 Bq/L at MATR-02, located on the Mattagami River in the Jocko Creek watershed. There were no occurrences of Radium-226 exceeding the PWQO guideline of 1 Bq/L. Due to the number of non-detect results for radium-226, no seasonal or watershed patterns were observed.

Table 5.26 Summary of General Constituents in Local Water Quality Monitoring Stations

	Parameters	Units	RDL	CCME		PWQO	Minimum	Maximum	Mean	75th Percentile (25th) [e]	95th Percentile (5th) [e]	Std. Dev.	# of Samples	# of Non-detects	# of Observed Exceedances
				Short-term	Long-term										
Watercourses	pH, Field	S.U.	0	-	6.5 – 9	6.5 – 8.5	2.79	7.90	5.98	6.71 (5.14)	7.59 (4.21)	1.08	156	0	101
	Temperature, Field	deg C	-5	-	-	-	0.00	24.87	8.91	15.61	21.61	7.97	170	0	0
	Specific Conductivity, Field	mS/cm	0	-	-	-	0.017	0.602	0.088	0.108	0.183	0.072	180	NA	NA
	Dissolved Oxygen, Field	mg/L	0	-	Narrative [b]	Table [d]	0.09	19.73	7.77	9.37 (5.65)	14.16 (2.28)	3.41	217	NA	76 [f]
	Chloride	mg/L	0.2	640	120	-	<0.2	56.9	2.9	3.1	10.9	6.4	242	67	0
	Chrysotile Asbestos	MFL	0.20	-	-	-	-	<0.5	-	-	-	-	12	12	NA
	Cyanide	mg/L	0.002	-	-	-	-	0.0029	-	-	-	-	66	58	0
	Cyanide (Free)	mg/L	0.001	-	0.005	0.005	<0.001	0.0186	0.0025	0.0030	0.0055	0.0018	210	88	11
	Cyanide (Weak Acid Dissociable)	mg/L	0.001	-	-	-	<0.001	0.0120	0.0025	0.0030	0.0066	0.0018	209	97	12
	Fluoride	mg/L	0.05	-	0.12	-	-	0.32	-	-	-	-	242	194	3
	Radium-226	Bq/L	0.005	-	-	1	-	0.009	-	-	-	-	15	10	0
	Hardness (as $CaCO_3$)	mg/L	0.1	-	-	-	6.0	189.0	42.7	55.0	75.7	24.0	241	0	NA
	Sulphate	mg/L	0.3	-	Table [c]	-	<0.30	201.0	2.7	1.2	4.3	16.4	242	117	0
	Total Alkalinity (as $CaCO_3$)	mg/L	2	-	-	-	<1.0	134.0	34.6	50.8	74.2	24.2	242	1	NA
	Total Suspended Solids (TSS)	mg/L	0.67	-	Narrative [a]	-	<0.67	80.00	6.60	7.67	19.00	8.85	241	38	0
Waterbodies	pH, Field	S.U.	0	-	6.5 – 9	6.5 – 8.5	4.09	8.05	6.41	7.34 (5.61)	8.00 (4.45)	1.13	27	0	14
	Temperature, Field	deg C	-5	-	-	-	0.00	27.42	11.33	18.96	24.36	9.40	27	0	0
	Specific Conductivity, Field	mS/cm	0	-	-	-	0.016	0.780	0.140	0.175	0.257	0.151	25	NA	NA
	Dissolved Oxygen, Field	mg/L	0	-	Narrative [b]	Table [d]	3.34	17.89	8.25	9.29 (6.59)	13.87 (4.74)	2.90	50	NA	12 [f]
	Chloride	mg/L	0.2	640	120	-	-	1.1	-	-	-	-	75	50	0
	Chrysotile Asbestos	MFL	0.20	-	-	-	-	0.51	-	-	-	-	1	0	NA
	Cyanide	mg/L	0.002	-	-	-	-	0.0029	-	-	-	-	41	37	0
	Cyanide (Free)	mg/L	0.001	-	0.005	0.005	-	0.0070	-	-	-	-	71	51	1
	Cyanide (Weak Acid Dissociable)	mg/L	0.001	-	-	-	-	0.0160	-	-	-	-	71	54	1
	Fluoride	mg/L	0.05	-	0.12	-	-	0.11	-	-	-	-	75	38	0
	Radium-226	Bq/L	0.005	-	-	1	-	<0.005	-	-	-	-	2	2	0
	Hardness (as $CaCO_3$)	mg/L	0.1	-	-	-	11.3	233.0	76.8	110.0	138.6	42.1	75	0	NA
	Sulphate	mg/L	0.3	-	Table [c]	-	<0.30	4.08	1.01	1.60	2.72	0.94	75	36	0

	Parameters	Units	RDL	CCME		PWQO	Minimum	Maximum	Mean	75th Percentile (25th) [e]	95th Percentile (5th) [e]	Std. Dev.	# of Samples	# of Non-detects	# of Observed Exceedances
				Short-term	Long-term										
	Total Alkalinity (as $CaCO_3$)	mg/L	2	-	-	-	4.6	268.0	79.1	118.0	155.4	51.7	75	0	NA
	Total Suspended Solids (TSS)	mg/L	0.67	-	Narrative [a]	-	-	27.30	-	-	-	-	75	41	0

Notes:

NA - not applicable, T – total, D - dissolved

a TSS narrative “clear flow: Maximum increase of 25 mg/L from background levels for any short-term exposure (e.g., 24-h period). Maximum average increase of 5 mg/L from background levels for longer term exposures (e.g., inputs lasting between 24 h and 30 d).”

b DO Narrative = Lowest acceptable DO concentrations for the protection of freshwater organisms; 6 mg/L or greater for early life stages of warmwater species, 5.5 mg/L or greater for other life stages of warmwater species, 9.5 mg/L or greater for early life stages of coldwater species, and 6.5 mg/L or greater for other life stages of coldwater species

c Sulphate guideline value is from British Columbia Ministry of Environment and Climate Change Strategy for the protection of aquatic life (Guideline: 128 mg/L for hardness 0 to 30 mg CaCO3·L-1; 218 mg/L for hardness 31 to 75 mg CaCO3·L-1, 309 mg/L for hardness 76 to 180 mg CaCO3·L-1, 429 mg/L for hardness 181 to 250 mg CaCO3·L-1) (Meays and Nordin 2013)

d Dissolved oxygen: Consult PWQO table depending on cold water or warm water fish species present

e Field pH and dissolved oxygen have lowest acceptable range guideline values for CCME CWQG-FAL and PWQO and lower percentile results are used for assessment

f Dissolved oxygen guideline applied of CCME CWQG-FAL cold water other life stages (6.5 mg/L)

5.3.2.1.1 Lake Profiles

For select lakes in the North Driftwood River watershed, temperature and DO measurements were collected to assess the vertical profile in spring, summer, and fall seasons (Table 5.27). Measurements were collected at 1 m depth intervals, targeting the deepest part of the waterbody. A thermocline is identified by a distinct steep temperature gradient over a several metre depth. Lake profile data were collected by WSP in 2022 and 2023 (WSP 2024).

Table 5.27 Lake Profiles Summary

Station ID (Site)	Sampling Date	Maximum Measured Water Depth (m)	Thermocline Depth (m)
GERLK (Gerry Lake)	August 2022	14	2.5
	October 2022	14	7.5
	June 2023	10	3
	July 2023	11	3
MARLK (Martin Lake)	August 2022	10	3
	June 2023	10	1
JACLK (Jack Lake)	September 2022	15	8
	October 2022	15	12
SUTHLK (Sutherland Lake)	September 2022	20	4.5
	October 2022	15	8
	June 2023	10	3.5
MELLK (Mel Lake)	September 2022	18	6
DAVLK (Davis Lake)	September 2022	20	4.5

Gerry Lake profiles were measured in August and October 2022 and in June and July 2023 (Figure A.19.1, Appendix A) and observed thermal stratification for the spring, summer and fall events. The thermocline in October 2022 was observed to be 4.5 m deeper than the spring and summer monitoring events indicating the lake was approaching a fall turnover event.

Martin Lake profiles were measured in August 2022 and June 2023 by WSP staff (Figure A.19.2, Appendix A), which both observed thermally stratified conditions. The August 2022 event had an anoxic hypolimnion. In August 2022, a thermocline was present, starting at approximately 3 m depth. In June 2023, a thermocline was present, starting at approximately 2.5 m depth and low oxygen conditions within the hypolimnion but approaching anoxic conditions until close to 10 m below the water surface.

Jack Lake profiles were measured in September and October 2022 (Figure A.19.3, Appendix A) and observed thermal stratification with thermoclines extending 8 m below the water surface for the September 2022 event and starting at 12 m for the October 2022 event. The September 2022 event observed an anoxic hypolimnion and the October 2022 event observed low oxygen concentrations in the upper epilimnion (1-2 m below the surface).

Sutherland Lake profiles were measured for two sampling events in 2022 and one sample event in 2023 by WSP staff (Figure A-19-4, Appendix A). In September 2022, a thermocline was present starting at a depth of 4.5 m, indicating thermal stratification and limited mixing. While a distinct temperature gradient change was present around 8 m in October 2022, there was overall reduced thermal stratification, with less temperature difference between the upper and lower layers of water. In addition, DO increased with depth, suggesting the fall turnover event approaching for the waterbody. In June 2023, a thermocline was present starting at approximately 3.5 m, indicating that Sutherland Lake was thermally stratified with anoxic conditions in the lower 5 m of the hypolimnion.

Mel Lake profiles were measured once in September 2022 by WSP (Figure A.19.5, Appendix A). The maximum measured water depth was 18 m. A thermocline was present, starting at a depth of 6 m with anoxic conditions in the hypolimnion.

The Davis Lake profile was measured in September 2022 by WSP (Figure A.19.6, Appendix A) identifying a thermally stratified condition. The monitoring event observed anoxic (low oxygen) conditions in the hypolimnion (water depths below thermocline).

5.3.2.2 Nutrients

Table 5.28 presents a summary of the laboratory analytical nutrient results with complete analytical results provided in Appendix B.6. Seasonal analysis results are provided in Appendix B.8. Watershed analysis results are presented in Appendix B.9.

Nitrate (NO_3) as N (nitrogen) concentrations in watercourses ranged from below the RDL (0.02 mg N/L) to a maximum of 2.30 mg N/L. In waterbodies, nitrate concentrations ranged from below the RDL value, with a maximum value of 0.70 mg N/L. No statistics were calculated for the lab results due the number of non-detect values with approximately 59% non-detects in watercourses and 95% non-detects in waterbodies. There were no observed exceedances of the CWQG-FAL for nitrate in either the monitored watercourses or waterbodies. Due to the amount of non-detect results, no seasonal or watershed patterns were observed.

Similarly, nitrite (NO_2) as N concentrations ranged from below the RDL (0.01 mg N/L) to a maximum of 0.05 mg N/L in watercourses with no exceedances of the CWQG-FAL recorded. In waterbodies, nitrite concentrations ranged from below the RDL to a maximum of 0.32 mg N/L, which was a single CWQG-FAL exceedance reported at GERLK for the December 2023 event. No statistics were calculated for the lab results due to the number of non-detect results with approximately 82% non-detects in watercourses and 92% non-detects in waterbodies. In addition, no seasonal or watershed patterns were observed due to the number of non-detect samples.

Total ammonia (as N) ranged from below the RDL (0.005 mg/L) to 0.408 mg/L with a mean value of 0.053 mg/L and 75th percentile of 0.062 mg/L in watercourses. In waterbodies, total ammonia (as N) ranged from below the RDL to 0.356 mg/L with a mean value of 0.033 mg/L and 75th percentile of 0.039 mg/L. There were no exceedances of the CWQG-FAL guideline for total ammonia (as N) observed in either the watercourses or waterbodies. The CWQG-FAL total ammonia guideline values are field water temperature and field pH dependent was developed to convert un-ionized ammonia to total ammonia

(CCME 2010). A total ammonia concentration higher than the CWQG-FAL guideline value would also exceed the un-ionized ammonia CWQG-FAL guideline value. Total ammonia (as N) was observed to be higher in the late fall and winter months and lower in the spring and summer in both watercourses and waterbody monitoring locations. The 75th percentile of total ammonia (as N) was 0.057 mg/L in Jocko Creek watershed, 0.048 mg/L in the North Driftwood watershed, and 0.069 mg/L in the West Buskegau River watershed.

DOC in watercourses ranged from below 0.4 mg/L to 58.6 mg/L with a mean value of 31.1 mg/L and 75th percentile 42.0 mg/L. In waterbodies, DOC ranged from 5.9 mg/L to 46.0 mg/L with a mean value of 20.3 mg/L and 75th percentile of 28.2 mg/L. DOC concentrations were observed to be slightly higher in the fall months in both watercourses and waterbodies with no other substantial seasonal trends noted. Jocko Creek and North Driftwood River watersheds had similar DOC concentrations with 75th percentile values of 33.1 mg/L and 32.2 mg/L, respectively. The West Buskegau River watershed had a higher 75th percentile of 44.6 mg/L.

Total phosphorous (TP) concentrations ranged from below the RDL (0.002 mg/L) to a maximum of 0.119 mg/L with a 75th percentile of 0.033 mg/L and mean of 0.025 mg/L in watercourses. The TP in waterbodies ranged from below the RDL (0.002 mg/L) to a maximum of 0.233 mg/L with a 75th percentile of 0.020 mg/L and mean value of 0.022 mg/L. PWQO values for TP are 0.030 mg/L and 0.020 mg/L for watercourses and waterbodies, respectively. There were a total of 83 exceedances of the PWQO from 316 sampling events, 66 in the watercourses and 17 in the waterbodies. The 75th percentile values of both the watercourses and waterbodies exceed their respective PWQO criteria and TP is identified as a PoPC. Under the Ministry of Environment and Energy Water Management Policies for PWQO, surface water quality which does not presently meet the PWQO, is considered a Policy 2 parameter and shall not be further degraded for the respective parameter (MOEE 1994).

A seasonal pattern of TP was observed with concentrations peaking in March, then decreasing in the spring to a low annual value in May and increasing slightly during the summer and fall months (Figure 5.15). A similar seasonality trend was observed in each of the three watersheds, with Jocko Creek watershed having slightly lower total phosphorous concentrations than the North Driftwood River and West Buskegau River watersheds in the summer and fall. Due to several high TP values in waterbodies, the North Driftwood River watershed experiences a spike in TP in December, which is not observed in the other watersheds.

Figure 5.20 Seasonal Variation of Total Phosphorous in All Project Site Monitoring Locations and Three Main Watersheds (Jocko Creek, North Driftwood River, and West Buskegau River)

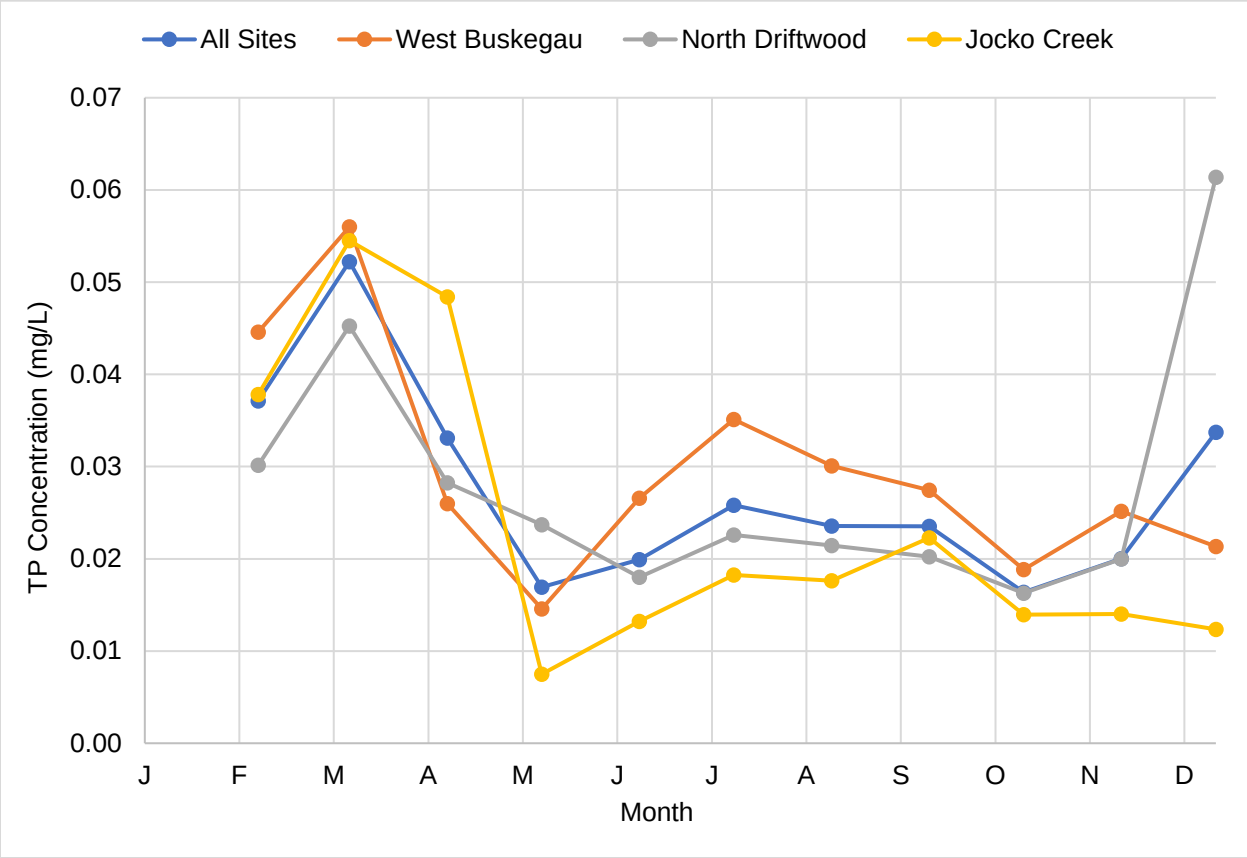


Table 5.28 Summary of Nutrients in Local Water Quality Monitoring Stations

	Parameters	Units	RDL	CCME		PWQO	Minimum	Maximum	Mean	75th Percentile	95th Percentile	Std. Dev.	# of Samples	# of Non-detects	# of Exceedances
				Short-term	Long-term										
Watercourses	Nitrate (as N)	mg/L	0.02	124	3	-	-	2.30	-	-	--	-	242	143	0
	Nitrite (as N)	mg/L	0.01	-	0.06	-	-	0.05	-	-	-	-	242	198	0
	Total Phosphorous	mg/L	0.002	-	Guidance Framework [b]	Guidance [c]	<0.002	0.119	0.025	0.033	0.052	0.016	241	3	66
	Dissolved Organic Carbon (DOC)	mg/L	1	-	-	-	<0.4	58.6	31.1	42.0	51.0	12.6	170	1	NA
	Total Ammonia (as N)	mg/L	0.005	-	Table [a]	-	<0.005	0.408	0.053	0.062	0.112	0.051	242	4	0
Waterbodies	Nitrate (as N)	mg/L	0.02	124	3	-	-	0.70	-	-	-	-	75	71	0
	Nitrite (as N)	mg/L	0.01	-	0.06	-	-	0.32	-	-	-	-	75	69	1
	Total Phosphorous	mg/L	0.002	-	Guidance Framework [b]	Guidance [c]	<0.002	0.233	0.022	0.020	0.053	0.037	75	3	17
	Dissolved Organic Carbon (DOC)	mg/L	1	-	-	-	5.9	46.0	20.3	28.2	37.8	10.9	27	0	NA
	Total Ammonia (as N)	mg/L	0.005	-	Table [a]	-	<0.005	0.356	0.033	0.039	0.086	0.046	75	8	0

Notes:

NA - not applicable, T – total, D - dissolved

a Total Ammonia as N table is temperature and pH dependent. Measurements of total ammonia in the aquatic environment are often expressed as mg/L total ammonia-N. The present guideline values (mg/L NH3) can be converted to mg/L total ammonia-N by multiplying the corresponding guideline value by 0.8224. Consult the CWQG-FAL factsheet for specific table.

b TP narrative = Trigger Ranges for Total Phosphorus (mg/L) (see Guidance Framework for Phosphorus factsheet): ultra-oligotrophic <0.004, oligotrophic 0.004-0.01, mesotrophic 0.01-0.02, meso-eutrophic 0.02-0.035, eutrophic 0.035-0.1, hyper-eutrophic >0.1.

c Phosphorus, total (TP): To avoid nuisance concentrations of algae in lakes, average TP concentrations for the ice-free period should not exceed 0.02 mg/L, A high level of protection against aesthetic deterioration will be provided by a TP concentration for the ice-free period of 0.01 mg/L or less. This should apply to all lakes naturally below this value, and excessive plant growth in rivers and streams should be eliminated at a TP concentration below 0.03 mg/L

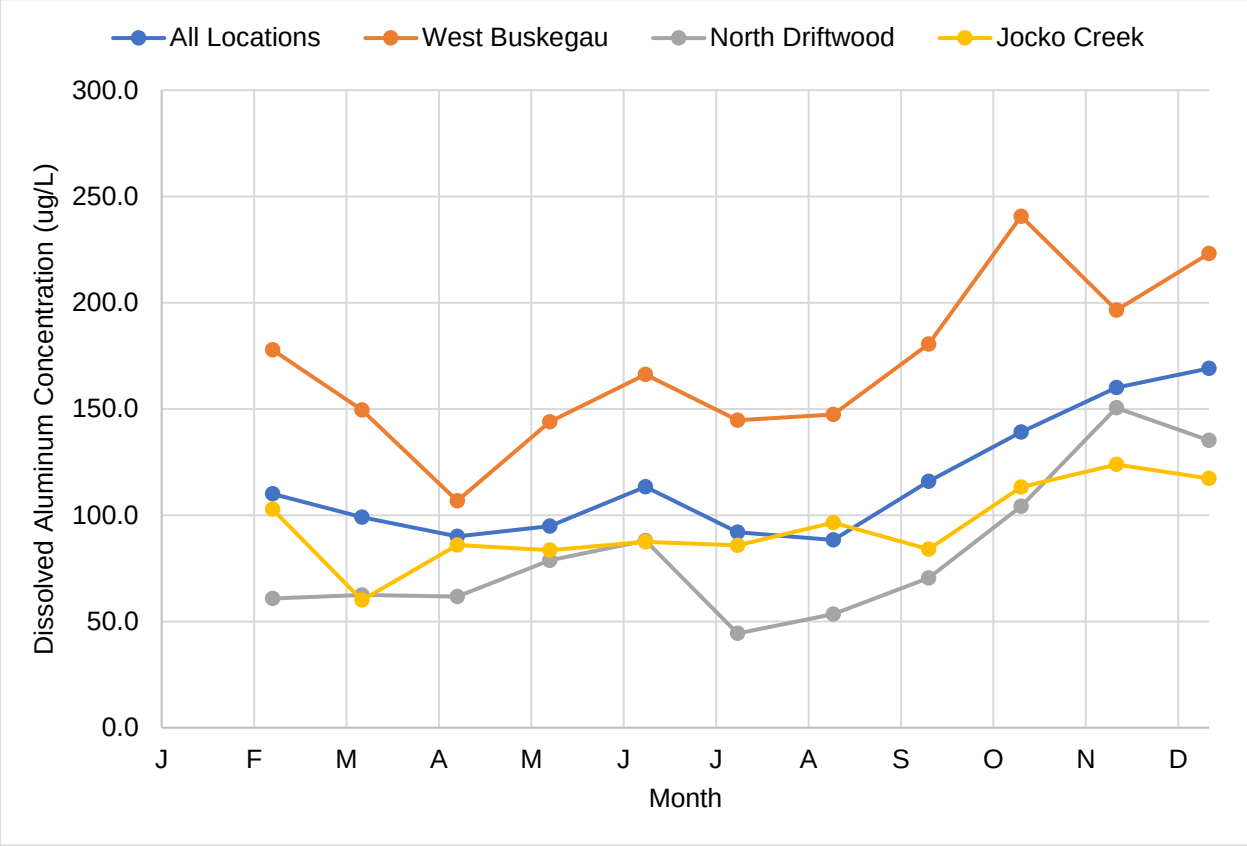
5.3.2.3 Metals and Metalloids

Table 5.29 presents a summary of the laboratory analytical metal and metalloid results with complete analytical results provided in Appendix B.6. Seasonal analysis results are provided in Appendix B.8. Watershed analysis results are presented in Appendix B.9.

Dissolved aluminum concentrations, filtered with 0.2 µm filter represent clay-free samples, ranged from 14 µg/L to 202 µg/L with a 75th percentile of 107 µg/L and mean value of 82 µg/L in watercourses. Dissolved aluminum (0.2 µm filter) concentrations in waterbodies ranged from 2 µg/L to 141 µg/L with a 75th percentile of 43 µg/L and a mean value of 37 µg/L. The PWQO of aluminum as a clay-free sample is 75 µg/L if the pH is between 6.5 – 9.0. The 75th percentile of watercourses exceeds the PWQO and is therefore identified as a PoPC. In waterbodies, 12 samples were measured using the 0.2 micron filter technique and the 75th percentile did not exceed the PWQO. The 75th percentile values of dissolved aluminum in watercourses exceeds the respective criteria and is identified as a PoPC and is anticipated to be a Policy 2 parameter (MOEE 1994). Jocko Creek and North Driftwood River watersheds had similar dissolved aluminum values, with a 75th percentile of 75 µg/L and 86 µg/L, respectively. The West Buskegau River watershed had higher dissolved aluminum concentrations, with a 75th percentile of 133 µg/L.

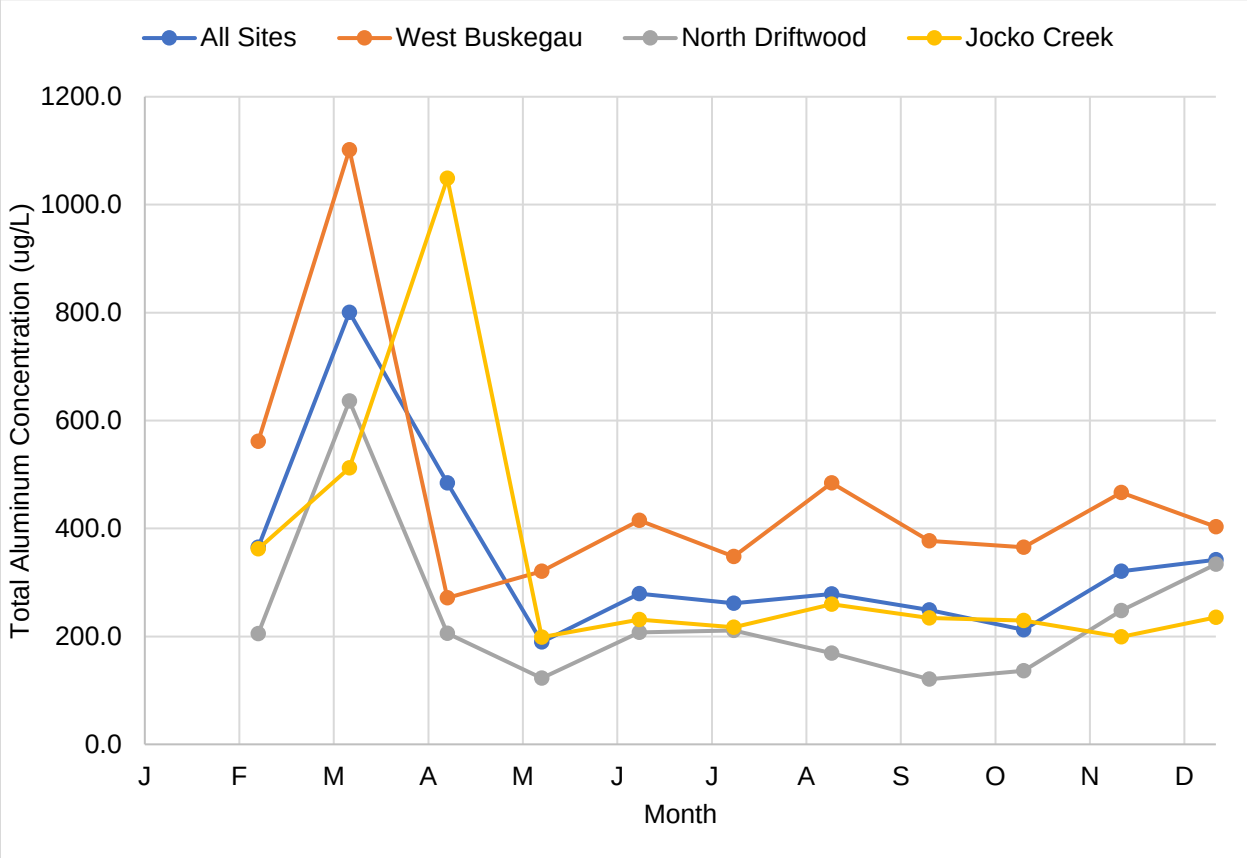
Dissolved aluminum concentrations, filtered with a 0.45 µm filter, ranged from 11 µg/L to 378 µg/L with a 75th percentile of 174 µg/L and a mean value of 133 µg/L in watercourses. In waterbodies, dissolved aluminum ranged from less than the RDL (1 µg/L) to a maximum of 243 µg/L with a 75th percentile of 74 µg/L and a mean value of 51 µg/L. The 0.45 µm filter is a standardized filter and is not considered representative of a clay-free sample. Dissolved aluminum concentrations were observed to be slightly higher in the fall and early winter, with the West Buskegau River watershed experiencing more substantial variation (Figure 5.21). Jocko Creek and North Driftwood River watersheds had similar dissolved aluminum (0.45 µm) values, with a 75th percentile of 120 µg/L and 135 µg/L, respectively. The West Buskegau River watershed had higher dissolved aluminum concentrations, with a 75th percentile of 230 µg/L.

Figure 5.21 Seasonal Variation of Dissolved Aluminum in All Project Site Monitoring Locations and by Watershed



Total aluminum concentrations in watercourses ranged from 26 µg/L to 3,210 µg/L with a 75th percentile of 424 µg/L and a mean value of 361 µg/L. In waterbodies, total aluminum ranged from 3.4 µg/L to 378 µg/L with a 75th percentile of 148 µg/L and a mean value of 91.4 µg/L. The CWQG-FAL for total aluminum is 5 µg/L if pH < 6.5 and 100 µg/L if pH > 6.5. The total aluminum concentrations were recorded to exceed the CWQG-FAL value in 250 of 317 sampling events. A seasonal pattern was observed with total aluminum peaking in March, then decreasing in the spring and increasing slightly during the summer and fall months (Figure 5.22). A similar seasonality trend was observed in each of the three watersheds, with North Driftwood River watershed having slightly lower total aluminum concentrations than the other watersheds. Jocko Creek watershed has a temporal difference from the other watersheds with concentrations peaking in April. Jocko Creek watershed had a 75th percentile of 324 µg/L for total aluminum. The North Driftwood River watershed had a 75th percentile of 260 µg/L. Total aluminum concentrations in the West Buskegau River watershed were higher than the other watersheds with a 75th percentile value of 598 µg/L.

Figure 5.22 Seasonal Variation of Total Aluminum in All Project Site Monitoring Locations and by Watershed



Total cadmium concentrations in watercourses ranged from below the RDL (0.005 µg/L) to a maximum of 0.330 µg/L with a mean of 0.037 µg/L and 75th percentile of 0.042 µg/L. In waterbodies, the total cadmium concentration ranged from below the RDL to a maximum of 0.080 µg/L with 37 of 75 samples below the RDL and therefore no statistics were calculated. There were 24 of 317 recorded exceedances of the PWQO and CWQG-FAL values, which are hardness dependent. Cadmium concentrations were observed to be higher in the winter and early spring and lower in the late spring through fall for watercourses. In waterbodies, cadmium concentrations were higher in the late fall to winter months and lower in spring to early fall. Total cadmium concentrations were similar in Jocko Creek watershed and the West Buskegau River watershed, both with a 75th percentile value of 0.050 µg/L. The North Driftwood River watershed had slightly lower total cadmium concentrations, with a 75th percentile of 0.030 µg/L.

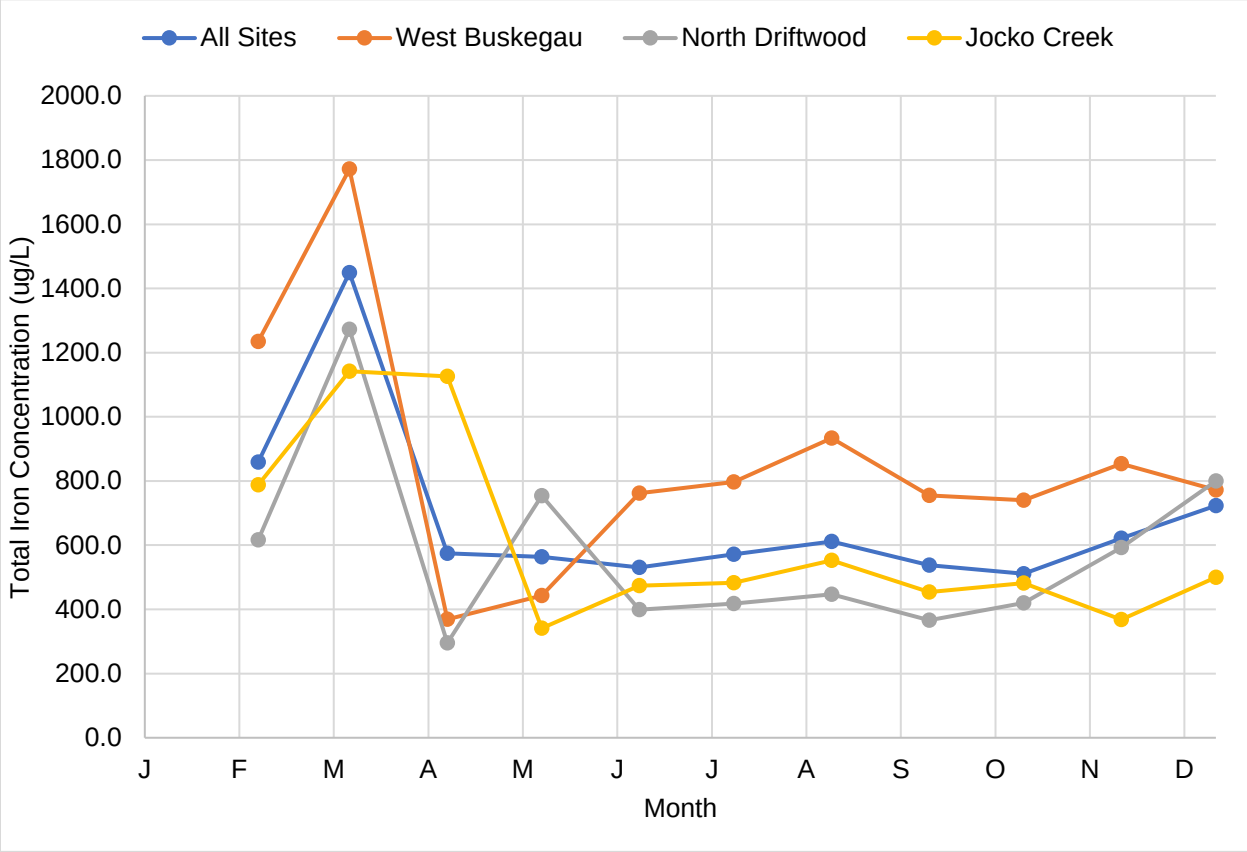
Total cobalt concentrations in watercourses ranged from below the RDL (0.1 µg/L) to a maximum of 1.8 µg/L with both a 75th percentile and mean value of 0.3 µg/L. In waterbodies, total cobalt concentrations ranged from below the RDL to a maximum of 0.5 µg/L. Approximately 65% of the samples had non-detect values for the waterbodies. There were six recorded exceedances of the PWQO limit of 0.9 µg/L of 242 total samples in watercourses and no recorded exceedances in waterbodies.

Exceedances were recorded at KC-01 in Jocko Creek and WBR-P-03, WBR-S-06, and WBR-S-REF in the West Buskegau River. Cobalt concentrations were observed to be higher in the winter and lower in spring through fall, with the highest values recorded in March. No substantial differences were observed for total cobalt concentrations between the three main watersheds.

Total copper concentrations ranged from below the RDL (0.5 µg/L) to a maximum of 52.0 µg/L with a 75th percentile of 2.0 µg/L and mean value of 1.9 µg/L in watercourses. Total copper ranged from below the reportable detection limit to a maximum of 4.1 µg/L in waterbodies, with approximately 53% of the results having non-detect values. The CWQG-FAL and interim PWQO for copper are based on hardness and guideline values are calculated per sampling event where applicable. There were 65 exceedances of the applicable criteria recorded out of 317 samples. There were no substantial seasonal differences observed in total copper concentrations in the watercourse and waterbody monitoring locations. Total copper concentrations were similar in Jocko Creek watershed and the West Buskegau River watershed with 75th percentile values of 2.0 µg/L and 2.2 µg/L, respectively. The North Driftwood River watershed had a slightly lower 75th percentile total copper concentration of 1.5 µg/L.

Total iron concentrations in watercourses ranged from a minimum of 130 µg/L to a maximum of 3,640 µg/L with a 75th percentile of 800 µg/L and a mean value of 695 µg/L. In waterbodies, total iron ranged from below the reportable detection limit (10 µg/L) to a maximum of 6,900 µg/L with a 75th percentile of 503 µg/L and a mean value of 381 µg/L. Out of the 317 samples collected, there were 241 exceedances of the CWQG-FAL and PWQO (300 µg/L), 212 in the watercourses and 29 in the waterbodies. The 75th percentile values of both the watercourses and waterbodies exceed the CWQG-FAL and PWQO values and total iron is identified as a PoPC, and is anticipated to be a Policy 2 parameter (MOEE 1994). A seasonal pattern was observed with total iron peaking in March, then decreasing in the spring and increasing slightly during the summer and fall months (Figure 5.23). A similar seasonality trend was observed in each of the three watersheds, with the West Buskegau River watershed having slightly higher total iron concentrations than Jocko Creek and North Driftwood River watersheds in all months except April and May. The West Buskegau River watershed had overall higher concentrations of total iron with a 75th percentile of 1,075 µg/L. Jocko Creek and North Driftwood River watersheds had similar total iron concentrations, with a 75th percentile values of 580 µg/L and 644 µg/L, respectively.

Figure 5.23 Seasonal Variation of Total Iron All Project Site Monitoring Locations and by Watershed



Total lead concentrations ranged from below the RDL (0.1 µg/L) to a maximum of 5.56 µg/L with a 75th percentile of 0.54 µg/L and mean value of 0.43 µg/L in watercourses. In waterbodies, total lead ranged from below the RDL to a maximum of 0.742 µg/L with a 75th percentile value of 0.249 µg/L and mean of 0.174 µg/L. There were eight exceedances of the lead guideline values in watercourses out of 242 samples. Lead concentrations were observed to be higher in the winter months and lower in spring through fall. Jocko Creek and West Buskegau River watersheds had similar concentrations of total lead with a 75th percentile of 0.50 µg/L and 0.59 µg/L, respectively. The North Driftwood River watershed had slightly lower total lead concentrations, with a 75th percentile of 0.33 µg/L.

Dissolved manganese concentrations in watercourses ranged from 1.9 µg/L to 525.0 µg/L with a 75th percentile of 53.6 µg/L and mean value of 45.4 µg/L. In waterbodies, dissolved manganese ranged from 0.42 µg/L to 530 µg/L with a 75th percentile of 38 µg/L mean of 34 µg/L. There was one recorded CWQG-FAL exceedance in GERLK (Gerry Lake) in May 2023. Dissolved manganese concentrations were higher in the late fall to winter months and lower in spring to early fall for both watercourses and waterbodies. The North Driftwood River and West Buskegau River watersheds had similar concentrations of dissolved manganese with a 75th percentile of 51.1 µg/L and 59.2 µg/L, respectively. Jocko Creek watershed had slightly lower dissolved manganese concentrations, with a 75th percentile of 38.1 µg/L.

Trace mercury concentrations ranged from 0.25 ng/L to 10.80 ng/L in watercourses with a 75th percentile of 5.49 ng/L and mean value of 4.07 ng/L. In waterbodies, trace mercury concentrations ranged from 0.30 ng/L to 565 ng/L with a 75th percentile of 2.91 ng/L and mean value of 10.80 ng/L. When the maximum outlier of 565 ng/L in the waterbodies is removed, the mean value is 2.00 ng/L. There was one recorded exceedance of the CWQG-FAL (26 ng/L) in October 2023 in Sutherland Lake (SUTHLK), located in the North Driftwood River watershed, which is the outlier value. Trace mercury concentrations were observed to be slightly higher in the late winter and early spring months and lower during the summer and fall for both watercourses and waterbodies. Jocko Creek and North Driftwood River watersheds had similar concentrations of trace mercury with a 75th percentile of 4.91 ng/L and 3.45 ng/L, respectively. The West Buskegau River watershed had slightly higher trace mercury concentrations with a 75th percentile of 6.45 ng/L.

Methyl mercury results in watercourses and waterbodies had no exceedances of the CWQG-FAL value and the RDL was below the CWQG-FAL value.

Total zinc concentrations in watercourses ranged from 2 µg/L to a maximum of 54 µg/L with a 75th percentile of 7 µg/L and mean value of 8 µg/L. Total zinc concentrations in waterbodies ranged from below the RDL (1.0 µg/L) to a maximum of 33.7 µg/L with a 75th percentile value of 7 µg/L and mean value of 5.3 µg/L. Total zinc concentrations are compared to the PWQO lower limit of 20 µg/L, with seven exceedances recorded, five for watercourse locations and two for waterbody locations. Concentrations of total zinc were higher in the winter months and lower in the spring through fall. No substantial seasonal differences for total zinc were observed for the waterbody monitoring locations. The North Driftwood River and West Buskegau River watersheds had similar concentrations of total zinc with a 75th percentile of 7 µg/L and 8 µg/L, respectively. Jocko Creek watershed had slightly higher total iron concentrations, with a 75th percentile value of 10 µg/L.

Concentrations of other metals and metalloids including total antimony, arsenic, beryllium, boron, molybdenum, nickel, selenium, thallium, tungsten, uranium, and vanadium had no recorded exceedances of the applicable CWQG-FAL and PWQO values at the sampling locations with RDL values below the guideline values (Table 5.29).Total nickel, selenium, silver and zirconium in watercourses out of 242 samples had six or fewer exceedances of applicable guideline values with RDL values below the guideline values, and no guideline exceedances observed in waterbodies (Table 5.29).

Table 5.29 Summary of Metals and Metalloids Concentrations at Local Water Quality Monitoring Stations

	Parameters	Units	RDL	CCME		PWQO	Minimum	Maximum	Mean	75th Percentile	95th Percentile	Std. Dev.	# of Samples	# of Non-detects	# of Exceedances
				Short-term	Long-term										
Watercourses	Dissolved Aluminum (0.45 µm)	µg/L	1	-	-		11	378	133	174	281	77	242	0	N/A
	Dissolved Aluminum (0.2 µm)	µg/L	1	-	-	Narrative [j]	14	202	82	107	168	45	72	0	34
	Total Aluminum	µg/L	1	-	Narrative [c]	-	26	3210	361	424	904	372	242	0	229
	Total Antimony	µg/L	0.1	-	-	20	-	1.23	-	-	-	-	242	198	0
	Total Arsenic	µg/L	0.1	-	5	5	0.3	2.0	0.8	1.0	1.4	0.3	242	51	0
	Total Beryllium	µg/L	0.02	-	-	Table [k]	-	0.15	-	-	-	-	242	200	0
	Total Boron	µg/L	2	29,000	1500	200	-	25	-	-	-	-	242	143	0
	Total Cadmium	µg/L	0.005	Equation [d]	Equation [e]	Table [l]	<0.005	0.330	0.037	0.042	0.069	0.036	242	11	21
	Total Chromium	µg/L	1	-	-	-	0.1	6.0	1.3	1.6	2.5	0.7	242	41	N/A
	Total Cobalt	µg/L	0.1	-	-	0.9	<0.1	1.8	0.3	0.3	0.7	0.2	242	35	6
	Total Copper	µg/L	0.2	-	Equation [h]	Table [m]	<0.5	52.0	1.9	2.0	3.0	3.9	242	28	62
	Total Iron	µg/L	10	-	300	300	130	3,640	695	800	1,500	463	242	0	212
	Total Lead	µg/L	0.05	-	Equation [i]	Narrative [n]	<0.10	5.56	0.43	0.54	0.88	0.47	242	2	8
	Dissolved Manganese	µg/L	0.1	Equation [f]	Variable [g]	-	1.9	525.0	45.4	53.6	100.3	53.3	233	0	1
	Mercury	µg/L	0.01	-	0.026	0.2	-	0.10	-	-	-	-	110	108	1
	Mercury (Trace)	ng/L	0.01	-	26	200	0.25	10.80	4.07	5.49	7.91	2.17	199	0	0
	Methyl Mercury	ng/L	0.02	-	4	-	0.035	0.283	0.141	0.199	0.237	0.065	44	0	0
	Total Molybdenum	µg/L	0.05	-	73	40	-	2.65	-	-	-	-	242	132	0
	Total Nickel	µg/L	0.5	-	Equation [a]	25	<0.5	4.0	0.9	1.2	2.0	0.6	242	85	0
	Total Selenium	µg/L	0.05	-	1	100	<0.05	2.20	0.16	0.16	0.30	0.27	242	79	6
	Total Silver	µg/L	0.01	-	0.25	0.1	-	0.17	-	-	-	-	242	213	3
	Total Thallium	µg/L	0.01	-	0.8	0.3	-	0.12	-	-	-	-	242	209	0
	Total Tungsten	µg/L	0.1	-	-	30	-	0.30	-	-	-	-	242	240	0
	Total Uranium	µg/L	0.01	33	15	5	<0.01	0.13	0.04	0.06	0.08	0.03	242	89	0
	Total Vanadium	µg/L	0.5	-	-	6	<0.5	5.0	0.9	1.0	2.0	0.7	242	90	0
	Dissolved Zinc	µg/L	1	Narrative [b]	Narrative [b]	-	<1	38	6	7	12	4	233	4	3
	Total Zinc	µg/L	1	-	-	20	2	54	7	8	14	5	241	4	5
	Total Zirconium	µg/L	0.2	-	-	4	<0.2	8.0	1.1	1.3	3.2	1.1	242	53	6

	Parameters	Units	RDL	CCME		PWQO	Minimum	Maximum	Mean	75th Percentile	95th Percentile	Std. Dev.	# of Samples	# of Non-detects	# of Exceedances
				Short-term	Long-term										
Waterbodies	Dissolved Aluminum (0.45 µm)	µg/L	1	-		-	<1	243	51	74	205	67	75	5	19
	Dissolved Aluminum (0.2 µm)	µg/L	1	-		Narrative [j]	2	141	37	43	110	41	12	0	2
	Total Aluminum	µg/L	1	-	Narrative [c]	-	3.4	378.0	91.4	148.0	315.9	105.3	75	1	22
	Total Antimony	µg/L	0.1	-	-	20	-	0.6	-	-	-	-	75	70	0
	Total Arsenic	µg/L	0.1	-	5	5	0.15	1.33	0.47	0.59	1.17	0.31	75	12	0
	Total Beryllium	µg/L	0.02	-	-	Table [k]	-	0.03	-	-	-	-	75	73	0
	Total Boron	µg/L	2	29,000	1500	200	-	8	-	-	-	-	75	56	0
	Total Cadmium	µg/L	0.005	Equation [d]	Equation [e]	Table [k]	-	0.080	-	-	-	-	75	38	3
	Total Chromium	µg/L	0.5/1	-	-	-	0.4	2.00	0.88	1.02	1.94	0.44	75	51	N/A
	Total Cobalt	µg/L	0.1	-	-	0.9	-	0.5	-	-	-	-	75	49	0
	Total Copper	µg/L	0.2	-	Equation [h]	Table [m]	-	4.1	-	-	-	-	75	40	3
	Total Iron	µg/L	10	-	300	300	<10	6900	381	503	790	805	75	4	29
	Total Lead	µg/L	0.05	-	Equation [i]	Narrative [n]	<0.050	0.742	0.162	0.220	0.551	0.174	75	28	0
	Dissolved Manganese	µg/L	0.1	Equation [f]	Variable [g]	-	0.42	530.00	34.00	38.00	100.12	73.22	73	0	0
	Mercury	µg/L	0.01	-	0.026	0.2	-	0.12	-	-	-	-	18	17	1
	Mercury (Trace)	ng/L	0.01	-	26	200	0.3	565.00	10.80	2.91	6.69	70.40	64	0	1
	Methyl Mercury	ng/L	0.02	-	4	-	<0.02	0.41	0.07	0.07	0.15	0.08	34	3	0
	Total Molybdenum	µg/L	0.05	-	73	40	-	1.00	-	-	-	-	75	44	0
	Total Nickel	µg/L	0.5	-	Equation [a]	25	-	1.6	-	-	-	-	75	53	0
	Total Selenium	µg/L	0.05	-	1	100	<0.05	0.39	0.08	0.09	0.20	0.06	75	35	0
	Total Silver	µg/L	0.01	-	0.25	0.1	-	0.16	-	-	-	-	75	72	1
	Total Thallium	µg/L	0.01	-	0.8	0.3	-	0.02	-	-	-	-	75	72	0
	Total Tungsten	µg/L	0.1	-	-	30	-	<1	-	-	-	-	75	75	0
	Total Uranium	µg/L	0.01	33	15	5	<0.01	0.18	0.03	0.05	0.08	0.03	75	20	0
	Total Vanadium	µg/L	0.5	-	-	6	-	1.1	-	-	-	-	75	64	0
	Dissolved Zinc	µg/L	1	Narrative [b]	Narrative [b]	-	<1.0	17.6	3.4	4.0	10.1	3.6	73	22	0
	Total Zinc	µg/L	1	-	-	20	<1.0	33.7	5.3	7.0	13.4	5.5	75	30	2
	Total Zirconium	µg/L	0.2	-	-	4	-	1.3	-	-	-	-	75	55	0

Notes:

NA - not applicable, T – total, D - dissolved

a Ni equation: Hardness ≤60 mg calcium carbonate (CaCO3)·L-1, CWQG-FAL is 0.025 mg/L, Hardness >60 to ≤180 mg CaCO3·L-1 use equation $e^{\{0.76[\ln(\text{hardness})]+1.06\}}$, Hardness >180 mg CaCO3·L-1, CWQG-FAL is 0.15 mg/L

	Parameters	Units	RDL	CCME		PWQO	Minimum	Maximum	Mean	75th Percentile	95th Percentile	Std. Dev.	# of Samples	# of Non-detects	# of Exceedances
				Short-term	Long-term										
b	Zn (dissolved) equation: short-term = exp(0.833[ln(hardness mg·L-1)] + 0.240[ln(DOC mg·L-1)] + 0.526 for hardness 13.8 and 250.5 mg CaCO3·L−1 & DOC 0.3 and 17.3 mg·L−1, long-term = exp(0.947[ln(hardness mg·L-1)] - 0.815[pH] + 0.398[ln(DOC mg·L-1)] + 4.625) for hardness 23.4 and 399 mg CaCO3·L−1, pH 6.5 and 8.13 and DOC 0.3 to 22.9 mg·L−1														
c	Al CWQG = 5 µg/L if pH <6.5, 100 µg/L if pH ≥6.5														
d	Cd short-term: 0.11 µg/L if hardness 0 to <5.3 mg CaCO3·L-1, $10^{\{1.016(\log[\text{hardness}]) - 1.71\}}$ if hardness ≥5.3 mg CaCO3·L-1 to ≤360 mg CaCO3·L-1, 7.7 µg/L if hardness >360 mg CaCO3·L-1														
e	Cd long-term: 0.04 µg/L if hardness 0 to <17 mg CaCO3·L-1, $10^{\{0.83(\log[\text{hardness}]) - 2.46\}}$ if hardness ≥17 to ≤280 mg CaCO3·L-1, 0.37 µg/L if hardness >280 mg CaCO3·L-1														
f	Mn (dissolved) short-term: benchmark calculator in Appendix B of Scientific Criteria Document for the Development of the Canadian Water Quality Guidelines for the Protection of Aquatic Life: Manganese														
g	Mn (dissolved) long-term: CWQG calculator in Appendix B of the Scientific Criteria Document for the Development of the Canadian Water Quality Guidelines for the Protection of Aquatic Life: Manganese.														
h	Cu long-term: 2 µg/L if hardness 0 to <82 mg CaCO3·L-1, $0.2*e^{\{0.8545[\ln(\text{hardness})]-1.465\}}$ if hardness ≥82 to ≤180 mg CaCO3·L-1, 4 µg/L if hardness >180 mg CaCO3·L-1														
i	Pb long-term: 1 µg/L if hardness 0 to <60 mg CaCO3·L-1, $e^{\{1.273[\ln(\text{hardness})]-4.705\}}$ if hardness ≥60 to ≤180 mg CaCO3·L-1, 7 µg/L if hardness >180 mg CaCO3·L-1														
j	At pH 4.5 to 5.5 the Interim PWQO is 15 µg/L based on inorganic monomeric aluminum measured in clay-free samples, at pH >5.5 to 6.5, no condition should be permitted which would increase the acid soluble inorganic aluminum concentration in clay-free samples to more than 10% above natural background concentrations for waters representative of that geological area of the Province that are unaffected by man-made inputs and at pH >6.5 to 9.0, the Interim PWQO is 75 µg/L based on total aluminum measured in clay-free samples														
k	Beryllium: 0.011 mg/L if hardness is <75 mg CaCO3 L^{-1}, 1.1 mg/L if hardness >75 mg CaCO3 L^{-1}														
l	Cadmium: 0.0001 mg/L if hardness is 0 to 100 mg CaCO3 L^{-1}, 0.0005 if hardness is >100 mg CaCO3 L^{-1}														
m	Copper: 0.001 mg/L if hardness is 0 to 20 mg CaCO3 L^{-1}, 0.005 mg/L if hardness is .20 mg CaCO3 L^{-1}														
n	Lead: 0.001 mg/L if hardness is <30 mg CaCO3 L^{-1}, 0.003 mg/L if hardness is 30 to 80 mg CaCO3 L^{-1}, 0.005 mg/L if hardness is > 80 mg CaCO3 L^{-1}														

5.3.2.4 Polycyclic Aromatic Hydrocarbons

Table 5.30 presents a summary of the laboratory analytical metal and metalloid results with complete analytical results provided in Appendix B.6.

Samples for polycyclic aromatic hydrocarbons (PAHs) analysis were collected in December 2023 at 12 watercourse monitoring locations and one waterbody location. The analyzed samples were below the RDL for the respective parameters. Due to the number of non-detect samples, no seasonal or watershed patterns could be observed. Several parameters have RDLs that are greater than the applicable PWQO criteria including anthracene, benzo(a)anthracene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, and pyrene. It is our understanding that no commercial laboratory in Ontario has an approved method for the analysis of a number of PAHs in water which can achieve RDLs at or less than the PWQOs including anthracene, benzo(a)anthracene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene and fluoranthene.

Table 5.30 Summary of Polycyclic Aromatic Hydrocarbons at Local Water Quality Monitoring Stations

	Parameters	Units	RDL	CCME		PWQO	Minimum	Maximum	Mean	75th Percentile	95th Percentile	Std. Dev.	# of Samples	# of Non-detects	# of Exceedances
				Short-term	Long-term										
Watercourses	Acenaphthene	µg/L	0.05	-	5.8	-	-	<0.05	-	-	-	-	12	12	0
	Anthracene	µg/L	0.02	-	0.012	0.0008	-	**<0.02**	-	-	-	-	12	12	0
	Benzo(a)anthracene	µg/L	0.02	-	0.018	0.0004	-	**<0.02**	-	-	-	-	12	12	0
	Benzo(g,h,i)perylene	µg/L	0.05	-	-	0.00002	-	**<0.05**	-	-	-	-	12	12	0
	Benzo(k)fluoranthene	µg/L	0.05	-	-	0.0002	-	**<0.05**	-	-	-	-	12	12	0
	Biphenyl	µg/L	0.1	-	-	0.2	-	<0.1	-	-	-	-	12	12	0
	Chrysene	µg/L	0.06	-	-	0.0001	-	**<0.06**	-	-	-	-	12	12	0
	Dibenzo(a,h)anthracene	µg/L	0.05	-	-	0.002	-	**<0.05**	-	-	-	-	12	12	0
	Dichlorobenzidine, 3,3'-	µg/L	0.06	-	-	0.6	-	<0.06	-	-	-	-	12	12	0
	Fluoranthene	µg/L	0.03	-	0.04	0.0008	-	**<0.04**	-	-	-	-	12	12	0
	Fluorene	µg/L	0.05	-	3	0.2	-	<0.05	-	-	-	-	12	12	0
	Methylnaphthalene, 1-	µg/L	0.03	-	-	2	-	<0.04	-	-	-	-	12	12	0
	Methylnaphthalene, 2-	µg/L	0.02	-	-	2	-	<0.02	-	-	-	-	12	12	0
	Naphthalene	µg/L	0.06	-	1.1	7	-	<0.06	-	-	-	-	12	12	0
	Phenanthrene	µg/L	0.03	-	0.4	0.03	-	**<0.04**	-	-	-	-	12	12	0
	Pyrene	µg/L	0.06	-	0.025	-	-	**<0.06**	-	-	-	-	12	12	0
Waterbodies	Acenaphthene	µg/L	0.05	-	5.8	-	-	<0.05	-	-	-	-	1	1	0
	Anthracene	µg/L	0.02	-	0.012	0.0008	-	**<0.02**	-	-	-	-	1	1	0
	Benzo(a)anthracene	µg/L	0.02	-	0.018	0.0004	-	**<0.02**	-	-	-	-	1	1	0
	Benzo(g,h,i)perylene	µg/L	0.05	-	-	0.00002	-	**<0.05**	-	-	-	-	1	1	0
	Benzo(k)fluoranthene	µg/L	0.05	-	-	0.0002	-	**<0.05**	-	-	-	-	1	1	0
	Biphenyl	µg/L	0.1	-	-	0.2	-	<0.1	-	-	-	-	1	1	0
	Chrysene	µg/L	0.06	-	-	0.0001	-	**<0.06**	-	-	-	-	1	1	0
	Dibenzo(a,h)anthracene	µg/L	0.05	-	-	0.002	-	**<0.05**	-	-	-	-	1	1	0
	Dichlorobenzidine, 3,3'-	µg/L	0.06	-	-	0.6	-	<0.06	-	-	-	-	1	1	0
	Fluoranthene	µg/L	0.03	-	0.04	0.0008	-	**<0.03**	-	-	-	-	1	1	0
	Fluorene	µg/L	0.05	-	3	0.2	-	<0.05	-	-	-	-	1	1	0
	Methylnaphthalene, 1-	µg/L	0.03	-	-	2	-	<0.03	-	-	-	-	1	1	0
	Methylnaphthalene, 2-	µg/L	0.02	-	-	2	-	<0.02	-	-	-	-	1	1	0
	Naphthalene	µg/L	0.06	-	1.1	7	-	<0.06	-	-	-	-	1	1	0
	Phenanthrene	µg/L	0.03	-	0.4	0.03	-	<0.03	-	-	-	-	1	1	0
	Pyrene	µg/L	0.06	-	0.025	-	-	**<0.06**	-	-	-	-	1	1	0

5.3.2.5 Parameters of Potential Concern

The following parameters were identified as PoPCs in the PA receiving waters due to 75th percentile exceedance of PWQO and/or CWQG-FAL criteria:

- **Total phosphorus** – Total phosphorus (TP) had a 75th percentile value of 0.033 mg/L for watercourses and 0.020 mg/L for waterbodies, exceeding the respective PWQO criteria of 0.030 mg/L for watercourses and 0.020 mg/L for waterbodies. Exceedances of the PWQO were more frequent in the winter and early spring months, with TP concentrations decreasing throughout the spring before increasingly slightly in the summer and fall months. Jocko Creek watershed had a 75th percentile of 0.023 mg/L for all monitoring sites within the watershed. The North Driftwood watershed had a 75th percentile of 0.027 mg/L. TP concentrations were higher in the West Buskegau watershed, with a 75th percentile of 0.037 mg/L. In the regional dataset, TP was also identified as a PoPC, with over 70% of the samples exceeding the PWQO.

- **Aluminum** – For the assessment of aluminum, CWQG-FAL criteria was used to evaluate total aluminum and PWQO criteria (clay-free samples) used to evaluate dissolved aluminum. The 75th percentile value for dissolved aluminum exceeded the PWQO criteria of 75 µg/L for the 0.2 µm filtered samples with 75th percentile value of 107 µg/L in watercourses. In waterbodies, dissolved aluminum concentrations had a 75th percentile of 43 µg/L (0.2 µm filter). Dissolved aluminum concentrations were observed to be slightly higher in the fall and early winter, with the West Buskegau River watershed experiencing more substantial variation. Jocko Creek and North Driftwood River watersheds had similar dissolved aluminum (0.2 µm) values, with a 75th percentile of 75 µg/L and 86 µg/L, respectively. The West Buskegau River watershed had higher dissolved aluminum concentrations, with a 75th percentile of 133 µg/L. Similarly, the regional data had high levels of aluminum, with a total aluminum 75th percentile of 270 µg/L with local PA watercourses having a 75th percentile concentration of 418 µg/L.

- **Total Iron** – Total iron had a 75th percentile value of 800 µg/L in watercourses and 503 µg/L in waterbodies, exceeding both the CWQG-FAL and PWQO of 300 µg/L. A seasonal pattern was observed with total iron peaking in March, then decreasing in the spring and increasing slightly during the summer and fall months. The 75th percentile of total iron exceeded the CWQG-FAL and PWQO criteria for each watershed. The West Buskegau River watershed had overall higher concentrations of total iron with a 75th percentile of 1,075 µg/L. Jocko Creek and North Driftwood River watersheds had similar total iron concentrations, with a 75th percentile of 580 µg/L and 644 µg/L, respectively. In the regional watercourse dataset, total iron concentrations similarly were identified as a PoPC with a 75th percentile of 690 µg/L with ocal watercourses in the PA having a 75th percentile concentration of 800 µg/L.

5.3.2.6 Patterns and Trends

Water quality analysis was conducted to understand patterns and trends by water feature type, watershed, and seasonally.

When aggregating the data by water feature type, specifically watercourses (including streams, rivers, and creeks) and waterbodies (lakes and ponds), concentrations of the analyzed nutrients as well as metals and metalloids were observed to be lower in waterbodies than watercourses, with less exceedances of the respective criteria.

A general seasonal trend was observed within the local water quality dataset. Concentrations of parameters (total ammonia (as N), DOC, TP, metals and metalloids) would often be higher in the late fall and winter months and lower in the spring and summer months. Distinct seasonality was more prevalent in the watercourse sampling locations and fewer seasonal patterns were observed in the waterbody monitoring locations. However, this lack of observed seasonality in waterbodies may be due to fewer waterbody samples collected and analyzed from 2021 and 2023, with 75 samples in waterbodies compared to 242 samples in watercourses.

Overall, there were no substantial and consistent differences between water quality in the three watersheds, Jocko Creek, North Driftwood River, and West Buskegau. The 75th percentile values for each parameter were comparable across the three watersheds. It is important to consider that any differences between the water feature type (watercourses vs. waterbodies) influences the analysis of watershed grouping depending on the prevalence of the water feature type. More specifically, Jocko Creek and West Buskegau River watersheds have only one waterbody monitoring location in each watershed, whereas 12 waterbodies (six lakes and six ponds) are located in the North Driftwood watershed.

5.3.2.7 Field Duplicates

Field precision was determined by calculating the RPD between the collected field data and its blind field duplicate. The data quality objective (DQO) for field precision was met when the RPD between replicates was consistently within 20% and values are greater than five times the detection RDL, which is based on the MECP “Protocol for Analytical Methods Used in Assessment Under Part XV.1 of the Environmental Protection Act” (MOE 2011b) and British Columbia Ministry of Environment Field Sampling Manual (2013). An RPD greater than 50% indicates a definite sample integrity problem; however, it is not unusual to find high variability for the field duplicates. Appendix B.10 presents parent and field duplicate data and RPD values.

A total of 22 field duplicates were collected across 15 monitoring stations (five waterbodies and ten watercourses). There was a total of seven reported RPD exceedances greater than 20% with values greater than five times the detection RDL in lakes and a subset of two above 50% for the June 3, 2022 GERLK sample, batch WT2205034 (total zinc, total methyl mercury), which were in the non-duplicate sample used in the assessment. There were a total of 39 RPD exceedances greater than 20% with values greater than five times the detection RDL in watercourses with a subset of 10 above 50%. The nine watercourse sample parameters with RPD values above 50% and guideline values included

dissolved barium (JCRK-03), total barium (WBR-S-04 [July 2023]), dissolved Al (KC-01 [February 2023]), MATR-02 [October 2022]), dissolved Mn (MATR-02 [October 2022]), total Zn (NDRS-04), dissolved molybdenum (NDRS-04b), total Cu (NDRS-06 [May 2023]), dissolved methyl mercury (NDRS06 [November 2023]), and acidity (WBR-S-07) with the dissolved Al and total Cu results exceeding the PWQO value and the other parameters being below CCME CWQG-FAL and PWQO values. For the waterbodies and watercourses the values greater than 50% for RPD were removed from the statistical assessment dataset.

5.3.3 Local and Regional Water Quality Comparison

When comparing the local and regional water quality data, there are overall similarities for seasonal patterns as well as a number of PoPCs. Comparisons of water feature types between local and regional data were not possible as the six regional PWQMN monitoring stations are watercourses.

Both the regional and local water quality exhibited seasonal trends for a number of parameters. Concentrations of select parameters (total ammonium/total ammonia (as N), TP, aluminum, iron, lead, and zinc) would often be higher in the late fall and winter months and lower in the spring and summer months. The seasonality trends observed in the local water quality dataset, particularly the watercourse monitoring locations, were typically more distinct for a number of metals and metalloids compared to the regional data set.

Total phosphorous, dissolved (0.2 µm) and total aluminum and total iron, are considered PoPCs in both the local and regional water quality datasets, as discussed in Section 5.3.2.5. Additional PoPCs were identified in regional dataset, however were not considered PoPCs in the local data, including total arsenic, total cadmium, total cobalt, total copper, total lead, total silver and total zinc. The regional total arsenic watercourse 75th percentile concentration was 9 µg/L and 1 µg/L for local watercourses. Total cadmium in the regional data had a 75th percentile of 0.75 µg/L, exceeding both the PWQO of 0.2 µg/L and hardness dependent interim PWQO of 0.5 µg/L. In comparison, the local data had a 75th percentile of 0.042 µg/L in watercourses and over 50% of the samples in waterbodies were below the RDL (<0.005 µg/L). Total cobalt for the local watercourses had a 75th percentile value of 0.3 µg/L and 4.9 µg/L for regional watercourses. The regional data for total copper had a 75th percentile of 14.8 µg/L, exceeding both the PWQO of 5 µg/L and hardness dependent interim PWQO of 5 µg/L, whereas the local water quality data had a 75th percentile of 2.0 µg/L and did not exceed the criteria. The regional lead data had high fluctuations in RDL values that exceeded the CWQG-FAL and PWQO values with 152 of 191 observed concentrations exceeding the guideline values, and the local watercourse had a 75th percentile value of 0.54 µg/L. For total zinc, the regional data had a 75th percentile of 30 µg/L, which exceeds the PWQO lower limit of 20 µg/L. Comparatively, the local data had a 75th percentile of 8 µg/L for total zinc and was not considered to be a PoPC.

To understand the range of natural variability of water quality, a 95th percentile value was calculated for both the local and regional datasets, and a 5th percentile value for pH and dissolved oxygen which have lower limit guidelines. Greater variability was typically present in the regional dataset for general chemistry, nutrient, and metal and metalloid parameters, potentially due to the longer monitoring period. Total aluminum, TSS and DOC had higher 95th percentile local watercourse values than the regional dataset, but were the same order of magnitude. The natural variability of the regional water quality data captured the observed results of the local water quality data.

6 Summary and Conclusions

This report describes the climate, hydrology and water quality conditions in the watersheds potentially affected by the proposed project. Field work and desktop analyses were conducted.

Field work included the hydrometric monitoring program, conducted by WSP Golder, Stantec and Canada Nickel staff. A total of 6 stations were monitored for stage and discharge in 2021 with two field assessments, 10 sites in 2022 (one of which is a lake station to monitor stage) with quarterly monitoring when available, and 10 sites in 2023 (one of which is a lake station to monitor stage) with monthly monitoring when safe to do so. Solinst Leveloggers® are installed at each station to monitor continuous water levels. Manual flow measurements under wadable conditions were conducted using either a Marsh-McBirney Flo-Mate 2000 with a topset wading rod or a FlowTracker2 (2021 to 2022). In 2023, all wadable flow measurements were captured with a FlowTracker2. During high flow events. Either the Sontek M9 current profiler or the USGS Type AA Current Meter were utilized for data collection (2021 to 2022). In 2023, only the Sontek M9 is used during high flow events.

Desktop analysis included a climate and climate change assessment, a regional hydrological assessment, an environmental water balance and the development of a hydrological model. The climate and climate change assessment characterized temperature, rainfall, and snowfall at the site and into the future of the site. The regional assessment provided regression equations that allowed for the determination of mean annual water flows, monthly flows, peak flows, IDFs, baseflows and runoff coefficients, and flow duration curves.

To analyze and describe water quality conditions in the Project Area, a regional and local water quality assessment was conducted. Regional water quality data was obtained from seven monitoring stations in the PWQMN. Local water quality samples were collected from 2021 to 2023 by WSP Golder (2021, 2022, 2023) and Canada Nickel staff (2023) at a total of 33 watercourse locations and 13 waterbody locations across three main watersheds, Jocko Creek, North Driftwood River, and West Buskegau River watersheds. To facilitate data analysis and discussion, results were assessed by grouping monitoring stations located in waterbodies and watercourses. Monitoring locations were also aggregated by watershed and were assessed for water quality relationships of water feature type, watershed, and seasonality.

6.1 Hydrology

The information presented in this baseline report is intended to summarize the existing hydrologic conditions relevant to the Project in support of preparation of the Impact Statement with the following conclusions:

- General site topography is relatively flat, with an average topographic slope of 1.7%. Channel slope of the watersheds range between 0.05% – 0.11%. The site area is primarily covered by mixed and coniferous forests, and approximately a quarter of the area is comprised of swamps and bogs.

- Three major watersheds make up the study area. The Jocko Creek watershed was determined to have a total area of 109.6 km^2 draining to the Mattagami River. The North Driftwood River watershed has a total area of 383.3 km^2. Lastly the West Buskegau River watershed is found to be 524.1km^2. The West Buskegau and North Driftwood watersheds drain to the Abitibi River. All rivers ultimately confluence with the Moose River with an ultimate discharge into James Bay
- Local water users include a record of more than 60 groundwater wells, and an OPG operated hydroelectric dam on the Mattagami River downstream from the Project site on Jocko Creek.
- Based on the developed 1991 – 2020 climate normal using an ensemble of ECCC climate station data from Timmins, ON, climate normal temperatures ranged from -16.4ºC in January to 17.6ºC in July with an annual average of 2.0°C. Temperatures drop below freezing in November and remain in freezing through March. The annual climate normal period total precipitation is 801.8 mm with a monthly high total precipitation of 86.1 mm during October. Based on the 1981 – 2010 climate normal, snow is typically present from November until May, with on average greatest snow depths in February (64 cm) and average minimal amount of snow in May (1 cm)
- Climate change predictions for the 2071 – 2100 period to capture the project temporal scale for the SSP2-4.5 emission scenario estimated an average annual temperature increase of +3.7ºC, with a +5.3ºC increase during winter months (January – March) relative to the 1971-2000 climate normal. The 2071 – 2100 SSP2-4.5 emission scenario climate normal annual total precipitation is estimated to be 914.5 mm.
  - The climate adjusted IDF curves estimated precipitation amounts for storms of various durations and event return periods to increase by an average of 22.7% for the SSP2-4.5 emissions scenario for the 2071 – 2100 time period.
- A regional hydrological assessment was performed to assist in the development of hydrological relationships for understanding flows and hydrology at the Project site.
  - The baseflow index was calculated for each WSC station with an annual regional average of 30%, increasing to 59% during winter months. Runoff coefficient for the regional station sites ranged from 0.38 – 0.51.
  - Flows typically peak in May and are at the lowest in February.
  - Regression relationships for determining flood flows by catchment area size were developed with coefficient of determination values ranging from 0.76 to 0.82.
  - Low and environmental flows were characterized using the Tessman method. The 30% MAD was estimated for each of the Project watersheds.

- An environmental water balance for the PA using the USGS Thornthwaite methods was developed for 1991-2020 climate normal, wettest recorded year and driest recorded year. The climate normal, driest and wettest year annual actual evapotranspiration is estimated to be 473 mm, 453 mm and 510 mm, respectively. The climate normal total groundwater recharge (infiltration) estimated for the project site is 164.1 mm/year, which is 28.7% of the total precipitation amount. The climate normal total stream flow estimate of 328.2 mm represents a streamflow (runoff) coefficient of 41%.

- Hydrometric monitoring was conducted from 2021 to 2023 at 11 stations, including two stations performing lake level monitoring. *In situ* flow measurement results, rating curves, and station hydrographs for each applicable station were developed and presented. Hydrometric flow station watershed areas ranged from 7.2 to 199 km^2. A minimum of four ice-free condition *in situ* flow measurements were used to develop rating curves at seven of the nine watercourse hydrometric stations. The data collected allowed for the development of station specific rating curves at seven flow monitoring stations (except for SW-1 and SW-3).

- Bathymetric assessments were conducted on site specific lakes. Mean depth of site lakes ranges between 2.5 m and 7.9 m below water surface. Maximum site lake depths range between 11.0 m and 22.0 m below water surface.

- The development of hydrological model (HEC-HMS) of the three site watersheds was developed and calibrated using prorated flows from a nearby WSC HYDAT station (Porcupine River at Hoyle, # 04MD004). The developed model was able to represent baseflows, spring freshet flow peaks, and adequately represented precipitation events recorded.

6.2 Surface Water Quality

The information presented in this baseline report is intended to summarize the existing surface water quality conditions relevant to the Project in support of preparation of the Impact Statement with the following conclusions:

- Three parameters were identified as Project Area parameters of potential concern (PoPCs) where 75th percentile values exceed the corresponding PWQO and/or CWQG-FAL guideline. Total phosphorus (TP) had a 75th percentile value of 0.032 mg/L for watercourses and 0.021 mg/L for waterbodies. PWQO values for TP are 0.033 mg/L and 0.020 mg/L for watercourses and waterbodies, respectively and was therefore identified as a PoPC. For the assessment of aluminum, CWQG-FAL criteria was used to evaluate total aluminum and PWQO criteria (clay-free samples) used to evaluate dissolved aluminum. The 75th percentile value for dissolved aluminum exceeded the PWQO criteria of 75 µg/L for the 0.2 µm filtered samples with a value of 107 µg/L, respectively in watercourses. Total iron is identified as a PoPC as the 75th percentile values of both the watercourses and waterbodies exceed the CWQG-FAL and PWQO of 300 µg/L.

- Other metals and metalloids that reported at least one exceedance of the applicable guideline values as part of the local watercourse and waterbody monitoring program include: total cadmium, total cobalt, total copper, total lead, dissolved manganese, mercury, total selenium, total silver, total zinc and total zirconium.
- Regional water quality data identified additional PoPCs that were not observed in the local data and are not considered PoPCs in the Project Area were total arsenic, total cadmium, total cobalt, total copper, total lead, total silver and total zinc.
- Local general water quality in the watercourses and waterbodies identified slightly acidic conditions with 25th percentile values below the CWQG-FAL and PWQO lower limit (6.5). Alkalinity is relatively low with limited acid buffering potential. Waters within the Project Area are typically classified as medium hard with soft waters in the Jocko Creek and West Buskegau watersheds.
- Overall, there were no substantial and consistent differences between the three watersheds, Jocko Creek, North Driftwood River, and West Buskegau, with each watershed having comparable 75th percentile values for the analyzed parameters.
- When aggregating the data by water feature type, specifically watercourses (including streams, rivers, and creeks) and waterbodies (lakes and ponds), concentrations of the analyzed nutrients, metals and metalloids were observed to be lower in waterbodies than watercourses, with fewer exceedances of the respective guidelines.
- Both the regional and local water quality exhibited seasonal trends for various parameters. Concentrations of parameters were typically higher in the late fall and winter months and lower in the spring and summer months (total ammonium/total ammonia (as N), TP, aluminum, iron, lead and zinc). A slightly more distinct seasonality was observed in the local water quality dataset, particularly the watercourse monitoring locations and for additional metals and metalloids.
- Greater variability was generally present in the regional dataset 95th percentile value and 5th percentile value for dissolved oxygen and pH, potentially due to the longer sampling period. Total aluminum, TSS and DOC had higher 95th percentile local watercourse values than the regional dataset, but were the same order of magnitude. The natural variability of the regional water quality data captured the observed results of the local water quality data.
- Six lakes had temperature and dissolved oxygen profiles measured at regular intervals and during the summer and early fall months in 2022 to 2023, which were observed to be thermally stratified with low oxygen to anoxic hypolimnions.

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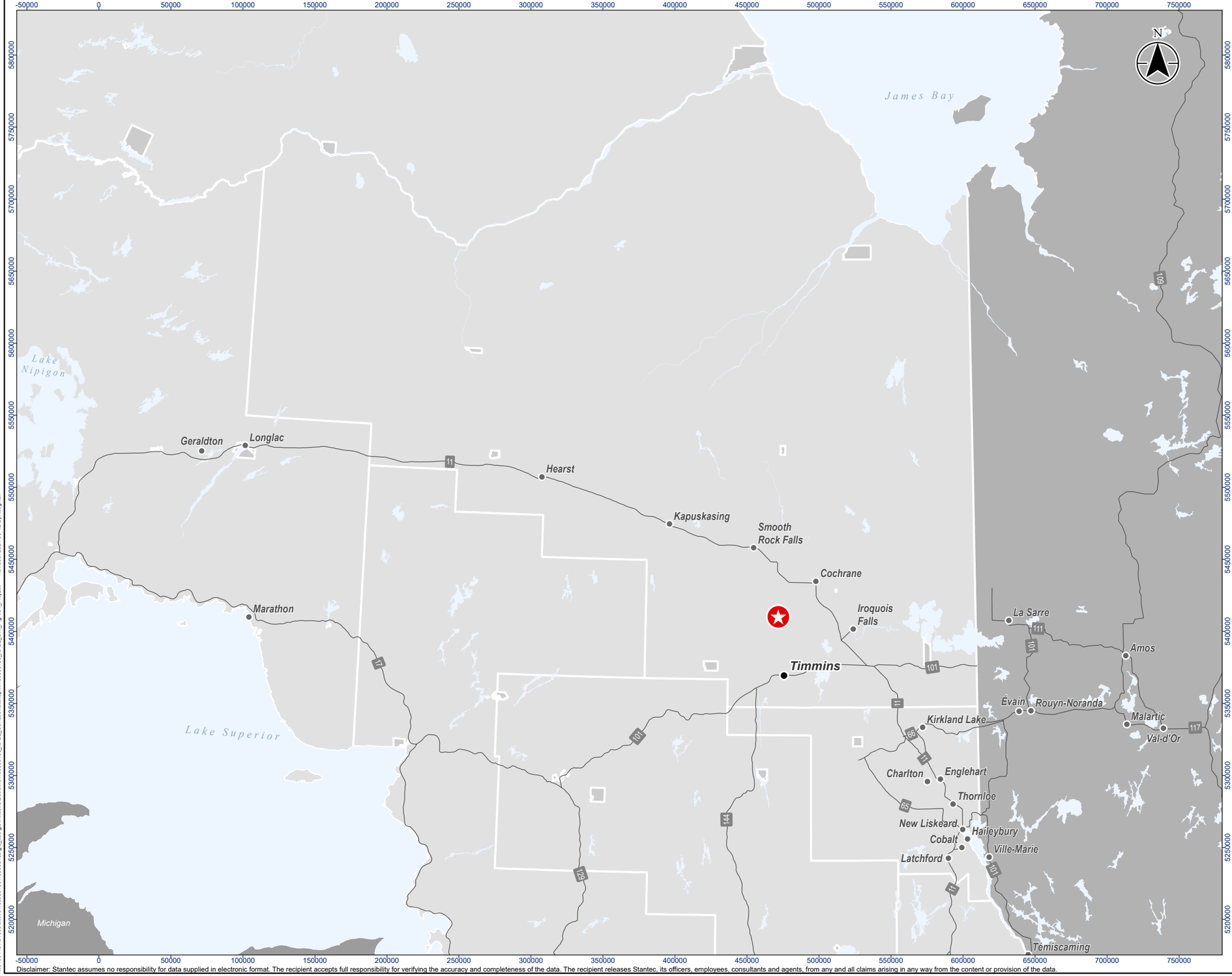
Appendices

Appendix A Figures



Stantec

Legend

- Project Location
- Major Road
- Waterbody

0 50 100 km

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Notes

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Project Location
Timmins, Ontario

160930456 REVA
Prepared by tcoghlan on 2024-09-12

Client/Project
Canada Nickel Company (CNC)
Crawford Nickel Project

Figure No.
A.1

Title
Project Location

\\cd1004-f01\01609\active\160930456\160930456gis_cad\gis\mxd\ISBaseline\160930456_IS-BL_Surfacewater.aprx\160930456_IS-BL_SW_Fig A.01_ProjLoc Revised: 2024-09-12 By: tcoghlan

Stantec

CANADA NICKEL COMPANY

Legend

- Project Area
- Local Study Area
- Regional Study Area

Base Features

- Expressway / Highway
- Major Road
- Minor Road
- Railway
- Watercourse
- Municipal Boundary - Lower Tier
- Waterbody

0 5 10 km

1:400,000 (At original document size of 11x17)

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Client/Project
Canada Nickel Company (CNC)
Crawford Nickel Project

Figure No.
A.2

Title
Surface Water Spatial Boundaries

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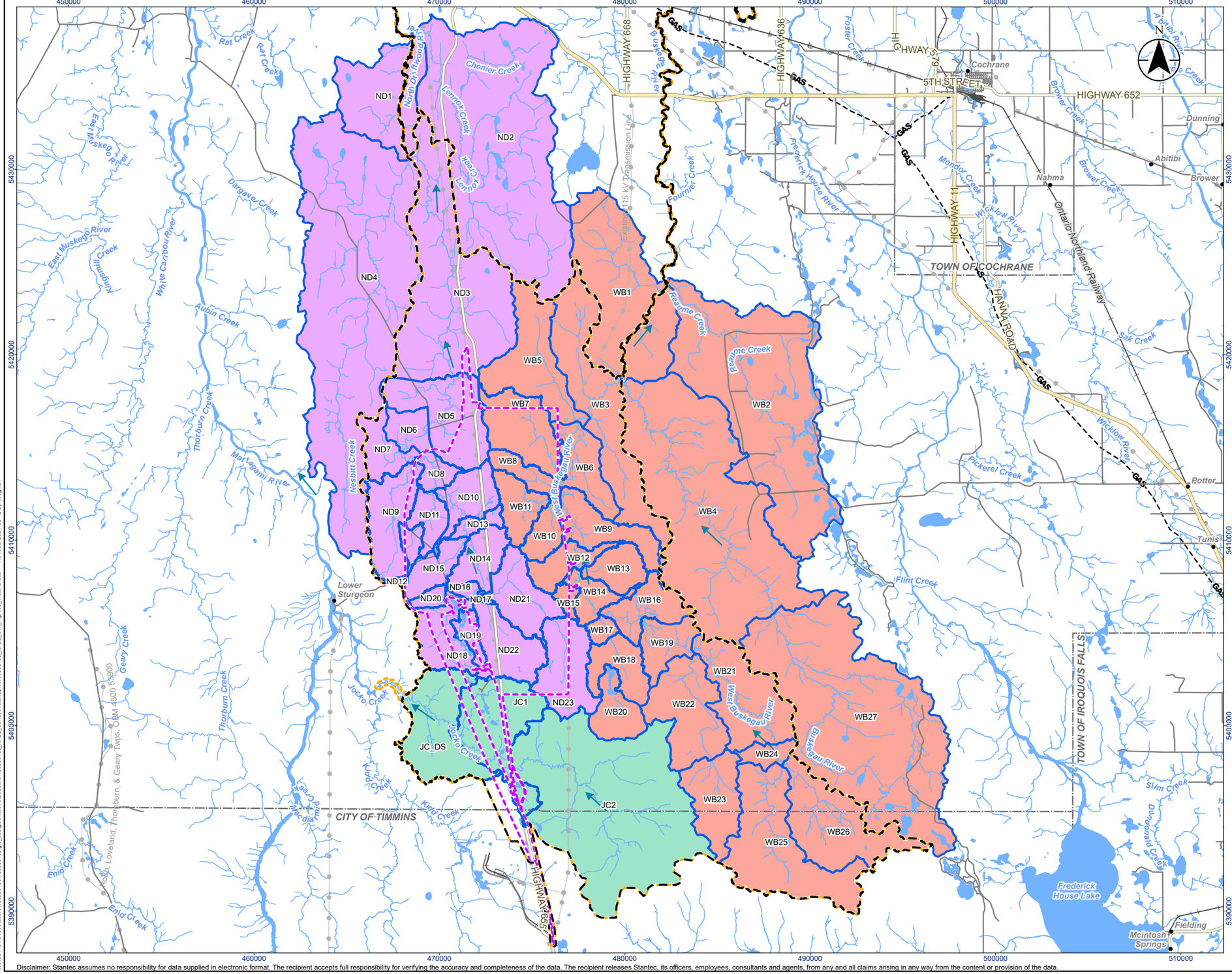

Legend

- Project Area
- Local Study Area
- Regional Study Area

Base Features

- Expressway / Highway
- Major Road
- Minor Road
- Railway
- Existing Transmission Line
- GAS Natural Gas Pipeline
- Watercourse
- Municipal Boundary - Lower Tier
- Waterbody
- Sub Watershed
- Jocko Creek Watershed
- North Driftwood River Watershed
- West Buskegau River Watershed
- Watercourse Flow Direction

0 5 10 km

1:210,000 (At original document size of 11x17)

Notes

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Client/Project
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Crawford Nickel Project

Figure No.
A.3

Title
Project Area Watersheds and Subwatersheds

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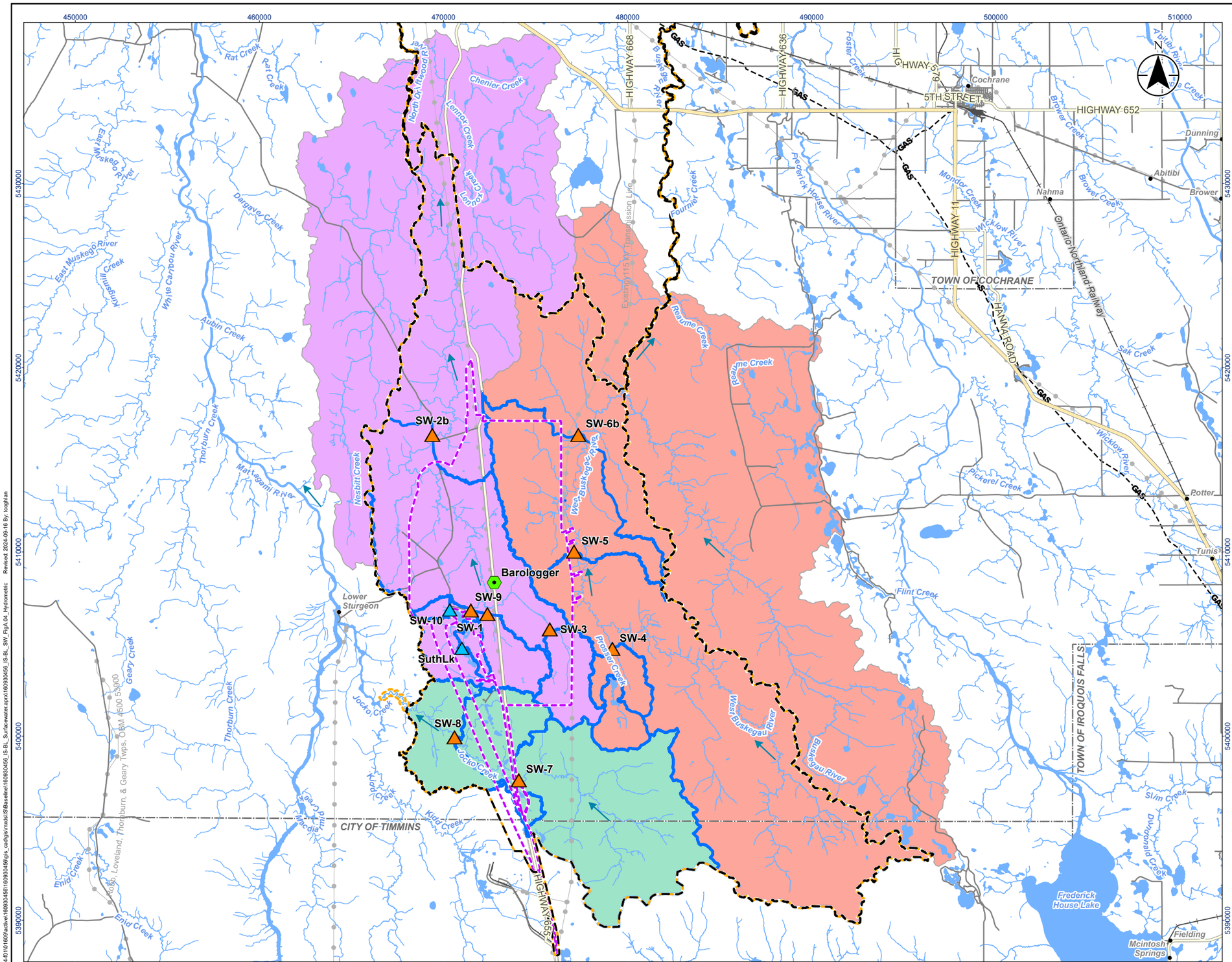

Stantec

CANADA NICKEL COMPANY

Legend

- Project Area
- Local Study Area
- Regional Study Area

Base Features

- Expressway / Highway
- Major Road
- Minor Road
- Railway
- Existing Transmission Line
- GAS - Natural Gas Pipeline
- Watercourse
- Waterbody
- Municipal Boundary - Lower Tier
- Barologger
- Hydrometric Station
- Lake Level Monitoring Station
- Hydrometric Station Subwatershed
- Jocko Creek Watershed
- North Driftwood River Watershed
- West Buskegau River Watershed
- Watercourse Flow Direction

0 5 10 km

1:210,000 (At original document size of 11x17)

Notes

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Figure No.
A.4

Title
Hydrometric Monitoring Stations

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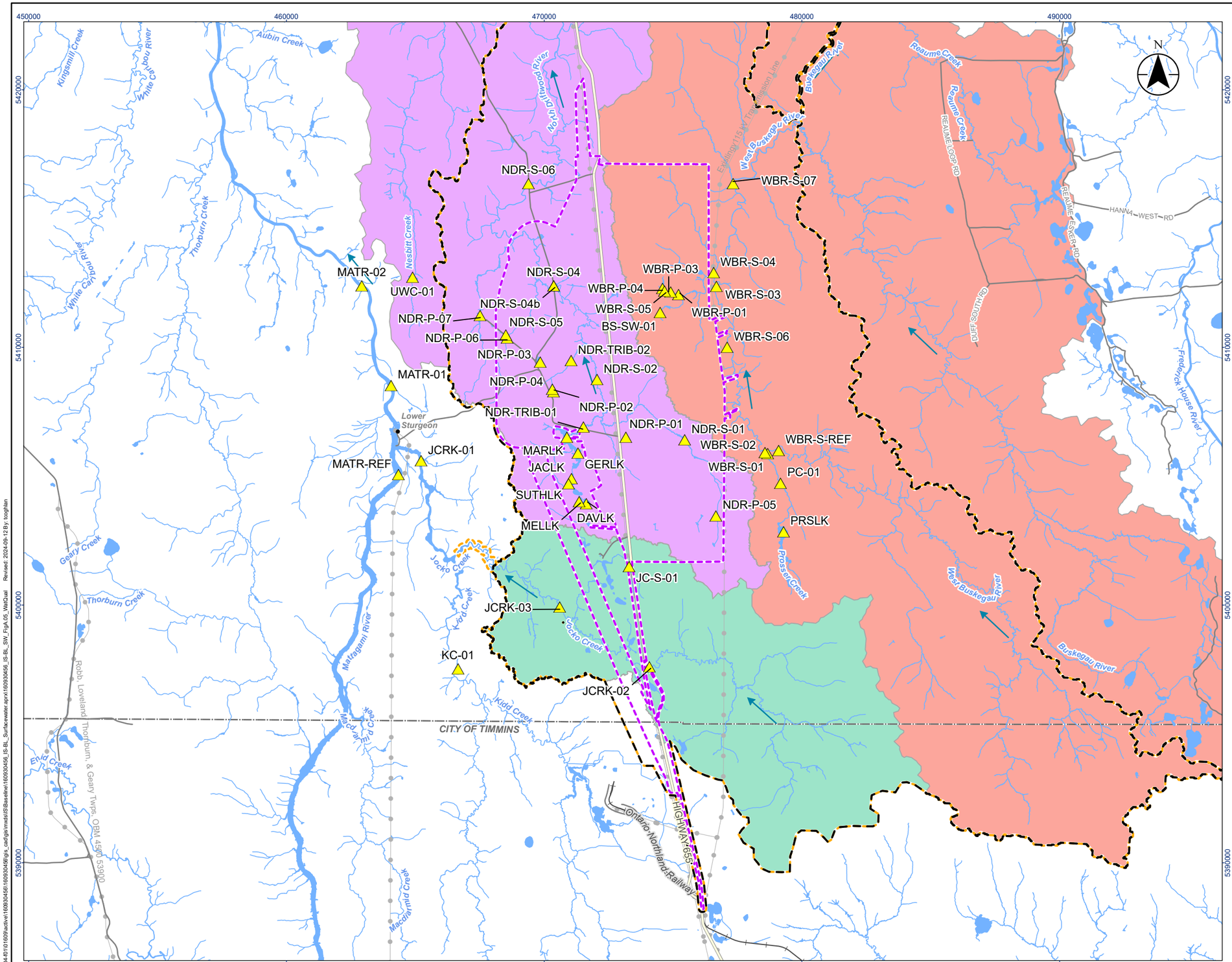

Stantec

CANADA NICKEL COMPANY

Legend

- Project Area
- Local Study Area
- Regional Study Area

Base Features

- Major Road
- Minor Road
- Railway
- Existing Transmission Line
- Watercourse
- Waterbody
- Municipal Boundary - Lower Tier
- Local Water Quality Monitoring Stations
- Jocko Creek Watershed
- North Driftwood River Watershed
- West Buskegau River Watershed
- Watercourse Flow Direction

0 5 10 km

1:150,000 (At original document size of 11x17)

Notes

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Figure No.
A.5

Title
Local Surface Water Quality Monitoring Stations

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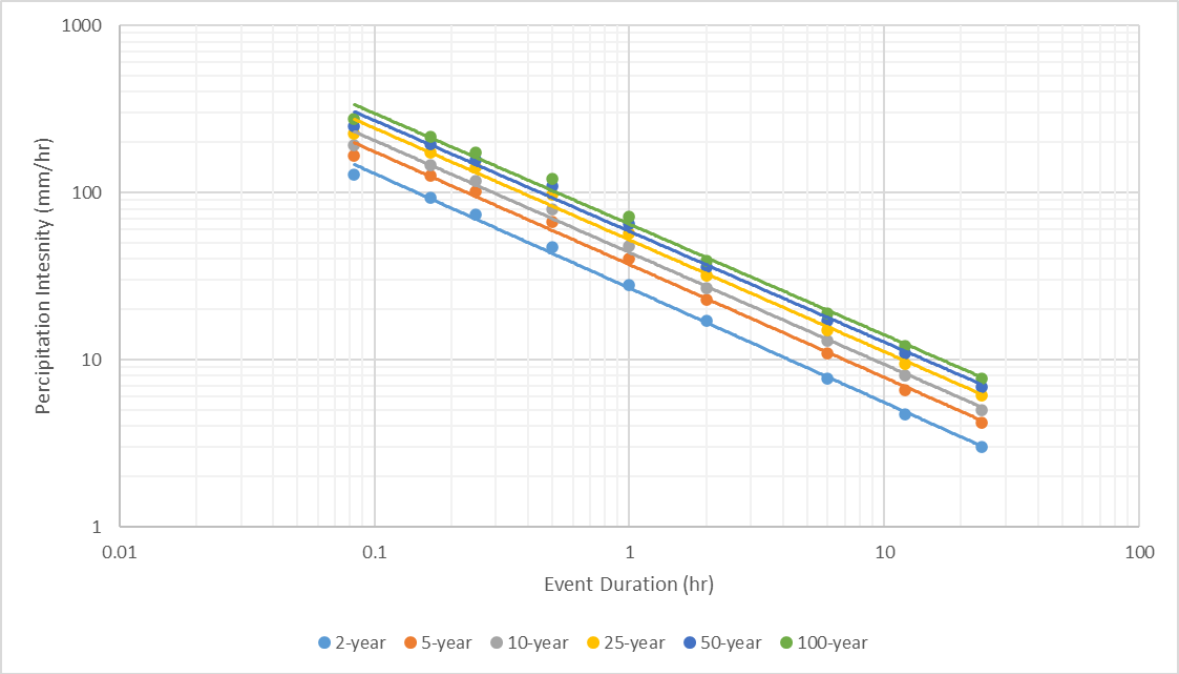
Figure A.6 Predicted IDF Curve at Timmins Climate Station – SSP5-8.5, Projection Period 2071-2100



Source: Climatedata.ca 2024

Figure A.7 Minimum and Maximum Annual Flow Regression

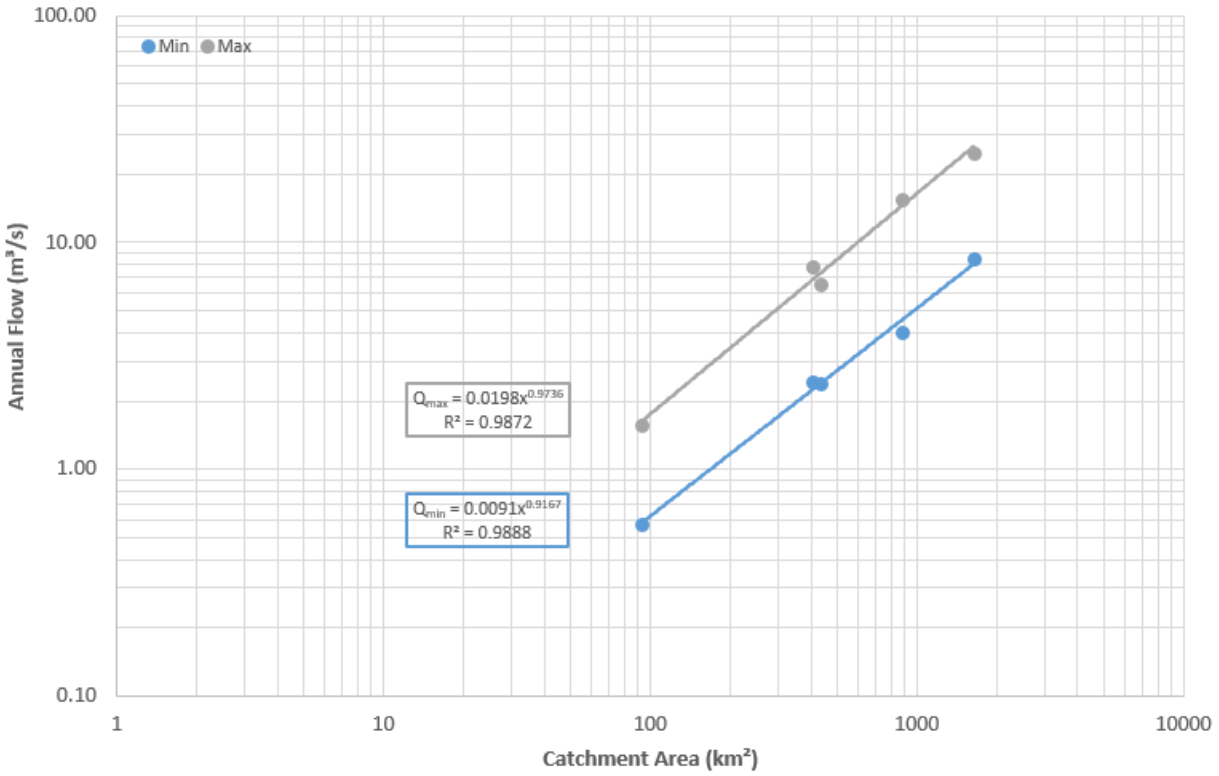


Figure A.8 Regional Station Maximum Monthly Flows

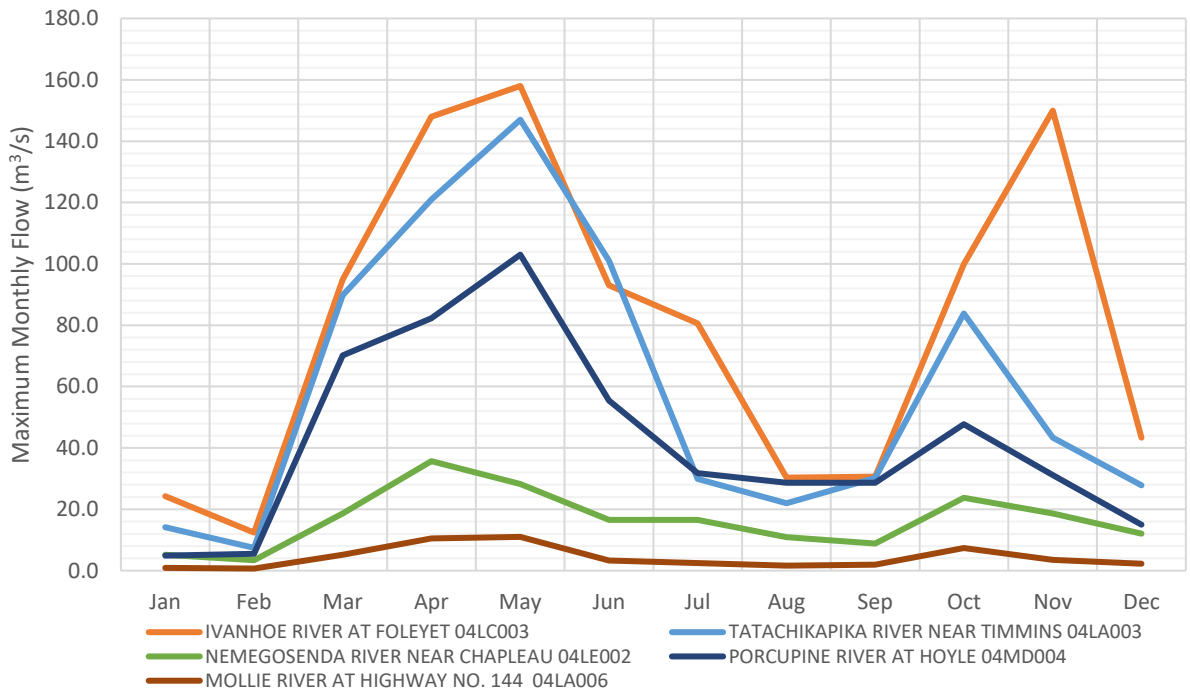
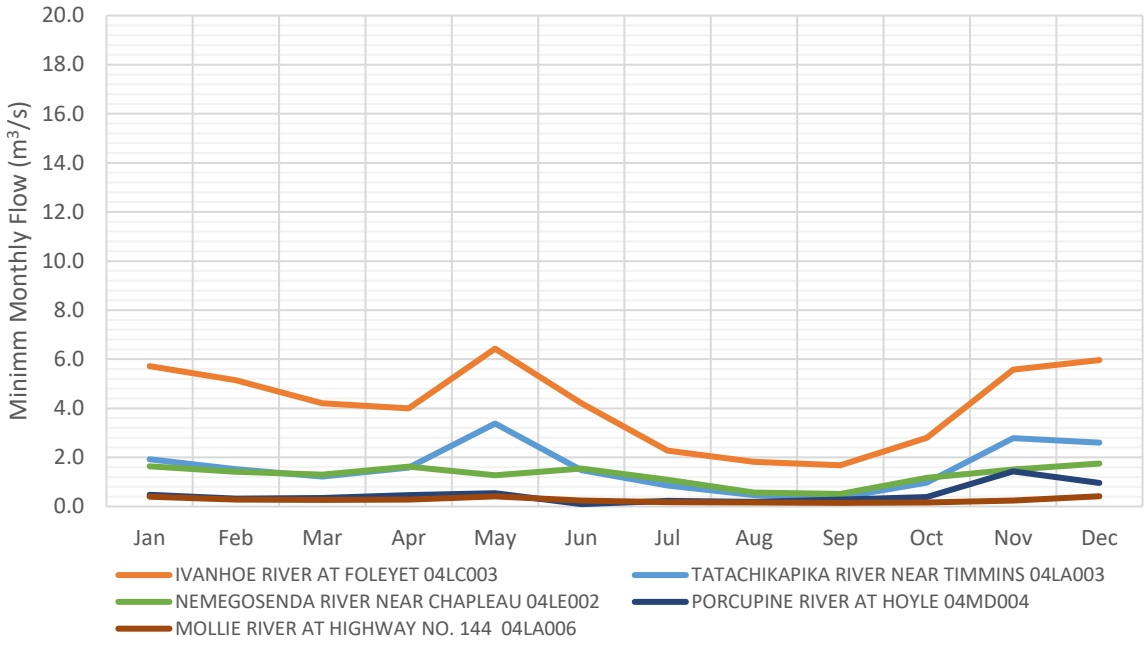
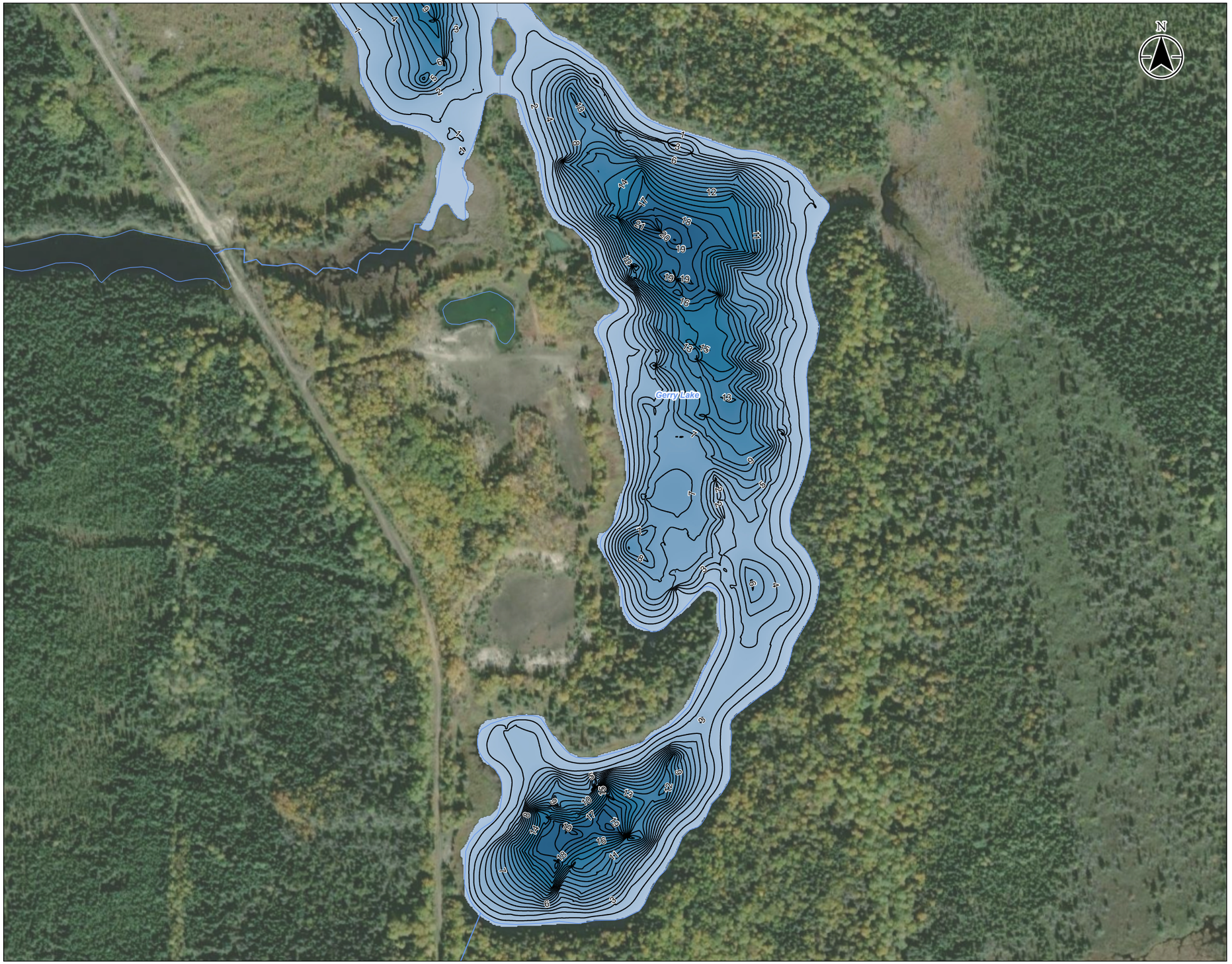


Figure A.9 Regional Stations Minimum Monthly Flow





Stantec

CANADA NICKEL COMPANY

Legend

- Bathymetric Contour (1 m Intervals)
- Waterbody
- Watercourse

0 110 220 Meters

1:3,700 (At original document size of 11x17)

Notes

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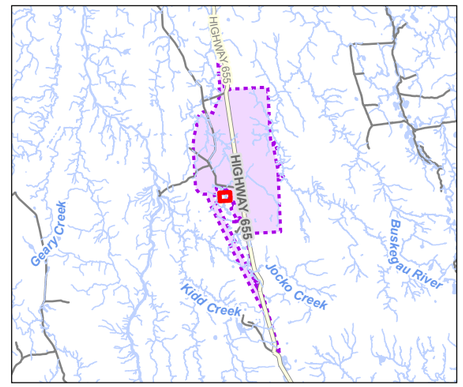

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Figure No.
A.10

Title
Gerry Lake Bathymetry

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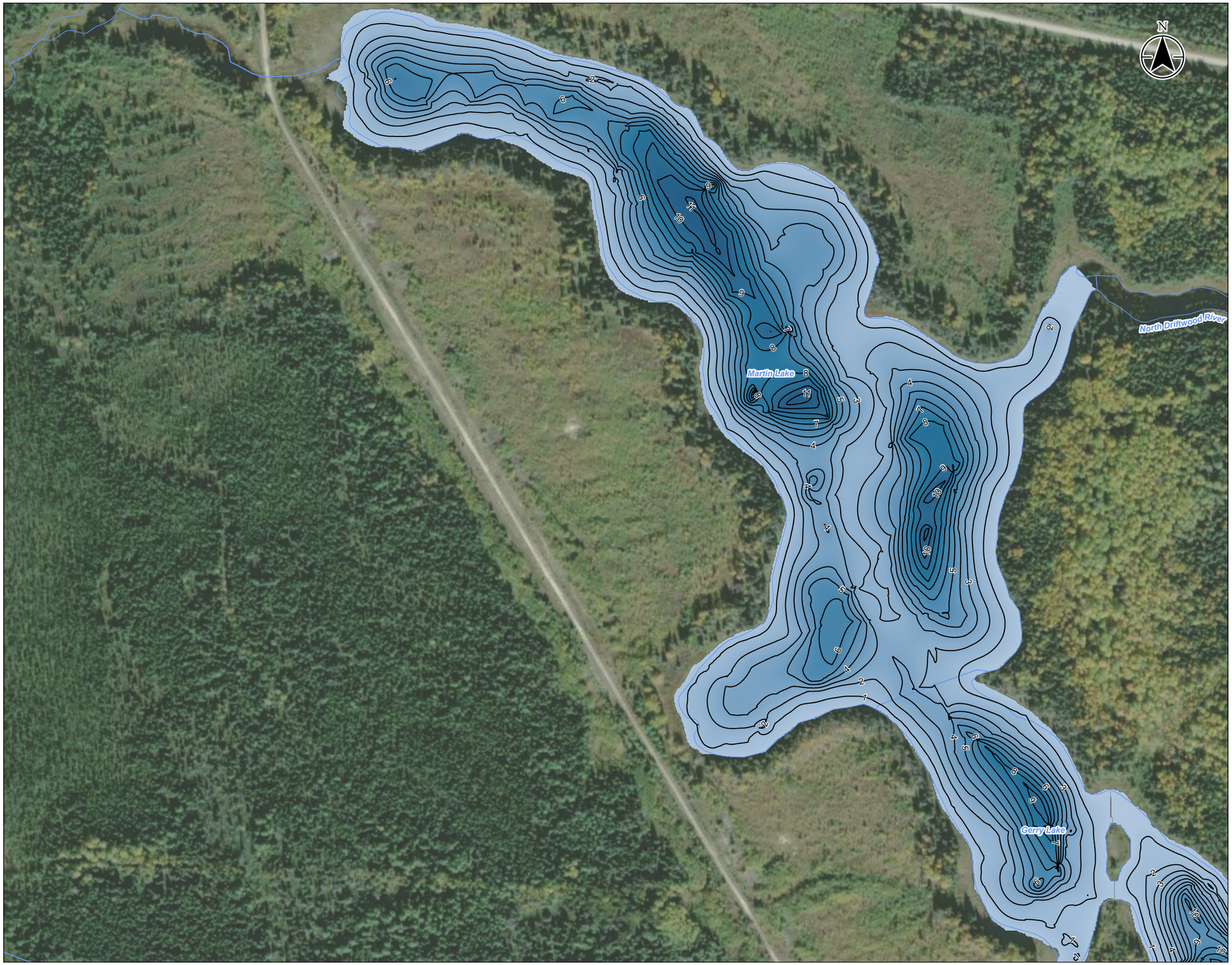

Stantec

CANADA NICKEL COMPANY

Legend

- Bathymetric Contour (1 m Intervals)
- Waterbody
- Watercourse

0 110 220 Meters

1:3,700 (At original document size of 11x17)

Notes

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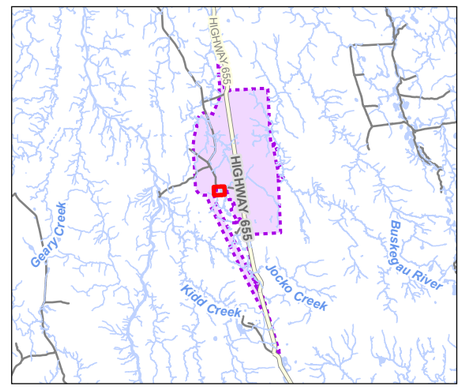

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Timmins, Ontario

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Figure No.
A.11

Title
Martin Lake Bathymetry

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Stantec

CANADA NICKEL COMPANY

Legend

- Bathymetric Contour (1 m Intervals)
- Waterbody
- Watercourse

0 110 220 Meters

1:3,700 (At original document size of 11x17)

Notes

1. Coordinate System:NAD 1983 UTM Zone 17N
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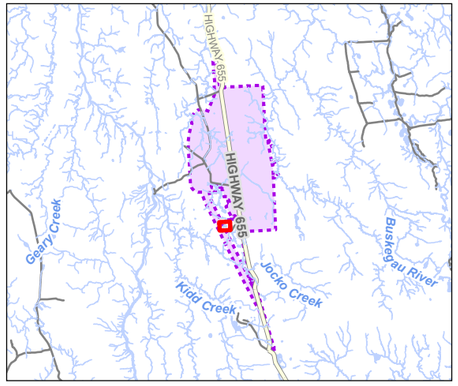

Project Location
Timmins, Ontario

160930456 REVA
Prepared by tcoghlan on 2024-09-12

Client/Project
Canada Nickel Company (CNC)
Crawford Nickel Project

Figure No.
A.12

Title
Zed Lake Bathymetry

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Stantec

CANADA NICKEL COMPANY

Legend

- Bathymetric Contour (1 m Intervals)
- Waterbody
- Watercourse

0 110 220 Meters

1:3,700 (At original document size of 11x17)

Notes

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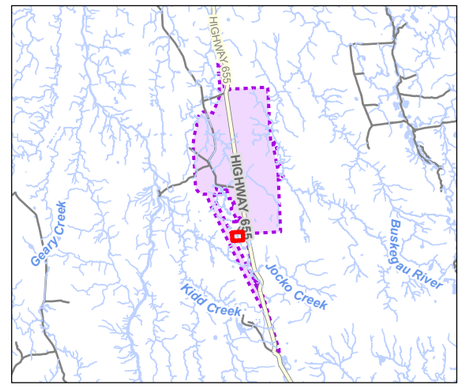

Project Location
Timmins, Ontario

160930456 REVA
Prepared by tcoghlan on 2024-09-12

Client/Project
Canada Nickel Company (CNC)
Crawford Nickel Project

Figure No.
A.13

Title
Unnamed Lake South of Zed Lake Bathymetry

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470000

470000

Stantec

CANADA NICKEL COMPANY

Legend

- Bathymetric Contour (1 m Intervals)
- Waterbody
- Watercourse

0 110 220 Meters

1:3,700 (At original document size of 11x17)

Notes

1. Coordinate System:NAD 1983 UTM Zone 17N
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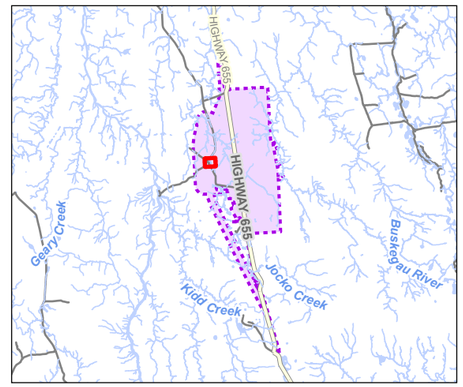

Project Location
Timmins, Ontario

160930456 REVA
Prepared by tcoghlan on 2024-09-12

Client/Project
Canada Nickel Company (CNC)
Crawford Nickel Project

Figure No.
A.14

Title
Unnamed Lake - Ore Stockpile Bathymetry

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Stantec

CANADA NICKEL COMPANY

Legend

- Bathymetric Contour (1 m Intervals)
- Waterbody
- Watercourse

0 110 220 Meters

1:3,700 (At original document size of 11x17)

Notes

1. Coordinate System:NAD 1983 UTM Zone 17N
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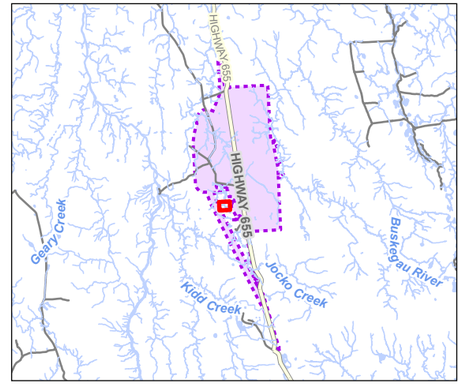

Project Location
Timmins, Ontario

160930456 REVA
Prepared by tcoghlan on 2024-09-12

Client/Project
Canada Nickel Company (CNC)
Crawford Nickel Project

Figure No.
A.15

Title
Sutherland Lake Bathymetry

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\\cd1004-01\01\160930456\active\160930456\gis_cad\gis\mxds\ISBaseline\160930456_IS-BL_Surfacewater.aprx\160930456_IS-BL_SW_Fig A.15-17_Bathymetry Revised: 2024-09-12 By: tcoghlan

Stantec

CANADA NICKEL COMPANY

Legend

- Bathymetric Contour (1 m Intervals)
- Waterbody
- Watercourse

0 110 220 Meters

1:3,700 (At original document size of 11x17)

Notes

1. Coordinate System:NAD 1983 UTM Zone 17N
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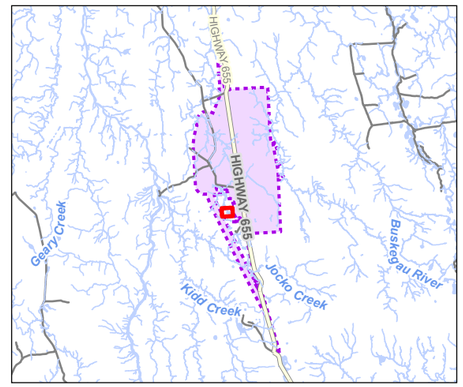
3. Orthoimagery: Maxar



Project Location
Timmins, Ontario

160930456 REVA
Prepared by tcoghlan on 2024-09-12

Client/Project
Canada Nickel Company (CNC)
Crawford Nickel Project

Figure No.
A.16

Title
Mel Lake Bathymetry

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\\cd1004-01\01\160930456\active\160930456\gis_cad\gis\mxds\ISBaseline\160930456_IS-BL_Surfacewater.aprx\160930456_IS-BL_SW_FigA.1to17_Bathymetry Revised: 2024-09-12 By: tcoghlan

Stantec

CANADA NICKEL COMPANY

Legend

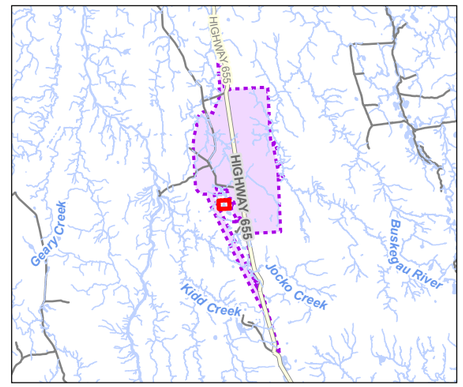
- Bathymetric Contour (1 m Intervals)
- Waterbody
- Watercourse

0 110 220 Meters

1:3,700 (At original document size of 11x17)

Notes

1. Coordinate System:NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © King's Printer for Ontario, 2023.
3. Orthoimagery: Maxar



Project Location
Timmins, Ontario

160930456 REVA
Prepared by tcoghlan on 2024-09-12

Client/Project
Canada Nickel Company (CNC)
Crawford Nickel Project

Figure No.
A.17

Title
Jack Lake Bathymetry

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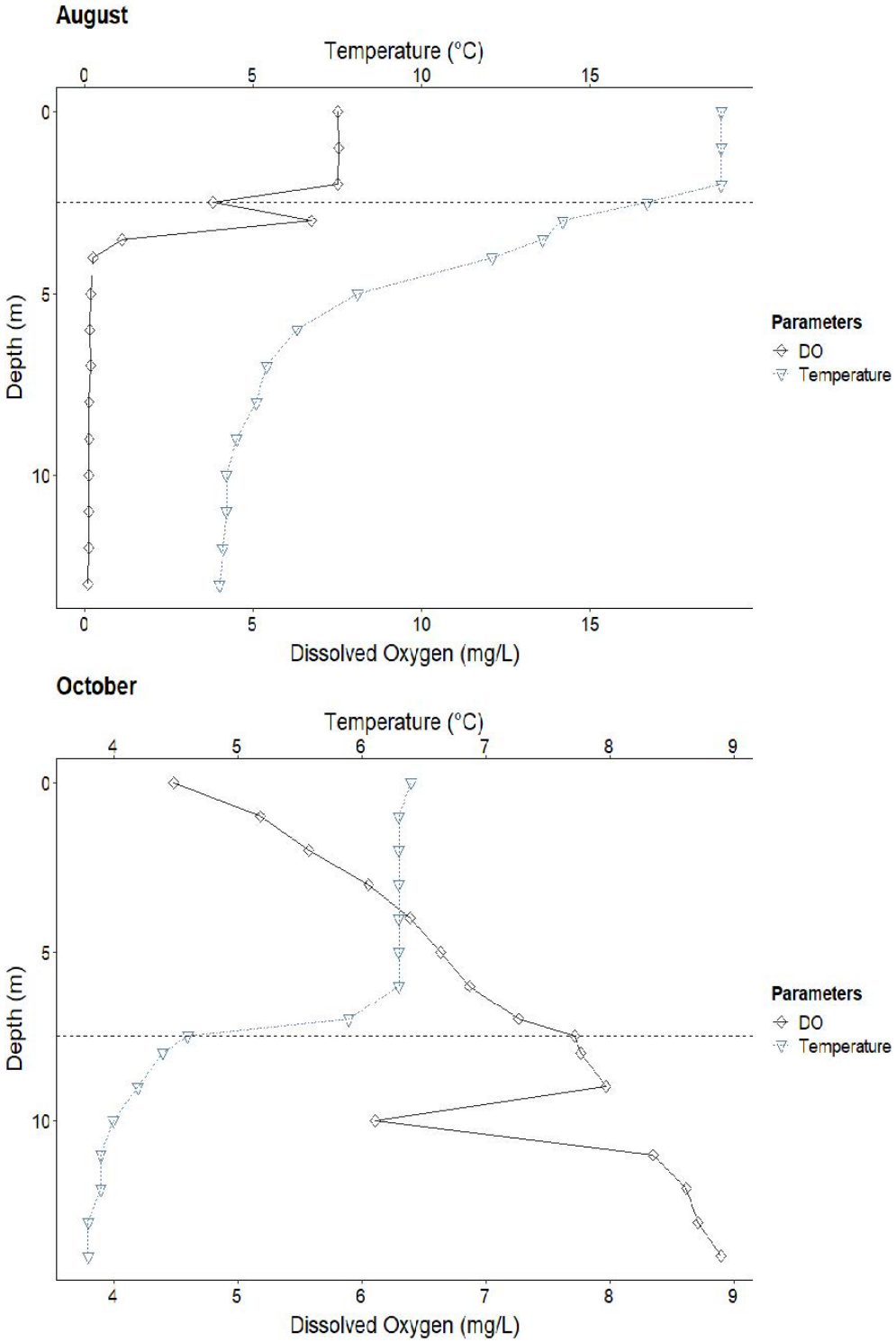


Figure A-18.1: Temperature-DO Profiles for Gerry Lake in August and October 2022 (WSP 2024)

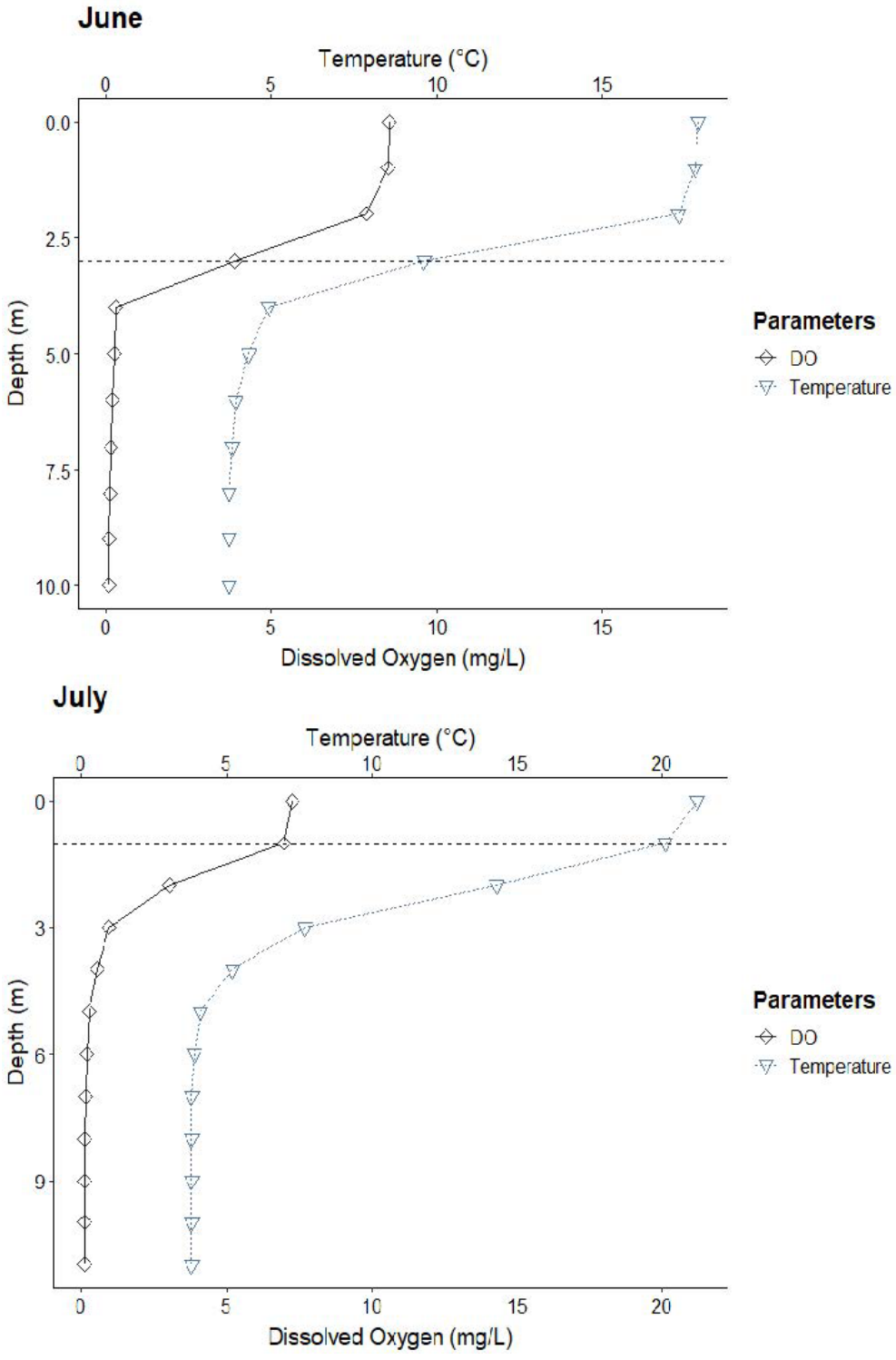


Figure A-18.1: Temperature-DO Profiles for Gerry Lake in June and July 2023 (WSP 2024)

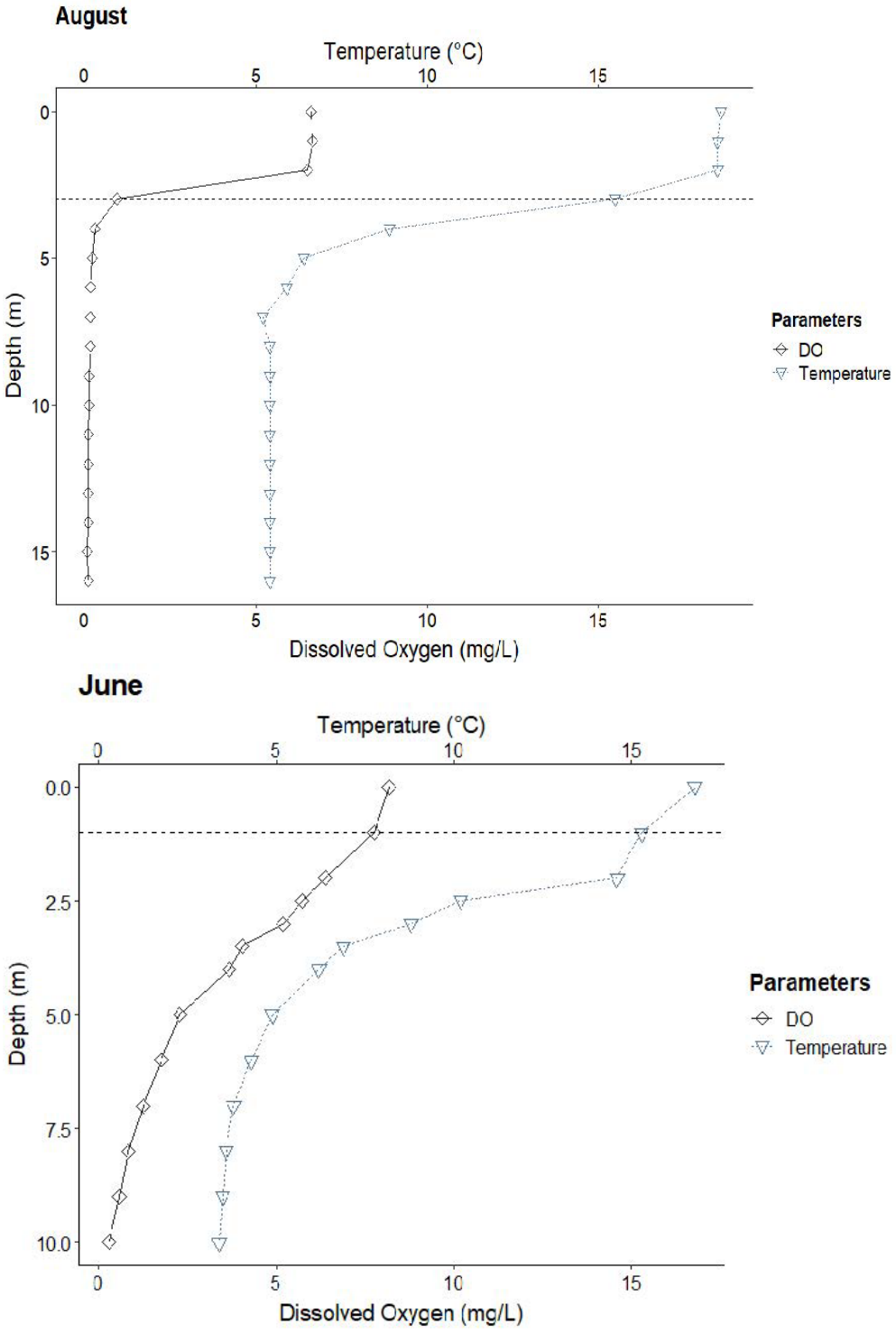


Figure A-18.2: Temperature-DO Profiles for Martin Lake in August 2022 and June 2023 (WSP 2024)

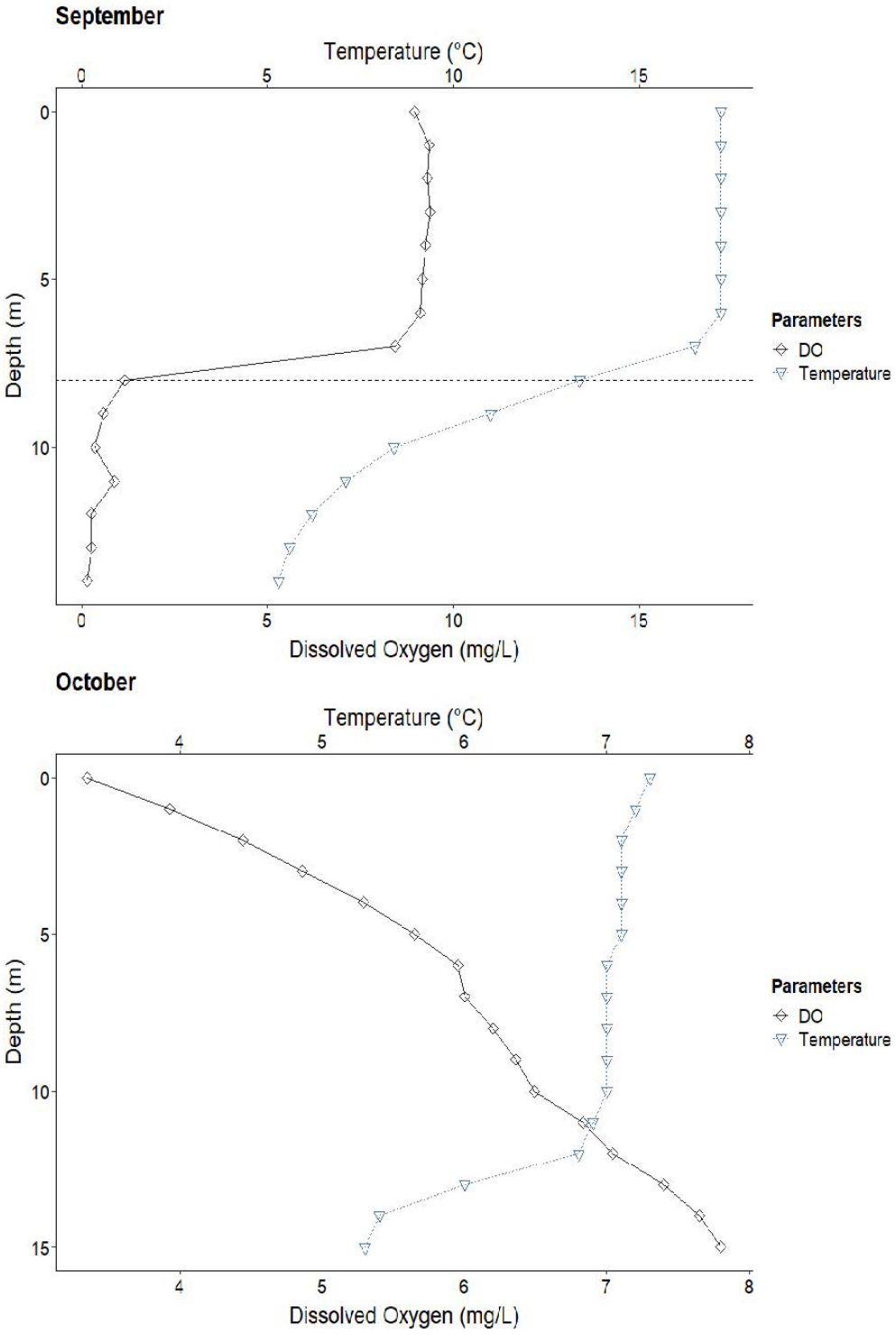


Figure A-18.3: Temperature-DO Profiles for Jack Lake in September and October 2022 (WSP 2024)

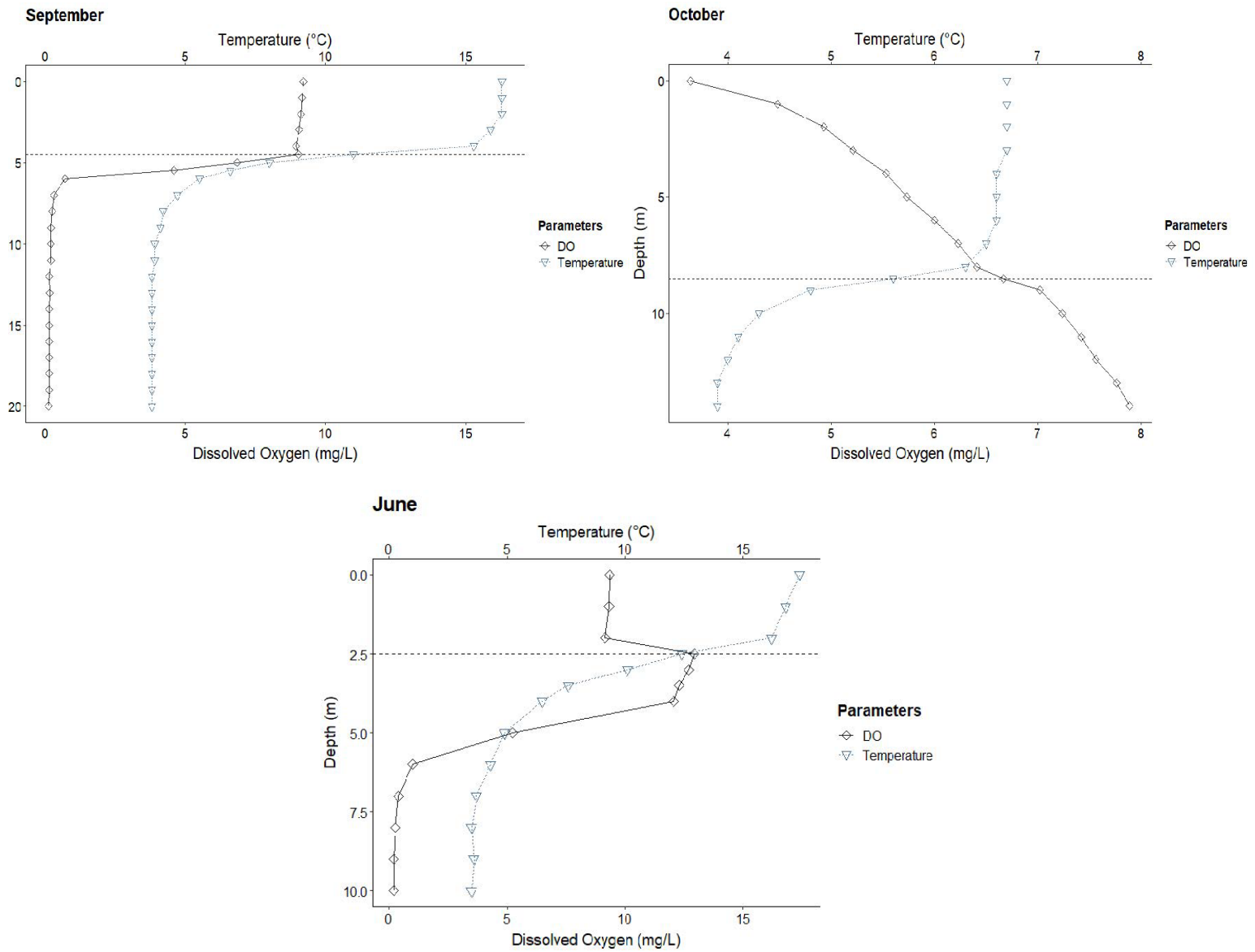


Figure A-18.4: Temperature-DO Profiles for Sutherland Lake in September and October 2022, and June 2023 (WSP 2024)

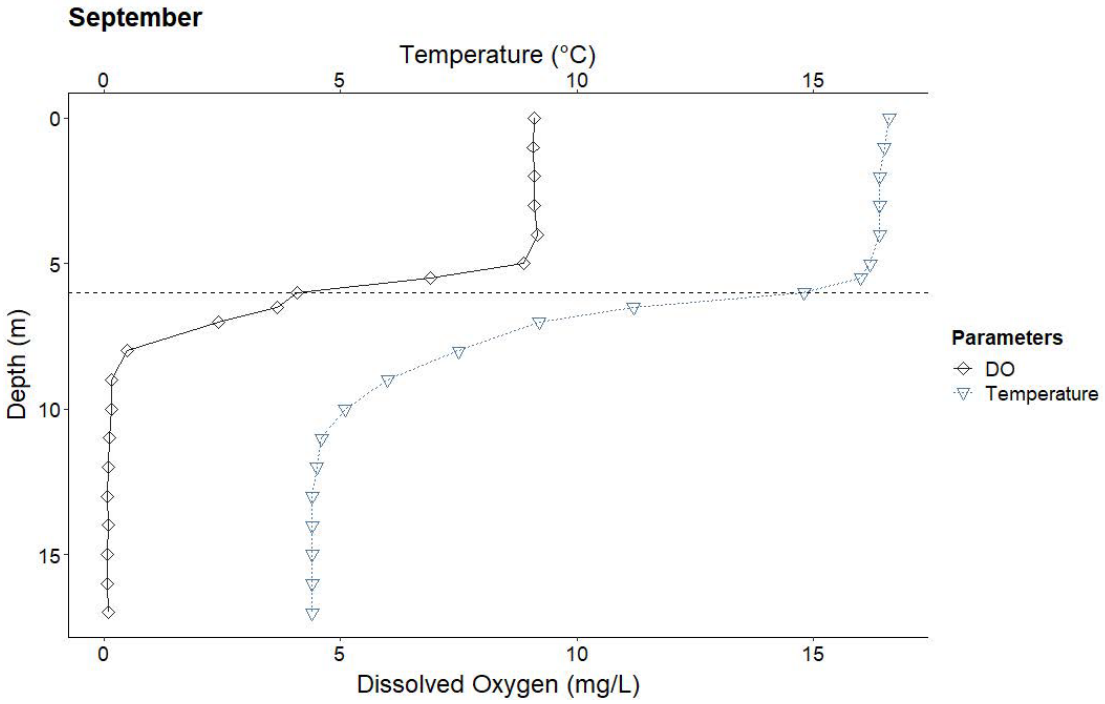


Figure A.18-5: Temperature-DO Profiles for Mel Lake in September 2022 (WSP 2024)

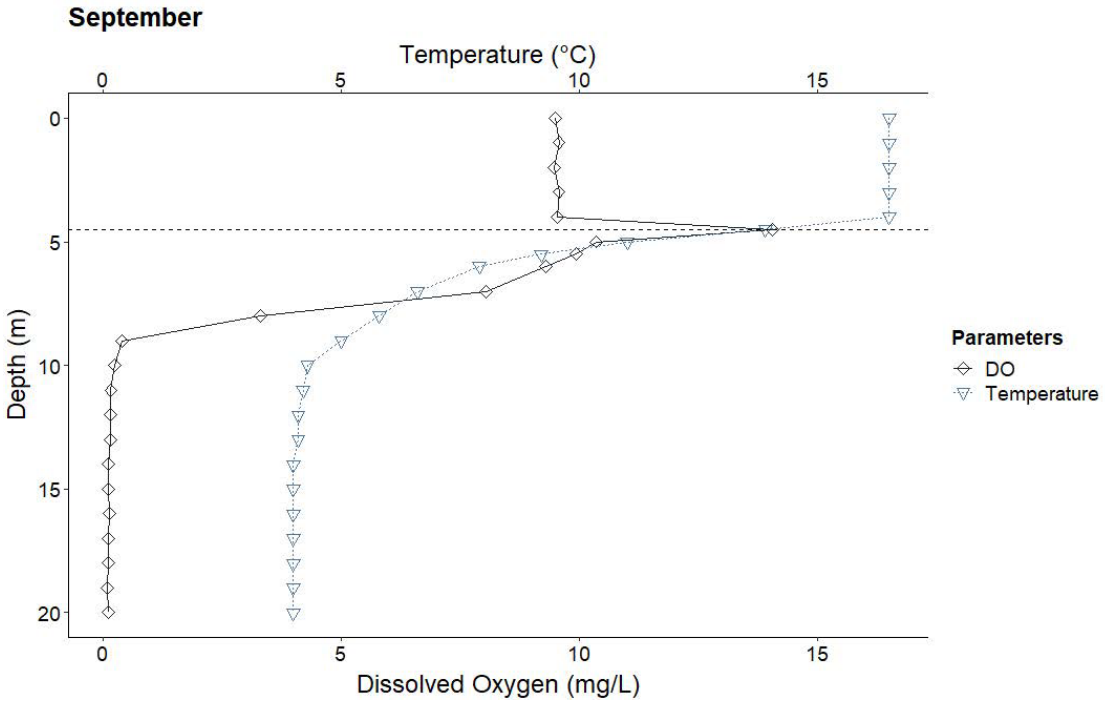


Figure A.18-5: Temperature-DO Profiles for Davis Lake in September 2022 (WSP 2024)

Appendix B Data Tables

Appendix B.1 Hydrological Modelling Tables

Table B1.1 Watershed Topographic Characteristics Summary

Watershed Name	Topographic Source	Area (ha)	Minimum Elevation (masl)	Maximum Elevation (masl)	Mean Elevation (masl)	Minimum Slope (%)	Maximum Slope (%)	Mean Slope (%)	Longest Channel Length (m)	Channel Average Slope (%)
JC1	LIDAR	1945.1	264.7	305.7	282.8	0	682.74	4.17	20681	1.64
JC2	P DEM	7182.0	272.0	322.3	289.9	0.00010	346.85	1.19	52712	1.80
JC_DS	LIDAR	1836.8	258.9	294.1	274.7	0.00031	31.62	1.41	**11250**	**4.24**
ND1	P DEM	2147.6	248.2	281.1	264.2	0.00036	25.23	1.98	19624	2.88
ND10	LIDAR	771.5	262.5	284.5	272.4	0	605.03	2.78	12061	1.44
ND11	LIDAR	477.5	262.4	273.8	267.9	0	306.21	2.19	4146	0.75
ND12	LIDAR	242.3	267.4	275.9	271.8	0	277.35	2.08	4794	0.85
ND13	LIDAR	233.5	264.5	279.9	271.3	0	478.05	2.68	3934	1.30
ND14	LIDAR	718.6	265.2	279.4	270.5	0	684.77	2.41	4207	0.91
ND15	LIDAR	579.6	265.2	277.7	271.9	0	416.08	2.07	3229	0.74
ND16	LIDAR	107.4	266.5	278.5	269.1	0	177.90	2.36	1754	0.85
ND17	LIDAR	28.1	266.5	273.3	268.3	0	78.47	2.81	1009	1.06
ND18	LIDAR	953.2	268.1	294.1	274.6	0	636.31	2.76	11350	0.70
ND19	LIDAR	275.4	268.1	293.1	274.4	0	1007.87	2.93	1487	0.72
ND2	P DEM	8440.5	248.2	297.0	273.9	0	114.55	1.76	95123	1.94
ND20	LIDAR	164.8	268.4	275.0	273.4	0	2717.03	1.96	842	1.90
ND21	LIDAR	1075.1	266.7	289.6	273.9	0	267.16	2.30	8187	0.87
ND22	LIDAR	1065.8	268.0	300.0	278.6	0	841.39	2.55	3739	0.94
ND23	P DEM	1302.0	271.4	303.1	286.6	0.00636	15.38	1.22	5551	1.68
ND3	P DEM	5061.3	251.5	291.4	267.4	0.00031	109.60	1.58	45820	1.84
ND4	P DEM	10216.6	251.4	281.9	266.4	0.00031	267.58	1.38	92439	1.66
ND5	P DEM	1806.6	258.6	291.3	272.6	0.00031	123.79	1.85	17321	1.73
ND6	P DEM	480.0	259.0	275.3	268.4	0.00031	34.42	1.81	5298	2.14
ND7	P DEM	628.1	260.5	281.8	270.6	0.00068	25.41	1.44	5097	1.73
ND8	LIDAR	328.4	261.2	272.7	266.8	0	2382.43	3.06	6047	1.85
ND9	LIDAR	1225.4	261.2	277.2	270.1	0	575.69	2.18	10340	0.83
WB1	P DEM	3872.8	260.9	325.2	275.2	0.00043	395.77	1.55	30602	2.14
WB10	LIDAR	443.9	267.0	279.3	272.6	0	566.40	2.15	2737	0.76
WB11	LIDAR	684.9	267.0	284.6	275.1	0	314.02	2.23	4822	0.71
WB12	LIDAR	603.3	265.7	277.3	272.7	0	395.40	2.37	5576	1.81
WB13	LIDAR	623.3	266.4	283.2	275.5	0	293.53	2.22	1510	1.00
WB14	LIDAR	490.7	266.4	284.0	272.7	0	1151.73	2.84	5222	1.87
WB15	LIDAR	165.4	267.4	280.8	273.8	0	219.11	2.20	534	1.78
WB16	P DEM	851.3	268.9	286.8	279.7	0.00020	27.79	1.61	11997	2.10

Watershed Name	Topographic Source	Area (ha)	Minimum Elevation (masl)	Maximum Elevation (masl)	Mean Elevation (masl)	Minimum Slope (%)	Maximum Slope (%)	Mean Slope (%)	Longest Channel Length (m)	Channel Average Slope (%)
WB17	LIDAR	187.2	267.9	283.2	274.4	0	199.66	2.69	2119	1.76
WB18	P DEM	803.8	273.4	297.0	284.6	0.00346	576.78	1.00	4232	2.53
WB19	P DEM	722.5	269.0	286.1	280.9	0.00043	27.98	2.18	10941	2.57
WB2	P DEM	7070.1	262.3	316.0	281.4	0.00031	201.52	1.83	50079	2.62
WB20	P DEM	727.0	276.1	300.3	288.9	0.00814	18.34	2.09	4873	2.07
WB21	P DEM	1887.3	271.5	297.3	283.8	0.00031	29.05	1.60	19548	3.11
WB22	P DEM	1785.0	272.9	314.7	289.0	0.00068	121.48	1.75	13376	1.97
WB23	P DEM	1262.4	284.0	299.8	293.9	0.00259	9.29	0.81	7977	1.42
WB24	P DEM	315.1	277.7	293.1	287.1	0.00031	139.47	1.19	2747	2.51
WB25	P DEM	2847.9	279.9	303.2	295.3	0.00068	257.85	0.83	19246	1.98
WB26	P DEM	2128.3	279.5	352.8	297.8	0.00061	168.92	1.19	21485	1.74
WB27	P DEM	8326.1	271.3	356.1	292.4	0.00010	129.33	1.88	91264	2.23
WB3	P DEM	2870.7	262.3	287.1	273.2	0.00031	66.70	1.06	21752	1.62
WB4	P DEM	8042.4	262.3	323.9	278.8	0.00020	169.50	1.49	67900	2.12
WB5	P DEM	1892.3	263.4	291.5	276.0	0.00068	28.98	1.02	11414	1.56
WB6	P DEM	974.5	263.4	283.3	272.3	0.00043	20.12	1.64	13142	2.07
WB7	LIDAR	1342.3	264.6	290.1	276.0	0	1603.20	1.56	7386	0.74
WB8	LIDAR	468.3	264.6	284.6	273.9	0	1525.52	2.07	5321	0.89
WB9	LIDAR	1017.3	264.7	285.3	274.4	0	318.86	2.54	8191	1.62

Table B1.2 Land Area Type Summary Table

Subwatershed ID	Land Type Summary (ha)													
	Agriculture and Undifferentiated Rural Land Use	Bedrock	Bog	Clear Open Water	Community / Infrastructure	Coniferous Treed	Deciduous Treed	Disturbance	Fen	Mixed Treed	Sparse Treed	Swamp	Turbid Water	Total
JC1		2.7	307.7	40.8	138.7	309.7	88.0	181.1	17.7	639.5	219.1			1945
JC2		1.9	1500.4	8.0	59.5	2476.0	7.1	376.4	334.7	1505.2	912.8			7182
JCDS			440.4	9.2		181.5	46.4	298.8	69.1	572.1	219.3			1837
ND1			172.7	72.3	4.4	102.1	26.4	431.5	18.6	131.2	22.5	1165.1	0.6	2148
ND10			160.8	5.6	39.4	134.7	1.0	9.0	8.9	264.9	147.2			771
ND11			148.3			70.7	1.8	1.1	12.8	99.3	143.5			478
ND12			92.4	1.3		15.7	1.8	1.0	14.6	56.3	59.2			242
ND13			65.4		8.7	38.8	1.8	4.5	1.6	82.6	30.0			233
ND14			75.1		59.8	92.5	26.4	81.7		239.8	143.4			719
ND15			332.8	0.1		18.0	20.3	27.6	23.5	65.8	91.5			580
ND16			12.8			15.7	3.6	8.8		48.1	18.4			107
ND17			6.3		3.4	3.2		1.0		11.9	2.2			28
ND18			225.2	52.4		81.1	47.1	89.3	27.0	246.4	184.8			953
ND19			11.2	23.9		28.3	28.5	24.4		137.5	21.6			275
ND2	1.2		859.1	348.2	95.1	317.4	777.9	1829.2	221.8	834.6	232.9	2912.6	10.5	8441
ND20			115.7			6.8	0.0	0.2	5.7	15.7	20.7			165
ND21			116.5	3.0	17.7	159.6	3.4	241.5	0.0	357.2	176.2			1075
ND22			5.2	1.7	73.6	166.5	24.9	48.7		552.3	192.8			1066
ND23			77.5	0.5		333.5	32.1	96.5		655.4	106.5			1302
ND3			815.8	39.6	162.2	1468.8	71.1	124.5	14.4	1541.7	415.3	407.9		5061
ND4			1346.0	83.6	1.4	3115.6	219.5	177.8	193.9	3186.7	1364.3	527.9		10217
ND5			395.3	2.7	80.2	519.1	27.5	47.9		593.4	140.4			1807
ND6			140.8			134.5				152.9	51.8			480
ND7			151.0	0.6		98.0	26.7			236.4	115.5			628
ND8			127.6			66.2				84.9	49.8			328
ND9			338.6	2.0		98.7	28.9	2.9	83.9	366.6	303.8			1225
WB1			477.1	115.9	14.2	310.1	31.5	271.0	116.2	789.5	210.4	1537.0		3873
WB10			151.9	1.9		64.4	1.8	40.5	7.8	116.4	59.2			444
WB11			173.0	4.2		120.4	1.6	11.5	4.2	205.7	164.3			685
WB12			123.8			94.2		147.7	16.3	114.5	106.7			603
WB13			14.4			192.9		86.6	2.7	209.3	117.2			623
WB14			21.6		0.8	60.0	14.1	226.4		147.0	20.8			491
WB15			39.4			24.4	1.1	40.5	2.1	39.9	18.0			165
WB16			204.5			268.8	3.1	64.2	7.5	228.5	74.7			851
WB17						63.5	4.2	7.6		106.5	5.5			187

Subwatershed ID	Land Type Summary (ha)													
	Agriculture and Undifferentiated Rural Land Use	Bedrock	Bog	Clear Open Water	Community / Infrastructure	Coniferous Treed	Deciduous Treed	Disturbance	Fen	Mixed Treed	Sparse Treed	Swamp	Turbid Water	Total
WB18			6.4			424.9	3.0	5.5		299.7	64.2			804
WB19			160.7			206.5	4.2	0.4	7.7	238.8	104.1			723
WB2			1033.5	340.8	36.1	670.8	311.2	1414.4	129.6	1534.3	665.7	933.8		7070
WB20			49.4	35.7		270.6	24.0	39.9		258.5	48.9			727
WB21			482.9			504.9	5.4		39.3	602.2	252.7			1887
WB22			150.0	0.8		858.9	2.2	117.2	40.9	463.0	152.0			1785
WB23			209.9	0.9		379.4	4.7		72.2	332.5	262.7			1262
WB24			56.5	1.8		66.7			24.7	116.6	48.8			315
WB25			917.6	1.7		581.7		21.4	137.9	682.6	505.1			2848
WB26			110.0	3.0		481.0	17.0	62.5	12.3	794.8	647.7			2128
WB27			915.8	194.3		2333.5	77.2	417.1	79.7	3400.7	907.7			8326
WB3			723.9			553.6	36.9	146.3	40.6	867.6	483.9	17.8		2871
WB4			785.6	8.6	2.5	2587.8	137.8	920.0	46.9	2435.4	1117.8			8042
WB5			329.9	3.5		339.6	58.2	96.5	17.8	792.1	254.7			1892
WB6			134.7	2.1		263.8	20.4	32.7		431.1	89.7			975
WB7			258.4	1.5		223.0	21.7	9.7		623.9	204.1			1342
WB8			141.2	2.3		55.3	11.4	0.0		147.6	110.4			468
WB9			255.6			253.8	0.9	62.2	40.7	264.7	139.5			1017
Total	**1.2**	**4.6**	**15528.1**	**1405.3**	**797.6**	**22126.1**	**2259.3**	**8048.4**	**1826.5**	**28349.5**	**12002.9**	**7502.1**	**11.1**	**99863**

Table B1.3 Subwatershed Soils Type Summary

Subwatershed ID	Soil Type Summary (ha)					
	A	B	C	D	N	Total
JC1			787.6	1136.5	21.0	1945
JC2	0.3	102.9	757.9	6310.9	9.8	7182
ND1			1.1	2146.6		2148
ND10			303.2	468.3		771
ND11			65.8	411.8		478
ND12				242.3		242
ND13			79.7	153.8		233
ND14			357.4	361.2		719
ND15			59.6	520.1		580
ND16			7.0	100.4		107
ND17			1.4	26.7		28
ND18			248.1	670.6	34.6	953
ND19			169.6	90.2	15.6	275
ND2			1335.8	7070.5	34.2	8441
ND20			43.1	121.8		165
ND21			474.7	600.4		1075
ND22			154.3	911.5		1066
ND23			942.6	359.4		1302
ND3			762.2	4293.4	5.7	5061
ND4			2724.5	7478.3	13.7	10217
ND5			1049.4	757.3		1807
ND6			65.7	414.3		480
ND7			118.2	510.0		628
ND8			145.0	183.4		328
ND9			78.3	1147.2		1225
WB1			80.1	3792.8		3873
WB10			276.4	167.4		444
WB11			458.2	226.7		685
WB12			246.8	356.5		603
WB13			38.0	585.2		623
WB14			150.8	339.9		491
WB15			29.6	135.8		165
WB16			146.8	704.5		851
WB17			77.9	109.4		187
WB18			423.2	380.5		804
WB19			162.1	560.5		723

Subwatershed ID	Soil Type Summary (ha)					
	A	B	C	D	N	Total
WB2	327.8		349.2	6211.9	181.2	7070
WB20			290.9	410.1	26.0	727
WB21			387.0	1500.3		1887
WB22			767.6	1017.4		1785
WB23				1262.4		1262
WB24				315.1		315
WB25			217.6	2630.4		2848
WB26	71.2		207.4	1849.7		2128
WB27	1147.2		4.9	7010.1	163.9	8326
WB3			457.7	2413.0		2871
WB4			115.6	7920.0	6.7	8042
WB5			231.0	1661.3		1892
WB6			222.5	752.1		975
WB7			773.3	569.0		1342
WB8			286.9	181.3		468
WB9			271.4	745.9		1017
Total	1547	103	17405	80296	512	99863

Table B1.4 Jocko Creek Watershed HEC-HMS Model Calibration Statistics for the Period of January 1, 2008 to December 31, 2014

Statistical Parameter	Prorated Porcupine Station	Model Result
Nash-Sutcliffe Efficiency	-	0.64
RMSE	-	1.57
R^2	-	0.66
Mean Flow (m^3/s)	1.46	1.22
Minimum Flow (m^3/s)	0.07	0.10
Maximum Flow (m^3/s)	27.8	24.2

Table B1.5 North Driftwood Watershed HEC-HMS Model Calibration Statistics for the Period of January 1, 2008 to December 31, 2014

Statistical Parameter	Prorated Porcupine Station	Model Result
Nash-Sutcliffe Efficiency	-	0.52
RMSE	-	6.99
R^2	-	0.54
Mean Flow (m^3/s)	5.08	4.62
Minimum Flow (m^3/s)	0.26	0.40
Maximum Flow (m^3/s)	96.7	107.9

Table B1.6 West Buskegau Watershed HEC-HMS Model Calibration Statistics for the Period of January 1, 2008 to December 31, 2014

Statistical Parameter	Prorated Porcupine Station	Model Result
Nash-Sutcliffe Efficiency	-	0.46
RMSE	-	9.11
R^2	-	0.60
Mean Flow (m^3/s)	6.95	6.18
Minimum Flow (m^3/s)	0.36	0.50
Maximum Flow (m^3/s)	132.3	154.9

Appendix B.2 Hydrometric Monitoring Summary Sheets

Hydrometric Monitoring Station SW-1 Summary			
Station ID	SW-1	**Instrument**	Solinst Levelogger®
Location	North Driftwood	**Measurements**	Continuous levellogger (level and temperature)
Installation Date	July 2021	**Spot Measurements**	Flow, Stage
GPS Coordinates	48°48'43"N 81°22'33"W	**Main Channel**	Culvert - Corrugated Steel Pipe (CSP)
Access	Route 655, access road	**Channel Bottom**	Upstream: North Driftwood tributary, ponded area; Downstream: North Driftwood River confluence, backwater
Drainage Area	7.2 km^2	**Flood Plain**	CSP Culvert
Period of Record	July 2021 - ongoing	**Comments**	Manual Flow Measurements - Culvert outlet; Continuous Water Levels - upstream from Culvert inlet; regular partial damming of culvert inlet with mud and woody debris
Active	Yes		

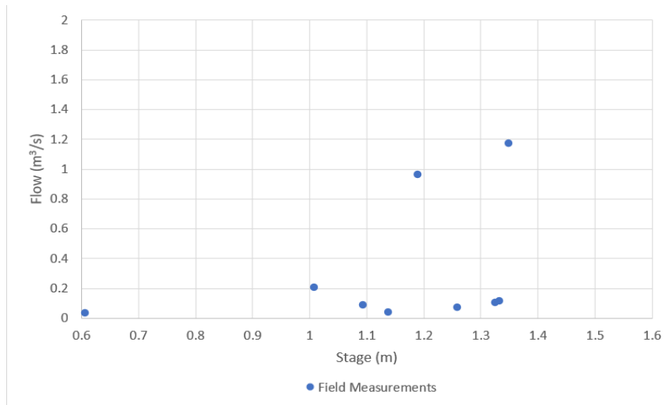
Map: SW-1 OWIT Drainage Area (MNRF 2023a)

Drainage Area (km^2)	7.201
Shape Factor ()	5.846
Length of Main Channel (km)	6.488
Maximum Channel Elevation (m)	290.630
Minimum Channel Elevation (m)	265.560
Slope of Main Channel (m/km)	3.860
Slope of Main Channel (%)	0.386
Area Lakes/Wetlands (km^2)	0.070
Area - Lakes (km^2)	0.000
Area - Wetlands (km^2)	0.070
Mean Elevation (m)	279.406
Maximum Elevation (m)	294.223
Mean Slope (%)	0.816
Annual Mean Temperature (°C)	1.900
Annual Precipitation (mm)	852.000

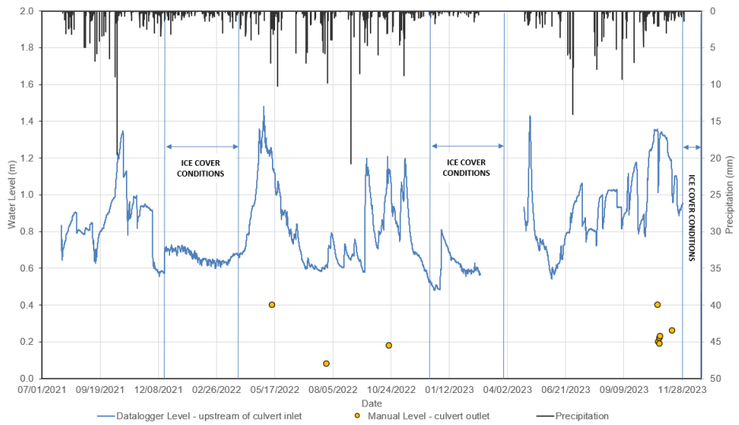
Table: OWIT Watershed Data (MNRF 2023a)

Photo 1: Looking Upstream

Photo 2: Looking Downstream

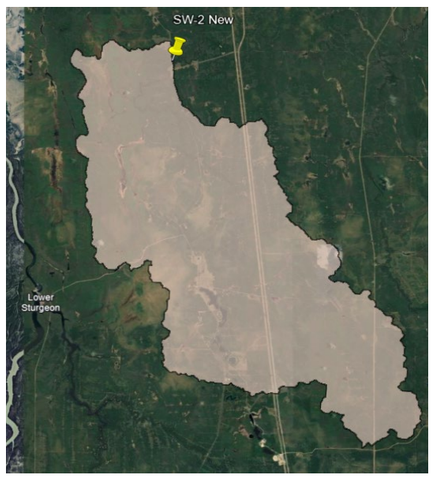


Open Water Stage - Discharge Curve



Continuous and Manual Water Levels

Hydrometric Monitoring Station SW-2b Summary			
Station ID	SW-2b	**Instrument**	Solinst Levelogger®
Location	North Driftwood	**Measurements**	Continuous levellogger (level and temperature)
Installation Date	April 2022	**Spot Measurements**	Flow, Stage
GPS Coordinates	48°53'57"N 81°25'03"W	**Main Channel**	Straight
Access	Route 655, access road	**Channel Bottom**	Cobbles, gravel
Drainage Area	105 km^2	**Flood Plain**	Left bank: grasses, confierous trees. Reight bank: vegetation, steep slope
Period of Record	April 2022 - Ongoing	**Comments**	Manual Flow Measurements - 8 m downstream of bridge
Active	Yes		



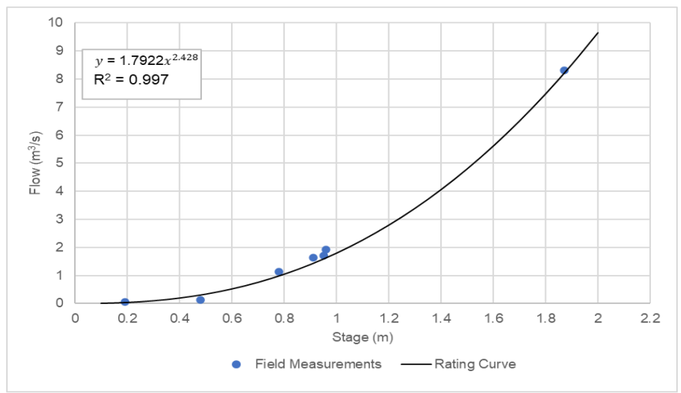
Map: SW-2b OWIT Drainage Area (MNRF 2023a)

Drainage Area (km^2)	105.242
Shape Factor ()	10.056
Length of Main Channel (km)	32.531
Maximum Channel Elevation (m)	299.360
Minimum Channel Elevation (m)	259.020
Slope of Main Channel (m/km)	1.240
Slope of Main Channel (%)	0.124
Area Lakes/Wetlands (km^2)	4.962
Area - Lakes (km^2)	0.653
Area - Wetlands (km^2)	4.308
Mean Elevation (m)	275.013
Maximum Elevation (m)	303.137
Mean Slope (%)	1.075
Annual Mean Temperature (°C)	1.800
Annual Precipitation (mm)	853.000

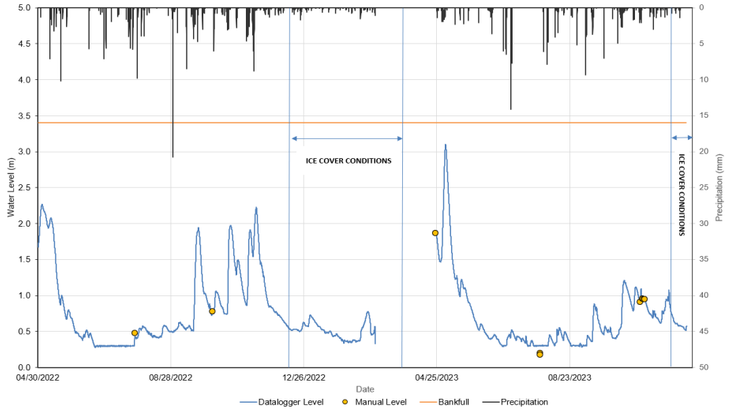
Table: OWIT Watershed Data (MNRF 2023a)

Photo 1: Looking Upstream

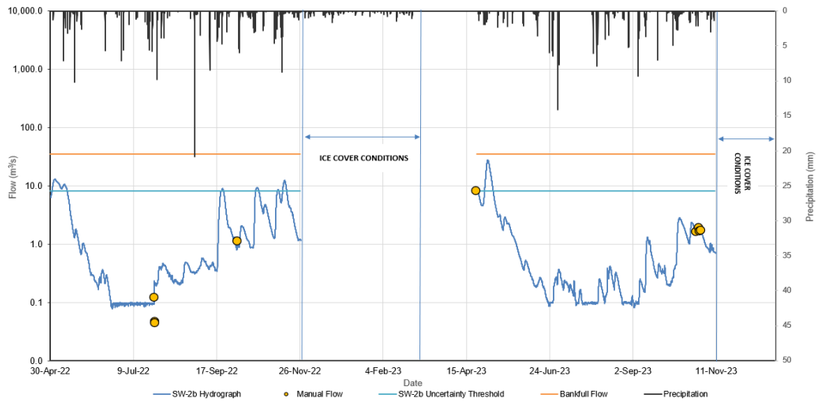
Photo 2: Looking Downstream



Open Water Stage - Discharge Curve



Continuous and Manual Water Levels



Continuous and Manual Flows

Hydrometric Monitoring Station SW-3 Summary			
Station ID	SW-3	**Instrument**	Solinst Levelogger®
Location	North Driftwood	**Measurements**	Continuous levellogger (level and temperature)
Installation Date	July 2021	**Spot Measurements**	Flow, Stage
GPS Coordinates	48°48'16"N 81°19'47"W	**Main Channel**	Braided
Access	Offroad access	**Channel Bottom**	Saturated soils, unstable
Drainage Area	14.3 km^2	**Flood Plain**	Well vegetated, grasses
Period of Record	July 2021 - ongoing	**Comments**	
Active	Yes		

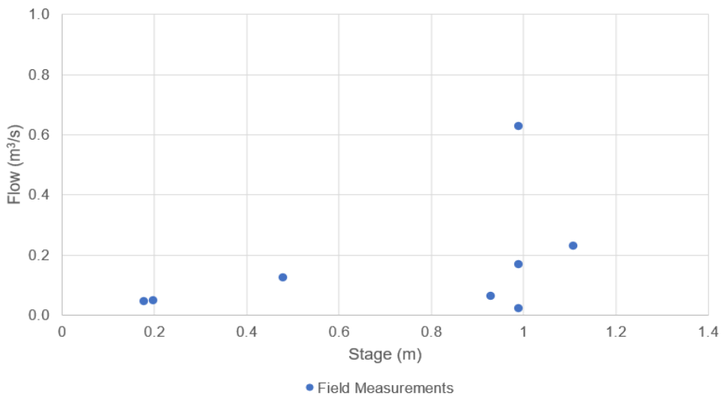
Map: SW-3 OWIT Drainage Area (MNRF 2023a)

Drainage Area (km^2)	14.106
Shape Factor ()	3.602
Length of Main Channel (km)	7.128
Maximum Channel Elevation (m)	299.360
Minimum Channel Elevation (m)	271.380
Slope of Main Channel (m/km)	3.930
Slope of Main Channel (%)	0.393
Area Lakes/Wetlands (km^2)	0.477
Area - Lakes (km^2)	0.000
Area - Wetlands (km^2)	0.477
Mean Elevation (m)	286.751
Maximum Elevation (m)	303.137
Mean Slope (%)	1.074
Annual Mean Temperature (°C)	1.900
Annual Precipitation (mm)	852.000

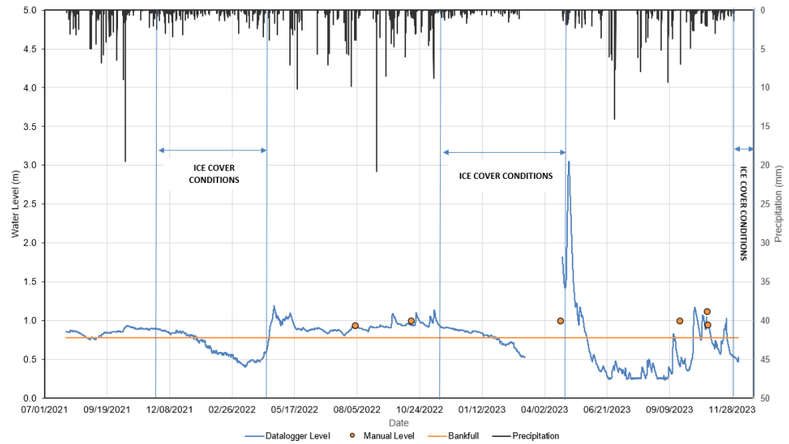
Table: OWIT Watershed Data (MNRF 2023a)

Photo 1: Looking Upstream

Photo 2: Looking Downstream



Open Water Stage - Discharge Curve



Continuous and Manual Water Levels

Hydrometric Monitoring Station SW-4 Summary			
Station ID	SW-4	**Instrument**	Solinst Levelogger®
Location	West Buskegau	**Measurements**	Continuous levellogger (level and temperature)
Installation Date	July 2021	**Spot Measurements**	Flow, Stage
GPS Coordinates	48°47'42"N 81°17'01"W	**Main Channel**	Straight
Access	Offroad access	**Channel Bottom**	Saturated soils, unstable
Drainage Area	13.6 km^2	**Flood Plain**	Vegetated, forest
Period of Record	July 2021 - ongoing	**Comments**	
Active	Yes		

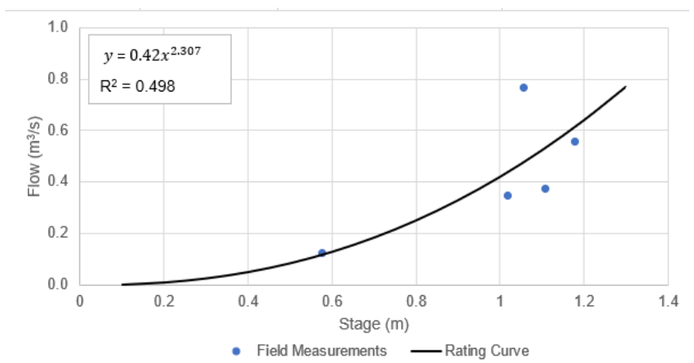
Map: SW-4 OWIT Drainage Area (MNRF 2023a)

Drainage Area (km^2)	13.554
Shape Factor ()	5.472
Length of Main Channel (km)	8.612
Maximum Channel Elevation (m)	299.360
Minimum Channel Elevation (m)	273.430
Slope of Main Channel (m/km)	3.010
Slope of Main Channel (%)	0.301
Area Lakes/Wetlands (km^2)	1.349
Area - Lakes (km^2)	0.293
Area - Wetlands (km^2)	1.056
Mean Elevation (m)	286.450
Maximum Elevation (m)	300.033
Mean Slope (%)	1.414
Annual Mean Temperature (°C)	1.900
Annual Precipitation (mm)	849.000

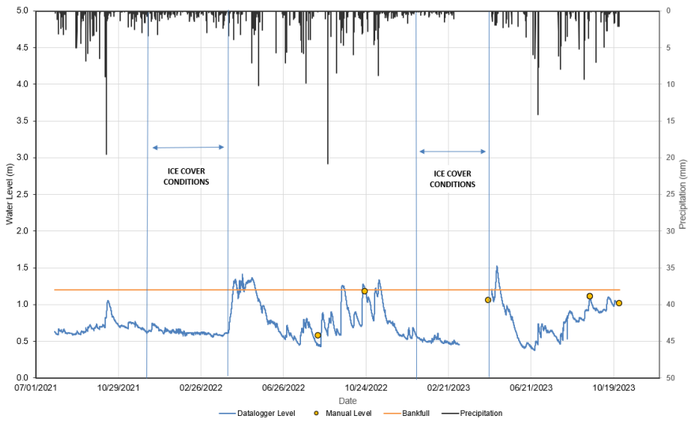
Table: OWIT Watershed Data (MNRF 2023a)

Photo 1: Looking Upstream

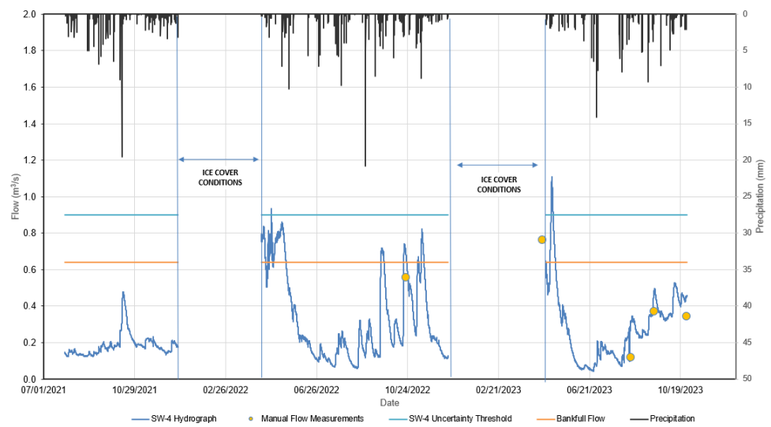
Photo 2: Looking Downstream



Open Water Stage - Discharge Curve

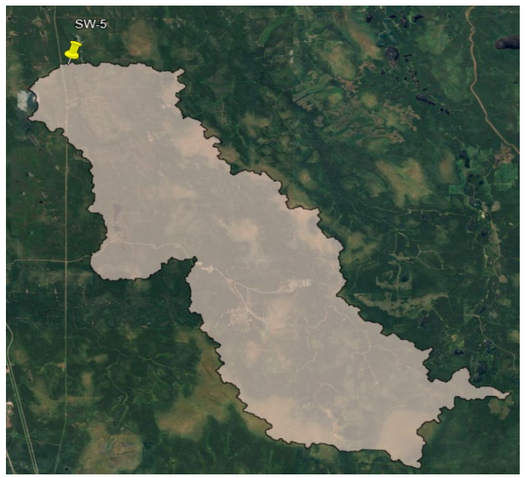


Continuous and Manual Water Levels



Continuous and Manual Flows

Hydrometric Monitoring Station SW-5 Summary			
Station ID	SW-5	**Instrument**	Solinst Levelogger®
Location	West Buskegau	**Measurements**	Continuous levellogger (level and temperature)
Installation Date	July 2021	**Spot Measurements**	Flow, Stage
GPS Coordinates	48°50'33"N 81°18'43"W	**Main Channel**	Straight
Access	Offroad, SHERP access	**Channel Bottom**	Saturated soils
Drainage Area	154 km^2	**Flood Plain**	Vegetated, forest
Period of Record	July 2021 - ongoing	**Comments**	Cross-sectional survey to be compelted to determine bankfull depth
Active	Yes		



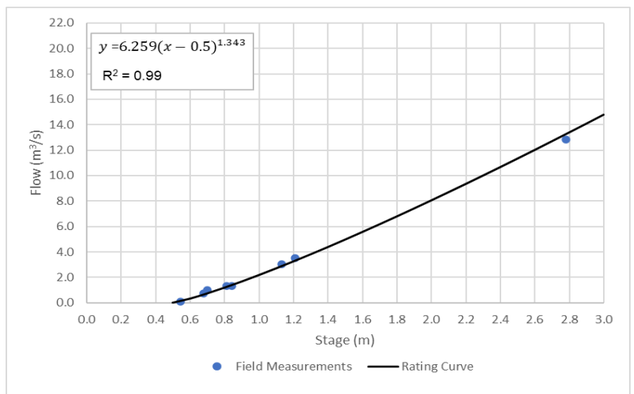
Map: SW-5 OWIT Drainage Area (MNRF 2023a)

Drainage Area (km^2)	153.786
Shape Factor ()	13.468
Length of Main Channel (km)	45.510
Maximum Channel Elevation (m)	303.070
Minimum Channel Elevation (m)	268.610
Slope of Main Channel (m/km)	0.760
Slope of Main Channel (%)	0.076
Area Lakes/Wetlands (km^2)	27.550
Area - Lakes (km^2)	0.485
Area - Wetlands (km^2)	27.065
Mean Elevation (m)	288.202
Maximum Elevation (m)	352.762
Mean Slope (%)	1.079
Annual Mean Temperature (°C)	1.900
Annual Precipitation (mm)	846.000

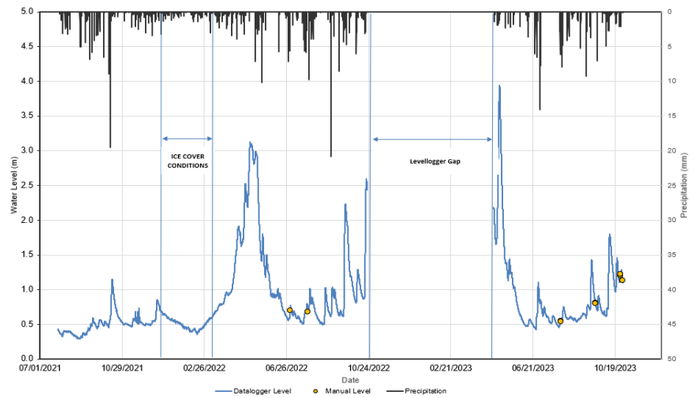
Table: OWIT Watershed Data (MNRF 2023a)

Photo 1: Looking Upstream

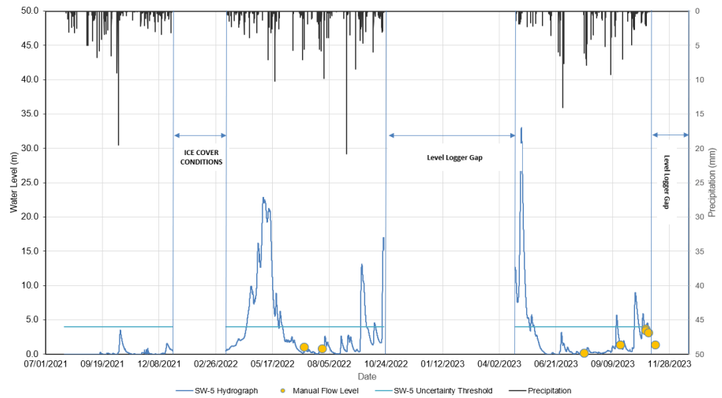
Photo 2: Looking Downstream



Open Water Stage - Discharge Curve



Continuous and Manual Water Levels



Continuous and Manual Flows

Hydrometric Monitoring Station SW-6b Summary			
Station ID	SW-6b	**Instrument**	Solinst Levelogger®
Location	West Buskegau	**Measurements**	Continuous levellogger (level and temperature)
Installation Date	August 2022	**Spot Measurements**	Flow, Stage
GPS Coordinates	48°53'59"N 81°18'33"W	**Main Channel**	Straight
Access	Offroad, SHERP access	**Channel Bottom**	Saturated soils
Drainage Area	199 km^2	**Flood Plain**	Well vegetated with grasses and trees
Period of Record	August 2022 - Ongoing	**Comments**	
Active	Yes		

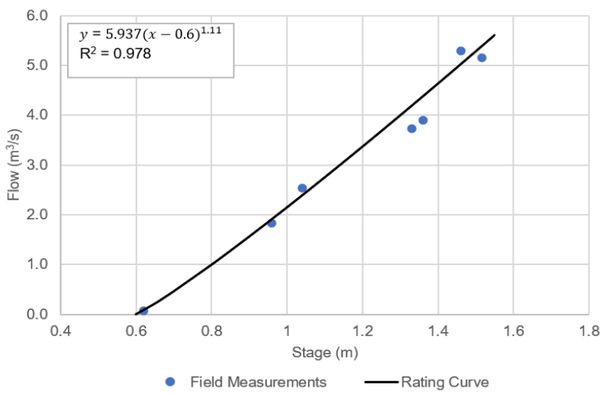
Map: SW-6b OWIT Drainage Area (MNRF 2023a)

Drainage Area (km^2)	197.694
Shape Factor ()	15.429
Length of Main Channel (km)	55.228
Maximum Channel Elevation (m)	303.070
Minimum Channel Elevation (m)	263.360
Slope of Main Channel (m/km)	0.720
Slope of Main Channel (%)	0.072
Area Lakes/Wetlands (km^2)	28.363
Area - Lakes (km^2)	0.485
Area - Wetlands (km^2)	27.878
Mean Elevation (m)	285.284
Maximum Elevation (m)	352.762
Mean Slope (%)	1.067
Annual Mean Temperature (°C)	1.825
Annual Precipitation (mm)	850.000

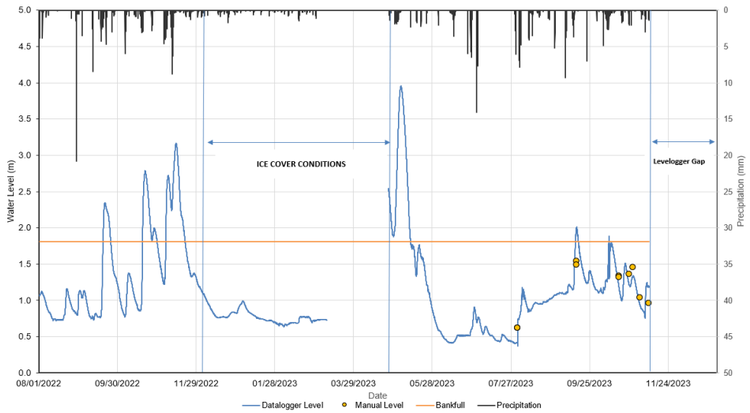
Table: OWIT Watershed Data (MNRF 2023a)

Photo 1: Looking Upstream

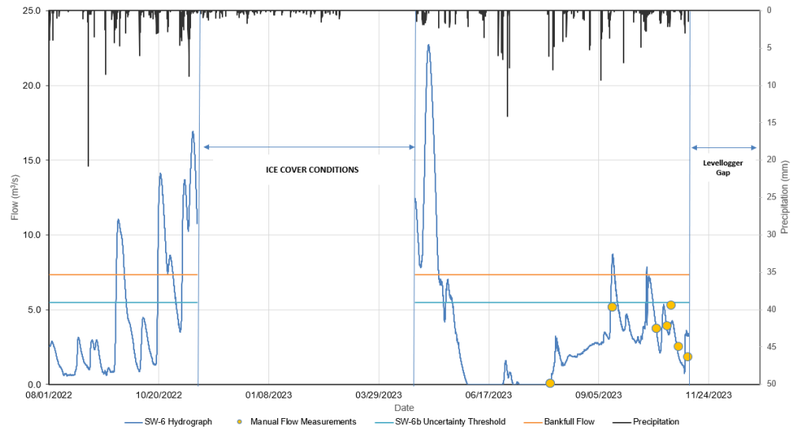
Photo 2: Looking Downstream



Open Water Stage - Discharge Curve

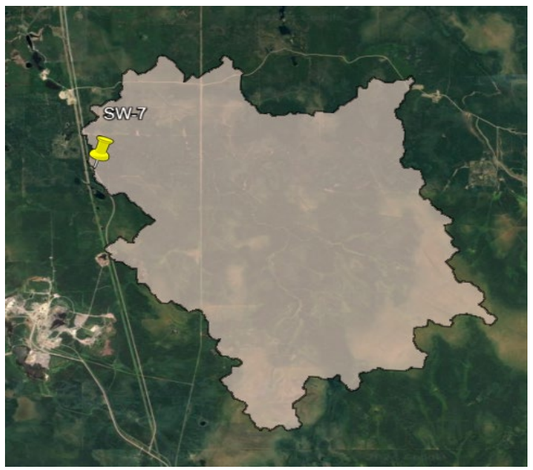


Continuous and Manual Water Levels



Continuous and Manual Flows

Hydrometric Monitoring Station SW-7 Summary			
Station ID	SW-7	**Instrument**	Solinst Levelogger®
Location	Jocko Creek	**Measurements**	Continuous levellogger (level and temperature)
Installation Date	April 2022	**Spot Measurements**	Flow, Stage
GPS Coordinates	48°43'51"N 81°21'08"W	**Main Channel**	Straight, Box Culvert
Access	Route 655, next to highway	**Channel Bottom**	Cobbles, gravel
Drainage Area	72.3 km^2	**Flood Plain**	Gravel
Period of Record	April 2022 - Ongoing	**Comments**	Station is located ~10 m upstream from 4.2 m wide box culvert entrance (crossing with highway 655).
Active	Yes		



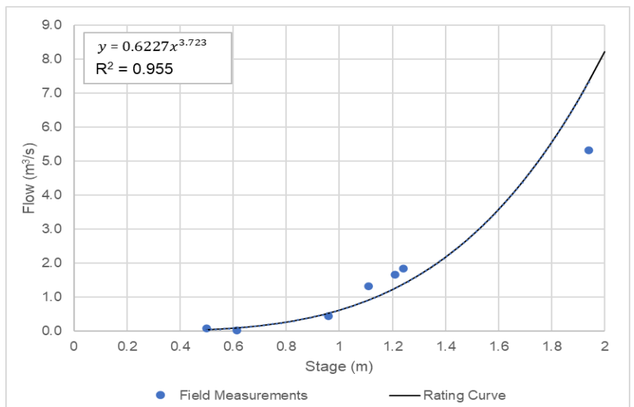
Map: SW-7 OWIT Drainage Area (MNRF 2023a)

Drainage Area (km^2)	71.897
Shape Factor ()	5.368
Length of Main Channel (km)	19.646
Maximum Channel Elevation (m)	293.670
Minimum Channel Elevation (m)	272.040
Slope of Main Channel (m/km)	1.100
Slope of Main Channel (%)	0.110
Area Lakes/Wetlands (km^2)	25.546
Area - Lakes (km^2)	0.118
Area - Wetlands (km^2)	25.428
Mean Elevation (m)	289.878
Maximum Elevation (m)	322.350
Mean Slope (%)	1.000
Annual Mean Temperature (°C)	2.000
Annual Precipitation (mm)	849.000

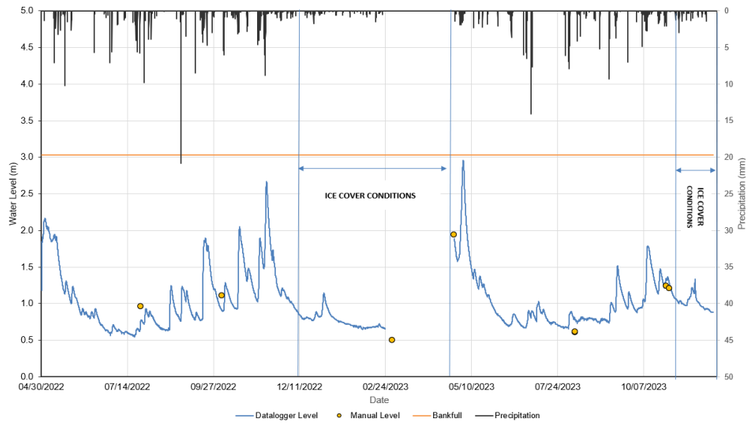
Table: OWIT Watershed Data (MNRF 2023a)

Photo 1: Looking Upstream

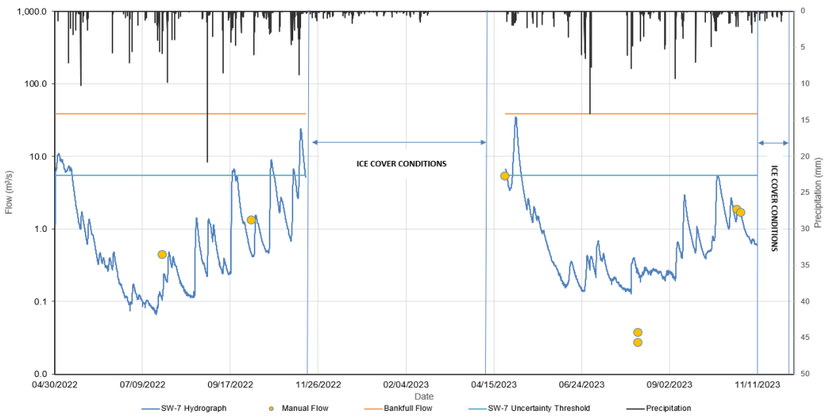
Photo 2: Looking Downstream



Open Water Stage - Discharge Curve

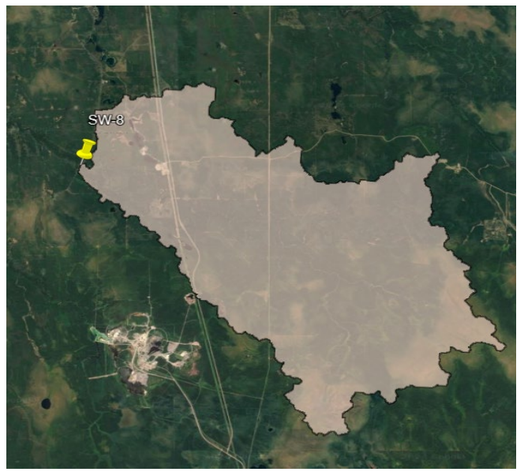


Continuous and Manual Water Levels



Continuous and Manual Flows

Hydrometric Monitoring Station SW-8 Summary			
Station ID	SW-8	**Instrument**	Solinst Levelogger®
Location	Jocko Creek	**Measurements**	Continuous levellogger (level and temperature)
Installation Date	April 2022	**Spot Measurements**	Flow, Stage
GPS Coordinates	48°45'05"N 81°23'59"W	**Main Channel**	Straight
Access	Route 655, access road, offroad access	**Channel Bottom**	Gravels, soft bed material
Drainage Area	92.5 km^2	**Flood Plain**	Vegetated, treed, steep side slopes
Period of Record	April 2022 - Ongoing	**Comments**	
Active	Yes		



Map: SW-8 OWIT Drainage Area (MNRF 2023a)

Drainage Area (km^2)	92.026
Shape Factor ()	8.079
Length of Main Channel (km)	27.267
Maximum Channel Elevation (m)	293.670
Minimum Channel Elevation (m)	263.070
Slope of Main Channel (m/km)	1.120
Slope of Main Channel (%)	0.112
Area Lakes/Wetlands (km^2)	28.498
Area - Lakes (km^2)	0.517
Area - Wetlands (km^2)	27.981
Mean Elevation (m)	288.447
Maximum Elevation (m)	322.350
Mean Slope (%)	1.217
Annual Mean Temperature (°C)	1.950
Annual Precipitation (mm)	850.000

Table: OWIT Watershed Data (MNRF 2023a)

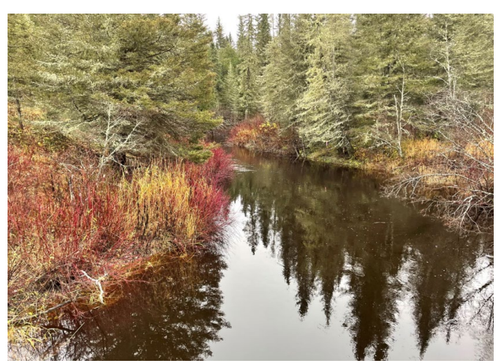
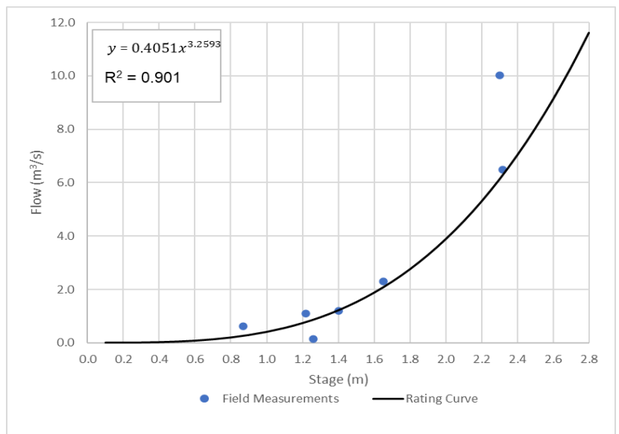
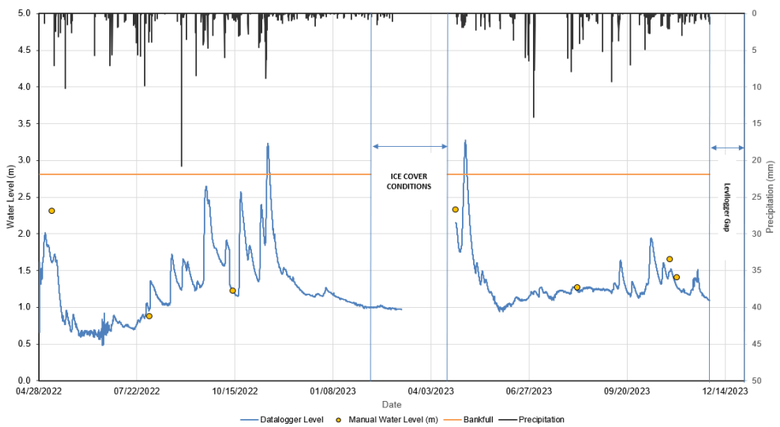


Photo 1: Looking Upstream

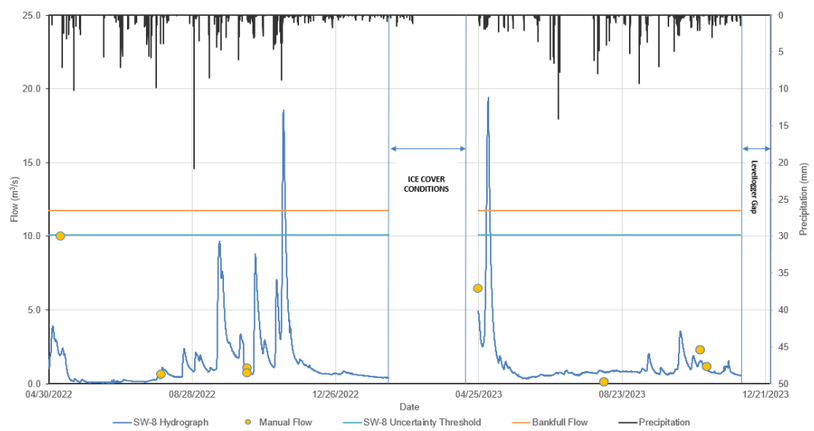
Photo 2: Looking Downstream



Open Water Stage - Discharge Curve



Continuous and Manual Water Levels



Continuous and Manual Flows

Hydrometric Monitoring Station SW-9 Summary			
Station ID	SW-9	**Instrument**	Solinst Levelogger®
Location	North Driftwood	**Measurements**	Continuous levellogger (level and temperature)
Installation Date	April 2022	**Spot Measurements**	Flow, Stage
GPS Coordinates	48°48'49"N 81°23'18"W	**Main Channel**	Culvert - Corrugated Steel Pipe (CSP)
Access	Route 655 access road, west of SW-1	**Channel Bottom**	Upstream: North Driftwood tributary, ponded area; Downstream: North Driftwood River confluence, backwater
Drainage Area	12.3 km^2	**Flood Plain**	CSP Culvert
Period of Record	April 2022 - Ongoing	**Comments**	
Active	Yes		

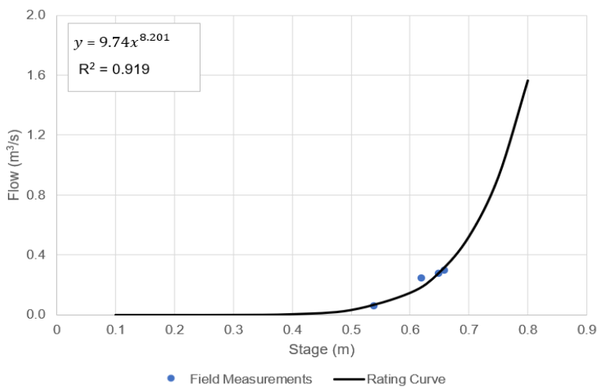
Map: SW-9 OWIT Drainage Area (MNRF 2023a)

Drainage Area (km^2)	12.220
Shape Factor ()	4.689
Length of Main Channel (km)	7.570
Maximum Channel Elevation (m)	294.100
Minimum Channel Elevation (m)	263.080
Slope of Main Channel (m/km)	4.100
Slope of Main Channel (%)	0.410
Area Lakes/Wetlands (km^2)	0.842
Area - Lakes (km^2)	0.595
Area - Wetlands (km^2)	0.247
Mean Elevation (m)	274.532
Maximum Elevation (m)	294.142
Mean Slope (%)	1.223
Annual Mean Temperature (°C)	1.900
Annual Precipitation (mm)	852.000

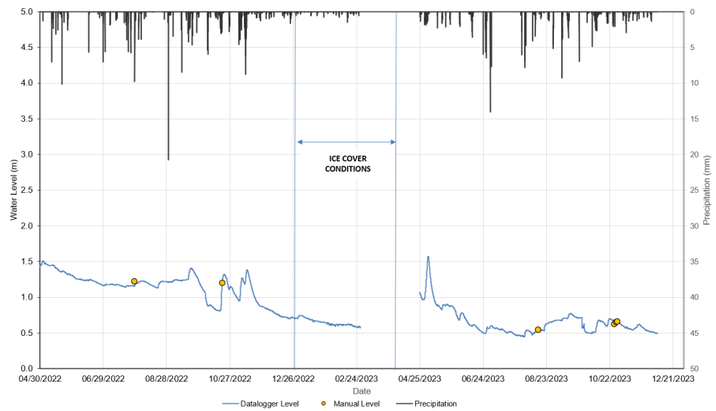
Table: OWIT Watershed Data (MNRF 2023a)

Photo 1: Looking Upstream

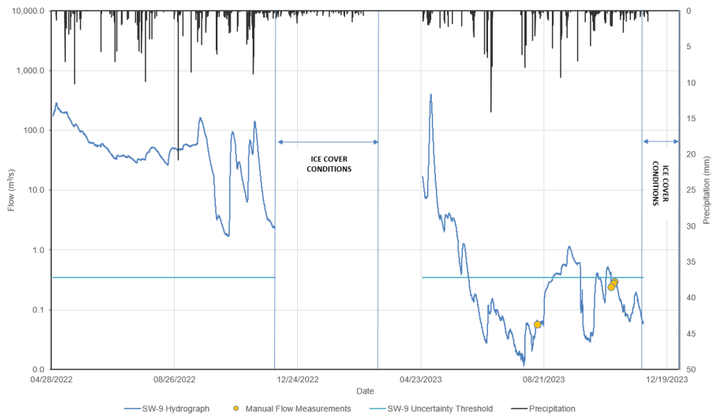
Photo 2: Looking Downstream



Open Water Stage - Discharge Curve



Continuous and Manual Water Levels

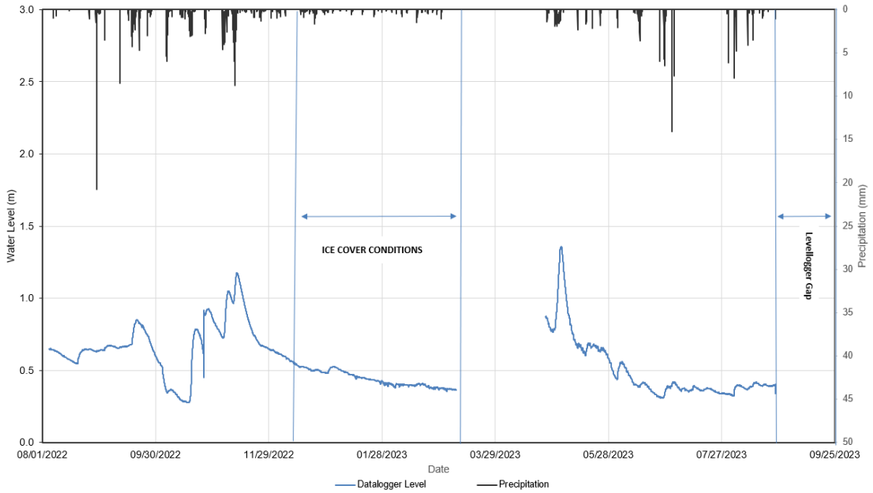


Continuous and Manual Flows

Hydrometric Monitoring Station SW-10 Summary			
Station ID	SW-10	**Instrument**	Solinst Levelogger®
Location	North Driftwood - Martin Lake	**Measurements**	Continuous levellogger (level and temperature)
Installation Date	August 2022	**Spot Measurements**	Stage
GPS Coordinates	48°48'50"N 81°24'14"W	**Main Channel**	-
Access	Route 655, access road, west of SW-9 and SW-1	**Channel Bottom**	-
Drainage Area	-	**Flood Plain**	-
Period of Record	August 2022 - Ongoing	**Comments**	Monitoring Martin Lake Levels
Active	Yes		

Photo 1

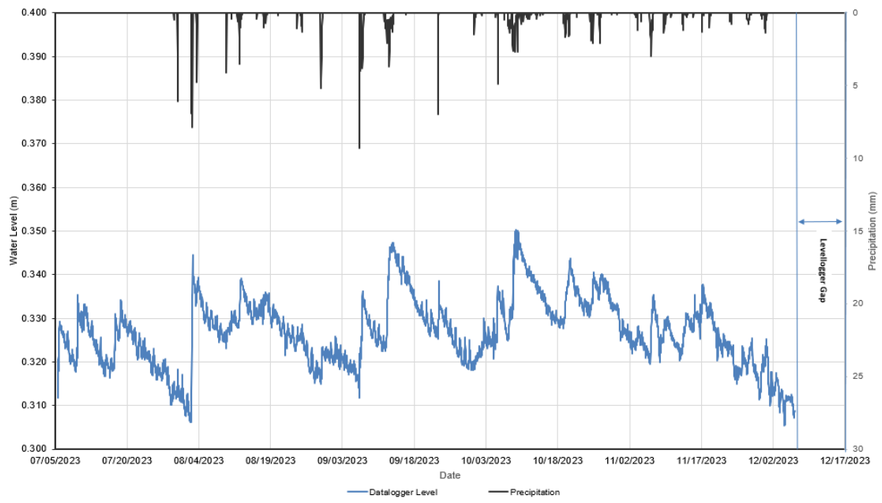
Photo 2



Continuous Water Levels

Hydrometric Monitoring Station SuthLk Summary			
Station ID	SuthLk	**Instrument**	Solinst Levelogger®
Location	North Driftwood - Sutherland Lake	**Measurements**	Continuous levellogger (level and temperature)
Installation Date	July 2023	**Spot Measurements**	Stage
GPS Coordinates	48°47'43"N 81°23'41"W	**Main Channel**	-
Access	Route 655, access road, south of SW-10	**Channel Bottom**	-
Drainage Area	-	**Flood Plain**	-
Period of Record	July 2023 - Ongoing	**Comments**	Monitoring Sutherland Lake Levels
Active	Yes		

Photo 1



Continuous Water Levels

Appendix B.3 Climate Change Supplementary Tables

Table B3.1 Predicted Temperature Changes at Timmins Climate Station – SSP1-2.6, Projection Period 2071-2100, relative to 1971-2000 Climate Normals (ClimateData.ca 2024)

Parameter	Spring	Summer	Autumn	Winter
Median Change in Temperature	+2.7˚C	+2.6˚C	+2.4˚C	+3.3˚C
90th percentile confidence interval	+1.9˚C – +3.6˚C	+1.4˚C – +4.1˚C	+1.7˚C – +4.7ºC	+2.2˚C – +6.3ºC

Table B3.2 Predicted Temperature Changes at Timmins Climate Station – SSP5-8.5, Projection Period 2071-2100, relative to 1971-2000 Climate Normals (ClimateData.ca 2024)

Parameter	Spring	Summer	Autumn	Winter
Median Change in Temperature	+6.4˚C	+6.2˚C	+6.3˚C	+8.3˚C
90th percentile confidence interval	+5.4˚C – +8.1˚C	+4.1˚C – +9.1˚C	+4.9˚C – +10.4ºC	+7.2˚C – +11.5ºC

Table B3.3 Predicted IDF Curve at Timmins Climate Station – SSP1-2.6, Projection Period 2071-2100 - Converted to Total Rainfall Depths (Climatedata.ca 2024)

Duration	Total Precipitation (mm)					
	2-year	5-year	10-year	25-year	50-year	100-year
5 min	8.08	10.58	12.25	14.33	15.83	17.42
10 min	11.83	15.83	18.67	22.17	24.67	27.17
15 min	14.00	19.00	22.50	26.75	29.75	33.00
30 min	18.00	25.50	30.50	36.50	41.50	46.00
1-hour	22.00	30.00	36.00	44.00	49.00	54.00
2-hour	26.00	34.00	40.00	48.00	54.00	60.00
6-hour	34.80	48.60	57.60	72.00	78.00	84.00
12-hour	43.20	60.00	73.20	87.60	97.20	108.00
24-hour	55.20	76.80	91.20	110.40	124.80	139.20

Table B3.4 Total Rainfall (mm) Relative Percent Difference Between Timmins Climate Station and SSP1-2.6 Scenario IDF Curves

Duration	Relative Percent Difference (RPD) (%)					
	2-year	5-year	10-year	25-year	50-year	100-year
5 min	15.8%	15.9%	16.1%	16.0%	15.8%	16.1%
10 min	16.3%	15.6%	16.1%	16.2%	15.9%	15.8%
15 min	15.9%	15.5%	16.1%	16.1%	15.7%	16.0%
30 min	16.1%	16.1%	16.1%	15.5%	16.1%	16.0%
1-hour	17.3%	14.7%	15.3%	16.6%	15.7%	15.2%
2-hour	16.2%	13.5%	14.0%	15.0%	15.6%	16.3%
6-hour	15.5%	16.0%	15.6%	19.2%	16.2%	13.6%
12-hour	16.7%	16.0%	16.4%	16.4%	16.0%	15.6%
24-hour	17.4%	15.6%	15.8%	15.2%	15.4%	15.5%

Notes:

RPD are colour coded accordingly:

<15%	15-20%	20-25%	**25-30%**	**30-35%**	**> 35%**

Table B3.5 Total Rainfall (mm) Percent Difference Between Timmins Climate Station and SSP2-4.5 Scenario IDF Curves

Duration	RPD (%)					
	2-year	5-year	10-year	25-year	50-year	100-year
5 min	22.9%	22.6%	22.9%	22.8%	22.7%	22.7%
10 min	22.9%	22.9%	23.0%	22.6%	22.7%	22.9%
15 min	22.8%	22.7%	23.0%	22.6%	22.8%	23.0%
30 min	22.6%	22.2%	22.4%	22.9%	22.7%	22.7%
1-hour	24.2%	22.4%	21.8%	23.5%	22.1%	22.4%
2-hour	22.1%	22.6%	21.8%	21.5%	24.0%	21.6%
6-hour	22.2%	22.7%	19.0%	25.4%	22.1%	24.4%
12-hour	23.1%	22.2%	22.7%	22.8%	22.7%	22.4%
24-hour	24.0%	22.9%	22.0%	22.0%	22.8%	22.2%

Note:

RPD are colour coded accordingly:

<15%	15-20%	20-25%	**25-30%**	**30-35%**	**> 35%**

Table B3.6 Predicted IDF Curve at Timmins Climate Station – SSP5-8.5, Projection Period 2071-2100 - Converted to Total Rainfall Depths (Climatedata.ca 2024)

Duration	Total Precipitation (mm)					
	2-year	5-year	10-year	25-year	50-year	100-year
5 min	10.67	13.92	16.08	18.83	20.83	22.92
10 min	15.50	21.00	24.50	29.17	32.50	35.83
15 min	18.50	25.25	29.50	35.25	39.25	43.50
30 min	23.50	33.50	40.00	48.50	54.50	60.50
1-hour	28.00	40.00	48.00	57.00	65.00	72.00
2-hour	34.00	46.00	54.00	64.00	72.00	78.00
6-hour	46.20	66.00	78.00	90.00	102.00	114.00
12-hour	56.40	79.20	96.00	114.00	132.00	144.00
24-hour	72.00	100.80	120.00	146.40	165.60	184.80

Table B3.7 Total Rainfall (mm) Percent Difference Between Timmins Climate Station and SSP5-8.5 Scenario IDF Curves

Duration	RPD (%)					
	2-year	5-year	10-year	25-year	50-year	100-year
5 min	36.2%	36.0%	36.1%	36.1%	36.0%	36.2%
10 min	36.1%	36.3%	36.1%	36.3%	36.2%	36.2%
15 min	36.4%	36.4%	36.0%	36.3%	36.1%	36.3%
30 min	35.7%	36.1%	36.0%	36.4%	36.1%	36.1%
1-hour	35.0%	36.0%	36.5%	35.6%	36.5%	36.4%
2-hour	35.9%	36.1%	36.3%	36.3%	36.7%	35.6%
6-hour	36.4%	38.2%	37.7%	35.3%	35.9%	36.3%
12-hour	36.2%	36.4%	36.3%	35.8%	38.2%	36.7%
24-hour	36.7%	35.7%	36.0%	36.1%	36.2%	36.4%

Notes:

RPD are colour coded accordingly:

<15%	15-20%	20-25%	25-30%	30-35%	> 35%

Table B3.8 Timmins Projected Wet Year, Dry Year, Climate Normal under SSP2-4.5 for 2071-2100 - Annual & Monthly Rainfall (mm)

Condition	Wet Year (mm)		Dry Year (mm)		2071-2100 Climate Normal (mm)
Return Period	50 year	100 year	50 year	100 year	
January	3.24	3.41	1.49	1.40	2.24
February	5.31	5.59	2.44	2.29	3.68
March	26.83	28.27	12.31	11.59	18.59
April	67.78	71.43	31.09	29.27	46.96
May	106.32	112.04	48.77	45.91	73.67
June	119.76	126.20	54.93	51.71	82.98
July	123.32	129.95	56.56	53.25	85.44
August	117.86	124.19	54.06	50.89	81.66
September	135.20	142.47	62.01	58.38	93.67
October	110.71	116.66	50.78	47.81	76.71
November	63.06	66.45	28.93	27.23	43.69
December	14.19	14.95	6.51	6.13	9.83
Annual	**893.58**	**941.62**	**409.87**	**385.86**	**619.11**

Table B3.9 Timmins Projected Wet Year, Dry Year, Climate Normal under SSP2-4.5 for 2071-2100 - Annual & Monthly Snowfall (mm water equivalent)

Condition	Wet Year (mm water equivalent)		Dry Year (mm water equivalent)		2071-2100 Climate Normal (mm water equivalent)
Return Period	**50 year**	**100 year**	**50 year**	**100 year**	
January	103.27	109.56	36.34	32.14	67.48
February	75.20	79.77	26.46	23.40	49.13
March	69.16	73.36	24.33	21.52	45.18
April	21.02	22.30	7.40	6.54	13.74
May	2.57	2.72	0.90	0.80	1.68
June	0.03	0.03	0.01	0.01	0.02
July	0.00	0.00	0.00	0.00	0.00
August	0.00	0.00	0.00	0.00	0.00
September	0.19	0.21	0.07	0.06	0.13
October	11.00	11.67	3.87	3.43	7.19
November	64.19	68.10	22.59	19.98	41.94
December	99.21	105.25	34.91	30.88	64.82
Annual	**445.85**	**472.98**	**156.87**	**138.77**	**291.31**

Appendix B.4 Regional Hydrology Supplementary Tables

Table B4.1 Region Hydrological Station Homogeneity Test Summary Table

WSC Data							OWIT Data				Calculated	Observed Homogeneity	
#	Station Name	Station Number	Record Length	Period of Record	Gross Drainage Area (km^2)	Distance to Site	Annual Precipitation (mm)	Annual Precipitation RPD (%)	Primary Land Cover	Area of Lakes/ Wetlands (%)	Unit flow ($L/s/km^2$)	FDC curve	Index Curve
1	BLANCHE RIVER ABOVE ENGLEHART	02JC008	56	1968-2023	1780	150 km SE	811	-3%	Mixed Treed 45%	8%	22.32	OUT	OUT
2	IVANHOE RIVER AT FOLEYET	04LC003	20	2002-2023	1640	100 km SW	844	1%	Mixed Treed 38%, Disturbance 16%	15%	10.82	good	good
3	MATTAWISHKWIA RIVER AT HEARST	04LK001	26	1985-1993; 2006-2023	1170	190 km NW	768	-8%	Swamp 40%	64%	11.92	OUT	good
4	KAMISKOTIA RIVER ABOVE ENID CREEK	04LB002	16	2009-2023	926	25 km SW	836	0%	Mixed Treed 40%	12%	11.45	OUT	OUT
5	TATACHIKAPIKA RIVER NEAR TIMMINS	04LA003	23	2001-2023	872	52 km S	830	-1%	Mixed Treed 41%	12%	12.01	good	good
6	NEMEGOSENDA RIVER NEAR CHAPLEAU	04LE002	18	2006-2023	432	150 km SW	869	4%	Mixed Treed 31%, Disturbance 20%	19%	10.41	good	good
7	PORCUPINE RIVER AT HOYLE	04MD004	34	1977-1994; 2007-2022	408	37 km SE	836	0%	Mixed Treed 31%	17%	13.63	good	good
8	MOLLIE RIVER AT HIGHWAY NO. 144	04LA006	17	2007-2023	92.5	150 km S	828	-1%	Mixed Tree 45%	18%	11.79	good	good
	Combined Project Watersheds				1076	-	834.6	0%	Mixed Treed 27.3%	24.7%			
									Mean	21%	13.04		
									Standard Deviation	0.168	3.620		

Table B4.2 Mean Monthly Relationship and Regression Results

Month	Coefficient (C)	Exponent (b)	R^2
January	0.0066	0.9637	0.9654
February	0.0057	0.9419	0.9307
March	0.0083	0.9379	0.9861
April	0.0178	1.0306	0.8965
May	0.0476	0.9451	0.9570
June	0.012	1.0305	0.9864
July	0.0104	0.9558	0.9960
August	0.0057	0.9888	0.9853
September	0.0102	0.9237	0.9747
October	0.0143	0.9656	0.9794
November	0.012	1.0125	0.9963
December	0.0101	0.9736	0.9886

Notes:
Where the relationship is of the form $Q = CA^b$
Where Q is the flow in m^3/s and A is the catchment area in km^2

Table B4.3 Local Site Station Environmental Low Flows using the Tessman Method

	Environmental Low Flows (m3/s)								
	SW-1	**SW-2b**	**SW-3**	**SW-4**	**SW-5**	**SW-6b**	**SW-7**	**SW-8**	**SW-9**
Drainage Area (km2)	7.2	105.5	14.3	13.6	154.5	199	72.3	92.5	12.3
January	0.037	0.588	0.086	0.082	0.849	1.084	0.409	0.436	0.074
February	0.037	0.459	0.070	0.067	0.657	0.834	0.321	0.405	0.061
March	0.037	0.656	0.101	0.096	0.938	1.189	0.460	0.436	0.087
April	0.054	2.166	0.276	0.262	3.209	1.800	1.467	0.756	0.236
May	0.123	3.889	0.588	0.561	4.187	2.833	2.225	1.374	0.436
June	0.037	1.459	0.186	0.177	2.162	1.800	0.989	0.510	0.159
July	0.037	0.893	0.132	0.126	1.286	1.638	0.622	0.436	0.114
August	0.037	0.571	0.079	0.075	0.832	1.069	0.393	0.436	0.068
September	0.037	0.754	0.119	0.114	1.073	1.355	0.532	0.436	0.104
October	0.038	1.285	0.187	0.178	1.858	1.800	0.892	0.453	0.161
November	0.037	1.342	0.177	0.169	1.975	1.800	0.915	0.470	0.152
December	0.037	0.942	0.135	0.128	1.366	1.748	0.652	0.436	0.116

Table B4.4 Local Site Station Mean Monthly Flows

	Mean Monthly Flows (m^3/s)								
	SW-1	**SW-2b**	**SW-3**	**SW-4**	**SW-5**	**SW-6b**	**SW-7**	**SW-8**	**SW-9**
Drainage Area (km^2)	7.2	105.5	14.3	13.6	154.5	199	72.3	92.5	12.3
January	0.044	0.588	0.086	0.082	0.849	1.084	0.409	0.518	0.074
February	0.037	0.459	0.070	0.067	0.657	0.834	0.321	0.405	0.061
March	0.053	0.656	0.101	0.096	0.938	1.189	0.460	0.580	0.087
April	0.136	2.166	0.276	0.262	3.209	4.165	1.467	1.891	0.236
May	0.308	3.889	0.588	0.561	5.577	7.084	2.721	3.434	0.510
June	0.092	1.459	0.186	0.177	2.162	2.806	0.989	1.274	0.159
July	0.069	0.893	0.132	0.126	1.286	1.638	0.622	0.788	0.114
August	0.040	0.571	0.079	0.075	0.832	1.069	0.393	0.501	0.068
September	0.063	0.754	0.119	0.114	1.073	1.355	0.532	0.668	0.104
October	0.096	1.285	0.187	0.178	1.858	2.372	0.892	1.132	0.161
November	0.089	1.342	0.177	0.169	1.975	2.551	0.915	1.175	0.152
December	0.069	0.942	0.135	0.128	1.366	1.748	0.652	0.829	0.116

Appendix B.5 Regional Water Quality Data

Table
Summary of Surface Water Analytical Data - 18013700102
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					18013700102																			
Sample Date					31-May-88	19-Jun-88	17-Jul-88	14-Aug-88	20-Sep-88	24-Oct-88	20-Nov-88	14-Dec-88	15-Jan-89	13-Feb-89	13-Mar-89	23-May-89	17-Jun-89	16-Jul-89	12-Aug-89	24-Sep-89	18-Oct-89	19-Nov-89	9-Dec-89	18-Mar-90	31-May-91	20-Jul-91
Sample ID					18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02
General Chemistry																									
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{+1.6}$[C]	n/v	-	170	163	101	124	72	64	93	119	141	165	69	81	146	26	176	163	78	94	39	111.8	296.8
Ammonium	mg/L	n/v	n/v	n/v	-	0.09	0.18	0.08	0.14	0.02	0.02	0.01	0.14	0.14	0.22	0.04	0.03	0.06	0.11	0.01	0.01	0.01	0.05	0.04	0.04	0.02
Chloride	mg/L	640[A] 120[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	>5.5/6.0/6.5/9.5$_{VAR}$[B]	$_{s9}$[C]	n/v	-	7	6	6	6	9	13	-	8	9	9	10	8	9	-	10	8	8	7	-	10	10
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	-	344	474	261	296	168	149	227	249	288	551	145	167	282	83	363	328	209	229	116	225	1,149
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	1
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550[A] 13[B]	n/v	n/v	-	0.05	3.56	1.17	1.67	0.005	0.03	0.09	0.1	0.16	0.29	0.01	0.005	0.005	0.04	0.01	0.005	0.02	0.17	0.12	0.01	0.25
Nitrite	mg/L	0.20$_{1h}$[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	-	7.7	7.8	7.4	7.2	7.4	7.6	7.3	7.5	7.7	7.6	7.6	7.7	7.7	7.6	7.7	7.9	7.6	7.8	7.3	7.7	7.5
Phosphorus, Total	mg/L	n/v	0.030$_{s4}$[E]	n/v	-	**0.05**[E]	**0.22**[E]	**0.15**[E]	**0.12**[E]	0.02	0.02	**0.04**[E]	**0.07**[E]	**0.1**[E]	**0.28**[E]	0.03	0.03	**0.04**[E]	**0.06**[E]	0.03	0.03	**0.05**[E]	**0.67**[E]	**0.04**[E]	**0.05**[E]	0.03
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	6	30	6	3	25	700	10	10	4
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	-	8	8	8	8	8	8	-	4	4	4	8	8	8	-	8	8	4	4	3	-	-
Sulfate	mg/L	n/v	n/v	128-429[F] $_{s2}$	-	11.4	35.32	19.9	15.4	10	8.53	8.79	8.29	9.12	11.8	5.71	4.46	1.6	8.7	4.32	5.73	23.2	15.8	12.9	4.7	35.6
BC MECC Sulfate Guideline (s2)					309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309
Temperature, Lab	deg C	n/v	n/v	n/v	-	19	20	26	16	8	2	-	1	1	1	13	16	24	-	13	3	1	0.1	1	2.1	25
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	-	0.86	1.1	1.2	1.3	0.56	0.43	0.61	0.95	0.78	2	0.64	0.53	-	-	-	-	-	-	-	-	-
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	-	3.4	4.3	99	20	10	11	24	38	46	148	19	18	-	-	-	-	-	-	-	-	-
Metals																									
Aluminum	µg/L	5/100$_{VAR1}$[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5[B]	100[C] 5[E]	n/v	-	**180**[BCE]	**1,180**[BCE]	**780**[BCE]	**420**[BCE]	**9**[BE]	**25**[BE]	**19**[BE]	**18**[BE]	**20**[BE]	**37**[BE]	**14**[BE]	**14**[BE]	**35**[BE]	-	-	**33**[BE]	**59**[BE]	**43**[BE]	**6**[BE]	**44**[BE]	**46**[BE]
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	1,100$_{s3}$[C]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Cadmium	µg/L	2.8$_{STB}$[A] 0.2$_{LTG}$[B]	0.2[C] 0.5$_{s12}$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					2.83	2.83	2.83	2.83	2.83	2.83	2.83	2.83	2.83	2.83	2.83	2.83	2.83	2.83	2.83	2.83	2.83	2.83	2.83	2.83	2.83	2.83
CWQG Cadmium Guideline (LTG)					0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	3+[B]	5[C] 5$_{s13}$[E]	n/v	<2	<0.7	<2.3	**6**[BCE]	<1.5	2.9	<0.5	<1.2	**<9**	**<5**	**85**[BCE]	**3.2**[B]	<1.8	-	-	-	-	-	-	-	-	-
CCME Copper Guideline					3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300[B]	300[C]	n/v	**690**[BC]	230	200	**3,600**[BC]	**1,200**[BC]	**550**[BC]	**520**[BC]	**980**[BC]	**2,000**[BC]	**2,000**[BC]	**6,300**[BC]	**850**[BC]	**1,200**[BC]	-	-	-	-	-	-	-	-	-
Lead	µg/L	4.5#[B]	25$_{s14}$[C] 5$_{s15}$[E]	n/v	<2	<2	<2	<4.5	<3.5	<2	<2	<2	**<20**	**<20**	**<42**	<2	<4.5	-	-	-	-	-	-	-	-	-
CCME Lead Guideline					4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
PWQO Lead Guideline (s14)					25	25	25	25	25	20	20	25	25	25	25	20	25	25	10	25	25	20	25	10	25	25
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	8,550$_{EQ3}$[A] 390$_{EQ4}$[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					8606.8	8606.8	8606.8	8606.8	8606.8	8606.8	8606.8	8606.8	8606.8	8606.8	8606.8	8606.8	8606.8	8606.8	8606.8	8606.8	8606.8	8606.8	8606.8	8606.8	8606.8	8606.8
CCME Manganese Guideline (EQ4)					500	500	500	660	660	660	570	660	570	500	570	570	500	500	570	500	500	570	500	660	500	570
Mercury	µg/L	0.026[B]	0.2[C]	n/v	***<0.03***	***<0.03***	***<0.03***	***<0.03***	-	**0.03**[B]	**0.03**[B]	-	-	-	-	-	-	<0.01	-	**0.06**[B]	***<0.03***	<0.01	**0.09**[B]	<0.01	***<0.03***	<0.01
Molybdenum	µg/L	73[B]	40[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	118**[B]	25[C]	n/v	<1.5	<2	<2.5	8	<4.5	<1	<1	<1.5	<10	<10	<13	<2.5	<3	-	-	-	-	-	-	-	-	-
CCME Nickel Guideline					119.4	119.4	119.4	119.4	119.4	119.4	119.4	119.4	119.4	119.4	119.4	119.4	119.4	119.4	119.4	119.4	119.4	119.4	119.4	119.4	119.4	119.4
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	171$_{EQ1}$[A] 42$_{EQ2}$[B]	30[C] 20[E]	n/v	<4	<2.5	<1.8	14	9.1	<3.8	<2.7	<3.4	<18	<10	<28	<4.9	8.4	**23**[E]	3	**300**[ABCE]	**110**[BCE]	<28	**1,400**[ABCE]	<10	16	**2,500**[ABCE]
CCME Zinc Guideline (EQ1)					84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4	84.4
CCME Zinc Guideline (EQ2)					32	37.6	34.7	48.1	56.6	48.1	40.8	52.2	44.3	37.6	40.8	40.8	37.6	37.6	40.8	37.6	32	40.8	34.7	52.2	37.6	44.3

See notes on last page

Table
Summary of Surface Water Analytical Data - 18013700102
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					18013700102																			
Sample Date					15-Oct-91	29-Sep-92	15-Dec-92	28-Mar-93	21-Jun-93	28-Apr-03	2-Jun-03	7-Jul-03	12-Aug-03	9-Sep-03	21-Oct-03	10-Nov-03	20-Apr-04	26-May-04	21-Jun-04	26-Jul-04	24-Aug-04	22-Sep-04	18-Oct-04	25-Apr-05	7-Jun-05	11-Jul-05
Sample ID					18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102	18013700102
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02	HIST_180137001 02
General Chemistry																										
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\pm 1.6}$[C]	n/v	102.5	110	103.5	68.1	110	102	103	116	116	149	142	105	90.8	135	148	111	32	137	148	121	133	157
Ammonium	mg/L	n/v	n/v	n/v	0.05	0.03	0.04	0.19	0.02	0.028	0.063	0.111	0.122	0.06	0.519	0.211	0.135	0.015	0.039	<0.006	0.015	<0.002	0.634	0.203	0.142	<0.005
Chloride	mg/L	640[A] 120[B]	n/v	n/v	-	-	-	-	-	24.4	20	23.5	21.5	34.1	27.2	20.9	13.8	31.5	34.8	20.1	27.9	26.9	28.2	24.5	30	39.9
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	19.9	30.9	31.5	25.8	31.9	32.2	33.9	27.5	31.6	36.4
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	3.6	4.5	5.5	4.4	4.5	4.9	4.7	4.4	4.9	6
Dissolved Oxygen	mg/L	>5.5/6.0/6.5/9.5$_{VAR}$[B]	$_{s9}$[C]	n/v	9	-	6.5	8	6	11.07	9.3	8.83	9.36	11.12	12.22	16.87	11.85	11	10.07	9.93	10.7	9.05	13.37	12.99	10.11	8.49
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	252	226	223	148	215	296,000	280,000	316,000	309,000	409,000	391,000	279,000	220,000	365,000	405,000	291,000	299,000	372,000	397,000	317,000	365,000	430,000
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	8	8	4	-	-	295	277	321	307	405	391	289	234	372	402	302	372	367	395	339	319	443
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	125	117	74	113	115	110	125	122	159	149	114	103	144	157	117	143	138	153	127	143	168
Nitrate	mg/L	550[A] 13[B]	n/v	n/v	0.03	0.02	0.05	0.39	0.01	0.074	0.035	0.074	0.059	0.155	0.212	0.093	0.131	0.044	0.146	<0.012	0.044	0.415	0.324	0.087	0.06	0.039
Nitrite	mg/L	0.20$_{hh}$[B]	n/v	n/v	-	-	-	-	-	0.009	0.017	0.023	0.012	0.009	0.009	0.005	0.008	0.007	0.044	<0.003	0.01	<0.001	0.023	0.005	0.02	<0.003
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	-	-	-	-	-	8.16	8.34	8.4	7.74	7.77	7.79	7.44	7.78	7.83	**8.95**[C]	8.46	7.83	7.94	8.3	8.19	**8.64**[C]	8.36
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	7.5	7.7	7.3	7	7.7	8.11	8.3	8.37	8.09	8.17	8.05	8.28	8.25	8.38	**8.94**[C]	8.49	7.66	8.17	8.44	8.33	8.44	8.46
Phosphorus, Total	mg/L	n/v	0.030$_{s4}$[E]	n/v	**0.05**[E]	**0.05**[E]	0.03	**0.11**[E]	0.03	**0.122**[E]	**0.049**[E]	**0.085**[E]	**0.124**[E]	**0.146**[E]	**0.199**[E]	**0.044**[E]	**0.046**[E]	**0.091**[E]	**0.241**[E]	**0.058**[E]	**0.107**[E]	**0.143**[E]	**0.334**[E]	**0.09**[E]	**0.186**[E]	**0.145**[E]
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	-	-	-	-	-	0.015	0.023	0.0821	0.0668	0.0935	0.0658	0.0303	0.04	0.0396	0.217	0.0621	0.0735	0.089	0.186	0.0483	0.121	0.135
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	1.68	1.22	1.4	1.58	1.46	1.28	1.84	2	1.44	1.54
Residue,Particulate	mg/L	n/v	n/v	n/v	15	9	10	50	6	19.8	<2.4	3.1	<2.2	3.1	3.5	<1.9	7.5	<2.3	3	<1	<2	3.4	<2.4	4.2	3	2.6
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	192	182	205	201	266	254	181	143	237	263	189	194	242	258	206	237	280
Stream Condition	none	n/v	n/v	n/v	-	-	-	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	128-429$^{F}_{s2}$	18	7.11	9.94	4.93	3.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC MECC Sulfate Guideline (s2)					309	309	309	218	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309
Temperature, Lab	deg C	n/v	n/v	n/v	6	1.5	1	0.1	21	11	19.3	26.1	16.1	10.3	4.9	2.7	8.9	11.3	16.1	23.6	10.2	14.5	8	6.7	18.4	27.5
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	-	-	-	-	-	0.42	0.44	0.51	0.53	0.54	0.9	0.52	0.45	0.34	0.51	0.29	0.34	0.51	1.07	0.56	0.52	0.44
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	212	184	209	203	269	258	183	150	240	266	190	196	245	260	210	240	282
Turbidity, Lab	NTU	n/v	n/v	n/v	-	-	-	-	-	6.97	1.3	1.72	1.38	1.16	2.75	1.65	2.83	1.77	1.88	1.44	1.49	2.98	1.95	2.48	1.58	1.47
Metals																										
Aluminum	µg/L	5/100$_{VAR1}$[B]	n/v	n/v	-	-	-	-	-	**118**[B]	26.6	28.2	25.6	13.7	63.8	12.5	52.2	28.4	33	19.1	30.1	40.4	23.1	-	26.3	22.9
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5[B]	100[C] 5[E]	n/v	**43**[BE]	**48**[BE]	**5.6**[BE]	**35**[BE]	**24**[BE]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	8.79	8.27	9.16	9.03	9.64	9.62	7.42	6.89	9.27	8.36	7.42	10.6	10.3	6.92	-	10.4	16.1
Beryllium	µg/L	n/v	1,100$_{s3}$[C]	n/v	-	-	-	-	-	0.011	0.00673	0.00761	0.0036	0.00449	0.0264	0.00682	0.00433	0.00824	0.0256	0.0163	0.00389	0.0077	0.00802	-	0.0108	0.0143
PWQO Beryllium Guideline					1100	1100	1100	11	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Cadmium	µg/L	2.8$_{STB}$[A] 0.2$_{LTG}$[B]	0.2[C] 0.5$_{s12}$[E]	n/v	-	-	-	-	-	-0.185	**0.429**[BC]	**0.239**[BC]	**0.364**[BC]	**0.324**[BC]	**0.649**[BCE]	-0.0434	-0.325	-0.711	**0.743**[BCE]	**0.242**[BC]	**0.492**[BC]	-0.412	**0.222**[C]	-	**0.25**[BC]	-0.127
CWQG Cadmium Guideline (STB)					2.83	2.63	2.46	1.55	2.38	2.42	2.31	2.63	2.57	3.36	3.15	2.4	2.16	3.04	3.32	2.46	3.02	2.91	3.23	2.68	3.02	3.56
CWQG Cadmium Guideline (LTG)					0.2	0.19	0.18	0.12	0.18	0.18	0.17	0.19	0.19	0.23	0.22	0.18	0.16	0.21	0.23	0.18	0.21	0.21	0.23	0.19	0.21	0.24
PWQO Cadmium Guideline					0.5	0.5	0.5	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	34,400	32,900	37,000	36,000	47,800	43,800	33,800	30,700	43,200	46,200	34,600	42,200	40,900	44,800	37,900	43,000	49,900
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	1.52	0.464	-0.209	-0.676	-0.463	0.051	0.171	-5.06	0.608	1	-1.87	-1.46	-0.321	-0.0924	-	0.0865	0.236
Cobalt	µg/L	n/v	0.9[E]	n/v	-	-	-	-	-	**39.4**[E]	**25.3**[E]	**26.7**[E]	**31.6**[E]	**47.9**[E]	**123**[E]	**26.1**[E]	**38.8**[E]	**35.6**[E]	**23.7**[E]	**18.8**[E]	**52.2**[E]	**47.7**[E]	**35.1**[E]	-	**17.4**[E]	**6.07**[E]
Copper	µg/L	3+[B]	5[C] 5$_{s13}$[E]	n/v	-	-	-	-	-	**7.2**[BCE]	**4.7**[B]	**4.73**[B]	**3.36**[B]	2.99	**8.82**[BCE]	**3.25**[B]	**4.35**[B]	**3.73**[B]	**5.44**[BCE]	**3.91**[B]	**3.74**[B]	**3.2**[B]	3.01	-	**3.8**[B]	3.42
CCME Copper Guideline					3	2.9	2.7	2	2.6	2.7	2.6	2.9	2.8	3.5	3.3	2.6	2.4	3.2	3.5	2.7	3.2	3.1	3.4	2.9	3.2	3.7
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300[B]	300[C]	n/v	-	-	-	-	-	206	104	127	131	91.3	149	57.2	107	85.5	184	98.5	117	143	105	-	169	131
Lead	µg/L	4.5#[B]	25$_{s14}$[C] 5$_{s15}$[E]	n/v	-	-	-	-	-	-2.01	-3.66	-0.964	**6.87**[BE]	-4.89	1.99	-1.04	-9.35	2.15	-12.7	0.363	**9.5**[BE]	-5.81	-7.97	-	0.154	1.57
CCME Lead Guideline					4.6	4.2	3.9	2.2	3.7	3.8	3.6	4.2	4.1	5.7	5.3	3.8	3.3	5.1	5.6	3.9	5	4.8	5.5	4.3	5	6.2
PWQO Lead Guideline (s14)					25	25	25	20	25	25	25	25	25	25	25	25	25	25	25	25	10	25	25	25	25	25
PWQO Lead Guideline (s15)					5	5	5	3	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	7,100	6,880	7,940	7,800	9,660	9,720	7,180	6,440	8,880	10,100	7,360	9,040	8,820	9,960	7,860	8,760	10,600
Manganese	µg/L	8,550$_{EQ3}$[A] 390$_{EQ4}$[B]	n/v	n/v	-	-	-	-	-	36.2	27.2	37.2	48.6	34.4	42.7	22.3	26.5	43.7	28.3	22.5	31.4	77.4	32.7	-	41.2	23.9
CCME Manganese Guideline (EQ3)					8606.8	8097.1	7640.3	5110.1	7410.5	7525.5	7237.4	8097.1	7926.2	10001.6	9447.1	7468	6831.4	9168.2	9891	7640.3	9112.3	8831.9	9669.4	8210.7	9112.3	10497
CCME Manganese Guideline (EQ4)					570	500	610	500	470	370	370	390	370	400	390	370	370	390	260	250	570	390	260	390	260	260
Mercury	µg/L	0.026[B]	0.2[C]	n/v	***<0.04***	<0.01	<0.01	-	***<0.03***	***<0.05***	***<0.03***	***<0.03***	***<0.03***	<0.02	***<0.05***	<0.02	***<0.03***	***<0.03***	***<0.03***	***<0.03***	<0.02	<0.02	<0.02	***<0.03***	<0.02	<0.02
Molybdenum	µg/L	73[B]	40[E]	n/v	-	-	-	-	-	1.08	1.21	0.947	2.84	1.51	4.84	1.23	1.13	1.86	1.78	2.51	4.72	2.24	1.72	-	2.45	2.58
Nickel	µg/L	118**[B]	25[C]	n/v	-	-	-	-	-	23.8	16.3	17	16.7	23.9	**55.5**[C]	15.3	20.5	22.3	21.6	13.8	**27.8**[C]	**26.3**[C]	21	-	14.7	9.53
CCME Nickel Guideline					119.4	113.2	107.7	76	104.9	106.3	102.8	113.2	111.2	136	129.4	105.6	97.7	126.1	134.7	107.7	125.4	122.1	132	114.6	125.4	141.8
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	950	950	990	890	1,430	1,600	1,040	840	1,230	1,190	790	990	1,330	1,980	1,190	1,220	1,350
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	15,500	12,900	15,700	14,300	23,100	19,300	14,100	9,360	20,300	22,600	13,800	20,300	19,300	20,000	15,900	19,600	25,400
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	46.1	45	52.9	47.2	65.2	62	42.9	35.5	57.1	61.2	47.6	65	58.8	51.5	-	60.8	75.1
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	2.74	0.361	0.203	0.047	-0.306	0.926	-0.14	1.25	-0.00289	0.922	-0.0746	0.608	0.901	-0.00497	-	-0.0724	-0.108
Vanadium	µg/L	n/v	6[E]	n/v	-	-	-	-	-	0.316	0.15	0.0585	0.61	-0.159	-0.324	-0.291	0.768	-0.564	1.24	0.923	0.114	0.77	0.926	-	-0.574	0.411
Zinc	µg/L	171$_{EQ1}$[A] 42$_{EQ2}$[B]	30[C] 20[E]	n/v	**21**[E]	17	6.4	9.3	<1	12.2	4.92	5.32	6.73	5.56	**30.6**[CE]	9.38	12.1	8.73	4.12	3.5	7.44	5.83	4.05	-	3.74	1.52
CCME Zinc Guideline (EQ1)					84.4	79.7	75.4	51.5	73.3	74.3	71.6	79.7	78.1	97.4	92.2	73.8	67.8	89.6	96.3	75.4	89.1	86.5	94.3	80.7	89.1	101.9
CCME Zinc Guideline (EQ2)					44.3	35.3	45.9	38	32	23.3	19.2	20.4	25.1	30.2	31.3	20.1	16.4	22.2	16.5	16.5	39.7	26.2	22.8	20.4	21.7	27

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Table
Summary of Surface Water Analytical Data - 18013700102
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					18013700102			
Sample Date					15-Aug-05	12-Sep-05	3-Oct-05	31-Oct-05
Sample ID					18013700102	18013700102	18013700102	18013700102
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_18013700102	HIST_18013700102	HIST_18013700102	HIST_18013700102
General Chemistry								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\pm 1.6}$[C]	n/v	161	129	150	157
Ammonium	mg/L	n/v	n/v	n/v	0.137	0.061	0.506	0.278
Chloride	mg/L	640[A] 120[B]	n/v	n/v	44.3	40.5	42.9	42.6
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	37.8	29.4	34.6	34.7
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	7.5	4.2	5.6	4.7
Dissolved Oxygen	mg/L	>5.5/6.0/6.5/9.5$_{VAR}$[B]	$_{s9}$[C]	n/v	9.04	8.75	10.6	11.77
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	475,000	389,000	459,000	460,000
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	481	404	470	483
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	165	134	157	175
Nitrate	mg/L	550[A] 13[B]	n/v	n/v	1.23	0.204	0.653	0.462
Nitrite	mg/L	0.20$_{s1}$[B]	n/v	n/v	0.189	0.03	0.037	0.029
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	8.41	**8.69**[C]	8.3	8.01
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	8.35	8.47	8.37	8.12
Phosphorus, Total	mg/L	n/v	0.030$_{s4}$[E]	n/v	-	**0.214**[E]	**0.437**[E]	**0.191**[E]
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.36	0.0874	0.321	0.14
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	1.24	1.44	2.02	2.12
Residue,Particulate	mg/L	n/v	n/v	n/v	4.4	3.9	<1.9	4.4
Residue-Filterable	mg/L	n/v	n/v	n/v	309	253	298	299
Stream Condition	none	n/v	n/v	n/v	-	-	-	-
Sulfate	mg/L	n/v	n/v	128-429$^{F}_{s2}$	-	-	-	-
BC MECC Sulfate Guideline (s2)					309	309	309	309
Temperature, Lab	deg C	n/v	n/v	n/v	23.2	24.7	18.2	8.6
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	1.05	0.5	1.01	0.56
Total Residue	mg/L	n/v	n/v	n/v	313	257	300	303
Turbidity, Lab	NTU	n/v	n/v	n/v	2.08	1.8	1.65	2.24
Metals								
Aluminum	µg/L	5/100$_{VAR1}$[B]	n/v	n/v	10.5	23.7	12.8	28.8
CWQG Aluminum Guideline					100	100	100	100
Arsenic	µg/L	5[B]	100[C] 5[E]	n/v	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	10.9	12.1	10.4	11.7
Beryllium	µg/L	n/v	1,100$_{s3}$[C]	n/v	-0.00175	0.0117	0.0000224	0.00259
PWQO Beryllium Guideline					1100	1100	1100	1100
Cadmium	µg/L	2.8$_{STB}$[A] 0.2$_{LTG}$[B]	0.2[C] 0.5$_{s12}$[E]	n/v	0.0878	**0.294**[BC]	-0.285	**0.503**[BCE]
CWQG Cadmium Guideline (STB)					3.49	2.83	3.32	3.71
CWQG Cadmium Guideline (LTG)					0.24	0.2	0.23	0.25
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	49,600	37,900	46,100	51,400
Chromium	µg/L	n/v	n/v	n/v	-0.227	0.269	-1.41	0.00556
Cobalt	µg/L	n/v	0.9[E]	n/v	**5.74**[E]	**16.2**[E]	**29.2**[E]	**46.4**[E]
Copper	µg/L	3*[B]	5[C] 5$_{s13}$[E]	n/v	3.04	**4.02**[B]	3.27	**4.78**[B]
CCME Copper Guideline					3.6	3	3.5	3.8
PWQO Copper Guideline					5	5	5	5
Iron	µg/L	300[B]	300[C]	n/v	159	113	120	116
Lead	µg/L	4.5#[B]	25$_{s14}$[C] 5$_{s15}$[E]	n/v	2.96	-0.945	-1.54	2.7
CCME Lead Guideline					6	4.6	5.6	6.5
PWQO Lead Guideline (s14)					25	25	25	25
PWQO Lead Guideline (s15)					5	5	5	5
Magnesium	µg/L	n/v	n/v	n/v	9,920	9,540	10,300	11,200
Manganese	µg/L	8,550$_{EQ3}$[A] 390$_{EQ4}$[B]	n/v	n/v	38.4	44	31.7	37.1
CCME Manganese Guideline (EQ3)					10332.2	8606.8	9891	10880
CCME Manganese Guideline (EQ4)					400	260	400	420
Mercury	µg/L	0.026[B]	0.2[C]	n/v	<0.02	***<0.03***	***<0.09***	***<0.07***
Molybdenum	µg/L	73[B]	40[E]	n/v	1.03	4.84	9.51	9.5
Nickel	µg/L	118*'*[B]	25[C]	n/v	9.91	16.6	23.9	**33.1**[C]
CCME Nickel Guideline					139.8	119.4	134.7	146.2
Potassium	µg/L	n/v	n/v	n/v	2,080	1,470	2,860	2,280
Sodium	µg/L	n/v	n/v	n/v	30,600	27,300	28,700	28,600
Strontium	µg/L	n/v	n/v	n/v	73.7	68.1	71.9	75.1
Titanium	µg/L	n/v	n/v	n/v	-0.124	0.309	0.324	0.828
Vanadium	µg/L	n/v	6[E]	n/v	0.368	0.804	-0.342	1.1
Zinc	µg/L	171$_{EQ1}$[A] 42$_{EQ2}$[B]	30[C] 20[E]	n/v	1.64	5.08	3.46	8.1
CCME Zinc Guideline (EQ1)					100.4	84.4	96.3	105.5
CCME Zinc Guideline (EQ2)					31.7	18.8	26.5	33.6

See notes on last page

Table
Summary of Surface Water Analytical Data - 18771000402
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																									
Sample Date					10-Dec-72	28-Jan-73	25-Feb-73	25-Mar-73	15-Apr-73	27-May-73	3-Jul-73	26-Jul-73	12-Sep-73	30-Sep-73	25-Nov-73	20-Dec-73	29-Jan-74	4-Mar-74	9-Apr-74	28-Apr-74	2-Jun-74	1-Jul-74	6-Aug-74	10-Sep-74	1-Oct-74
Sample ID					18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402
General Chemistry																									
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{s16}^{C}$	n/v	47	52	53	43	42	41	39	49	48	47	44	48	54	51	38	25	37	47	46	51	41
Ammonium	mg/L	n/v	n/v	n/v	0.03	0.06	0.02	0.04	0.01	0.09	0.11	0.03	0.02	0.04	0.01	0.02	0.06	0.36	0.34	0.05	0.04	0.06	0.03	0.01	0.01
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	2	2.5	1.2	1.4	1.4	0.4	1.4	1.8	0.4	1	0.6	-	2.5	3	4.5	2	0.6	0.6	1	0.4	1.2
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	9	9	10	8	7	5	6	6	5	5	-	7	33	15	4	2	4	5	4	30	15
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$_{s9}^{C}$	n/v	9	10	10	10	10	10	10	10	9	9	8	8	8	7	8	11	11	11	10	10	9
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	144	160	176	144	132	128	108	142	-	480	135	147	265	195	110	84	368	72	124	147	109
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	64	70	76	60	58	56	52	62	62	77	58	64	68	60	45	35	48	52	53	62	52
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.34	0.49	0.45	0.36	0.33	0.13	0.11	0.39	0.07	0.02	0.29	0.18	0.24	0.76	0.19	0.41	0.16	0.01	0.01	0.55	0.09
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{s1} ^{B}	n/v	n/v	0.004	0.009	0.01	0.01	0.005	0.008	0.01	0.2	0.009	0.008	0.006	0.01	0.01	0.01	0.01	0.01	0.005	0.006	0.005	0.006	0.009
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.6	-	7.6	7.2	7.3	8.1	7.3	7.1	-	7.6	7.7	7.4	7.6	7.3	6.7	8.3	7.1	7.4	7.7	7.1	8.5
Phosphorus, Total	mg/L	n/v	0.030_{s4} ^{E}	n/v	**0.08**^{E}	**0.08**^{E}	**0.1**^{E}	**0.07**^{E}	**0.07**^{E}	**0.05**^{E}	**0.04**^{E}	0.03	**0.05**^{E}	0.02	**0.05**^{E}	**0.06**^{E}	**0.07**^{E}	**0.04**^{E}	0.02	**0.08**^{E}	**0.05**^{E}	0.03	**0.04**^{E}	0.02	0.02
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.05	0.05	0.07	0.03	0.04	0.008	0.01	0.004	0.02	0.01	0.03	0.04	0.05	0.008	0.002	0.01	0.02	0.009	0.002	0.002	0.006
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	5	5	5	10	0	5	15	10	0	5	-	0	0	10	10	10	10	10	10	10	15
Residue-Filterable	mg/L	n/v	n/v	n/v	95	135	105	80	100	105	55	90	125	125	-	130	200	-	-	55	237	47	81	100	71
Stream Condition	none	n/v	n/v	n/v	4	4	4	3	3	6	6	6	6	6	4	4	4	4	3	3	3	6	6	6	6
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}_{s2}$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC MECC Sulfate Guideline (s2)					218	218	309	218	218	218	218	218	218	309	218	218	218	218	218	218	218	218	218	218	218
Temperature, Lab	deg C	n/v	n/v	n/v	1.5	1	1	1	4.5	11	21	22	19	16	1	0.5	0.5	0.5	0.5	3	14	22	22	20	12
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.89	1.2	0.44	0.64	0.41	0.58	0.7	0.7	0.68	0.57	0.4	0.43	0.86	1.3	0.93	0.5	0.47	0.43	0.54	0.46	0.66
Total Residue	mg/L	n/v	n/v	n/v	100	140	110	90	100	110	70	100	125	130	-	130	200	-	-	65	249	57	91	110	86
Turbidity, Lab	NTU	n/v	n/v	n/v	10	2.2	2.3	5.2	4	2.6	3.2	1.3	3.6	4	2.7	2	3.9	3.6	10	25	3.7	2.6	4.3	2.9	6.3
Metals																									
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	11_{s3} ^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					11	11	1100	11	11	11	11	11	11	1100	11	11	11	11	11	11	11	11	11	11	11
Cadmium	µg/L	1.0_{STB} ^{A} 0.09_{LTG} ^{B}	0.2^{C} 0.1_{s12} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					1.33	1.46	1.59	1.25	1.21	1.16	1.08	1.29	1.29	1.61	1.21	1.33	1.42	1.25	0.93	0.72	1	1.08	1.1	1.29	1.08
CWQG Cadmium Guideline (LTG)					0.11	0.12	0.13	0.1	0.1	0.1	0.09	0.11	0.11	0.13	0.1	0.11	0.12	0.1	0.08	0.07	0.09	0.09	0.09	0.11	0.09
PWQO Cadmium Guideline					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	2^{*B}	5^{C} 5_{s13} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Copper Guideline					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	200	-	**350**^{BC}	**500**^{BC}	**350**^{BC}	250	**500**^{BC}	200	**650**^{BC}	**500**^{BC}	250	200	300	**550**^{BC}	**700**^{BC}	**2,300**^{BC}	**350**^{BC}	**350**^{BC}	**400**^{BC}	300	**800**^{BC}
Lead	µg/L	$1\#^{B}$	20_{s14} ^{C} 3_{s15} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Lead Guideline					1.8	2	2.2	1.7	1	1	1	1.7	1.7	2.3	1	1.8	1.9	1.7	1	1	1	1	1	1.7	1
PWQO Lead Guideline (s14)					20	20	20	20	20	20	10	20	20	20	20	20	20	20	10	10	10	20	20	20	20
PWQO Lead Guideline (s15)					3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$3{,}600_{EQ3}$ ^{A} 430_{EQ4} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					4498.5	4866.7	5231.1	4250.7	4126	4000.8	3748.8	4374.8	4374.8	5291.5	4126	4498.5	4744.4	4250.7	3301.9	2648.1	3494.4	3748.8	3812	4374.8	3748.8
CCME Manganese Guideline (EQ4)					430	430	490	490	490	320	490	500	430	490	390	490	430	490	350	270	380	490	390	500	220
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	25^{**B}	25^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Nickel Guideline					68.1	72.9	77.6	64.8	25	25	25	66.5	66.5	78.4	25	68.1	71.3	64.8	25	25	25	25	25	66.5	25
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	37_{EQ1} ^{A} 7.0_{EQ2} ^{B}	30^{C} 20^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Zinc Guideline (EQ1)					45.6	49.2	52.6	43.2	42	40.8	38.4	44.4	44.4	53.2	42	45.6	48	43.2	34	27.6	35.9	38.4	39	44.4	38.4
CCME Zinc Guideline (EQ2)					27.8	30.2	32.7	36.2	32.3	16.3	29.1	40.5	26.9	33.1	23.3	32.7	29.4	33.4	41.4	8.9	31.8	26.8	21.4	40.5	11

See notes on last page

Table
Summary of Surface Water Analytical Data - 18771000402
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																									
Sample Date															18771000402										
Sample ID					12-Nov-74 18771000402	1-Dec-74 18771000402	4-Feb-75 18771000402	31-Mar-75 18771000402	28-Apr-75 18771000402	27-May-75 18771000402	13-Jul-75 18771000402	12-Aug-75 18771000402	16-Sep-75 18771000402	5-Oct-75 18771000402	5-Dec-75 18771000402	14-Jun-77 18771000402	5-Jul-77 18771000402	2-Aug-77 18771000402	29-Aug-77 18771000402	28-Sep-77 18771000402	30-Oct-77 18771000402	29-Nov-77 18771000402	1-Jan-78 18771000402	31-Jan-78 18771000402	27-Feb-78 18771000402
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02
General Chemistry																									
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{s16}^{C}$	n/v	38	41	53	54	22	39	40	44	67	41	41	42	42	48	60	100	58	42	48	50	54
Ammonium	mg/L	n/v	n/v	n/v	0.01	0.01	0.45	0.01	0.04	0.12	0.07	0.05	0.01	0.02	0.28	0.06	0.05	0.04	0.04	0.05	0.03	0.006	0.004	0.02	0.01
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	1.4	1.2	1.2	0.6	1.8	1	0.8	0.6	1.2	1.2	1.2	1	1.2	0.6	0.4	0.6	0.8	1	0.2	0.2	3.5
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	4	5	8	7	3	5	5	5	4	3	6	6	6.3	6	5.4	2.4	2.7	6.1	7.2	6.8	9.5
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$_{s9}^{C}$	n/v	10	10	8	6	8	10	9	9	8	9	9	10	7	-	7	7	10	11	12	-	12
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	107	130	175	162	76	390	120	133	170	130	135	134	135	143	170	205	148	140	151	159	171
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	61	64	65	67	37	72	53	58	80	58	56	53	50	64	62	103	77	61	58	68	69
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.37	0.19	0.37	0.34	0.27	0.01	0.01	0.06	0.03	0.01	0.3	0.005	0.005	0.05	0.01	0.01	0.14	0.18	0.28	0.25	0.37
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{s1} ^{B}	n/v	n/v	0.005	0.003	0.03	0.004	0.01	0.01	0.007	0.04	0.004	0.008	0.004	0.003	0.003	0.03	0.004	0.002	0.006	0.002	0.01	0.01	0.007
pH, Field	S.U.	6.5-9.0^{B}	6.5-8.5^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	6.5-9.0^{B}	6.5-8.5^{C}	n/v	7.2	7.8	7.3	7.2	7.3	7.5	7.8	7.6	7.9	7.6	7.3	7.98	7.64	7.71	7.75	7.56	7.5	7.68	7.25	7.25	7.09
Phosphorus, Total	mg/L	n/v	0.030_{s4} ^{E}	n/v	0.02	**0.04**^{E}	**0.15**^{E}	**0.06**^{E}	**0.06**^{E}	**0.06**^{E}	**0.04**^{E}	0.03	0.02	0.02	**0.04**^{E}	0.03	**0.22**^{E}	**0.04**^{E}	0.02	0.02	0.02	**0.05**^{E}	**0.06**^{E}	**0.05**^{E}	**0.05**^{E}
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.01	0.02	0.09	0.03	0.008	0.02	0.01	0.01	0.003	0.006	0.007	0.004	0.009	0.002	0.01	0.01	0.009	0.03	0.03	0.04	0.03
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.65	-
Residue,Particulate	mg/L	n/v	n/v	n/v	15	15	15	8	53	17	5	28	5	9	5	5.2	8.3	5	4.8	8	2	21	2	1.9	6
Residue-Filterable	mg/L	n/v	n/v	n/v	80	85	95	106	49	254	78	86	111	85	88	-	-	-	-	-	-	-	-	103	-
Stream Condition	none	n/v	n/v	n/v	6	4	4	4	3	6	6	6	6	6	4	-	-	-	-	-	-	4	4	4	4
Sulfate	mg/L	n/v	n/v	128-429$^{F}_{s2}$	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-
BC MECC Sulfate Guideline (s2)					218	218	218	218	218	218	218	218	309	218	218	218	218	218	218	309	309	218	218	218	218
Temperature, Lab	deg C	n/v	n/v	n/v	2	0	0	0	2	17	23.5	22.5	13.5	11.5	1	15	22	-	18	12	6	0	0	0	0
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.32	0.41	0.8	0.38	0.48	0.67	0.61	0.51	0.4	0.6	1.1	0.78	1.71	0.44	0.41	0.34	0.64	0.46	0.4	0.43	0.96
Total Residue	mg/L	n/v	n/v	n/v	95	100	110	114	102	271	83	114	116	94	93	93	96	99	116	141	98	112	100	105	117
Turbidity, Lab	NTU	n/v	n/v	n/v	3.6	2.4	2.8	2.3	2.2	4.3	3.7	3	4.1	3.5	1.7	3.6	4.2	3.6	4.8	3	4.2	3.6	2.3	3.3	2.7
Metals																									
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	11_{s3} ^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					11	11	11	11	11	11	11	11	1100	11	11	11	11	11	11	1100	1100	11	11	11	11
Cadmium	µg/L	1.0_{STB} ^{A} 0.09_{LTG} ^{B}	0.2^{C} 0.1_{s12} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					1.27	1.33	1.35	1.4	0.76	1.5	1.1	1.21	1.67	1.21	1.16	1.1	1.04	1.33	1.29	2.16	1.61	1.27	1.21	1.42	1.44
CWQG Cadmium Guideline (LTG)					0.11	0.11	0.11	0.11	0.07	0.12	0.09	0.1	0.13	0.1	0.1	0.09	0.09	0.11	0.11	0.16	0.13	0.11	0.1	0.12	0.12
PWQO Cadmium Guideline					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	2^{*B}	5^{C} 5_{s13} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Copper Guideline					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.4	2	2	2	2	2
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	200	200	300	300	150	**600**^{BC}	200	**400**^{BC}	**410**^{BC}	**510**^{BC}	**340**^{BC}	260	290	290	270	250	**480**^{BC}	290	200	210	290
Lead	µg/L	1#^{B}	20_{s14} ^{C} 3_{s15} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Lead Guideline					1.7	1.8	1.8	1.9	1	2.1	1	1	2.4	1	1	1	1	1.8	1.7	3.3	2.3	1.7	1	1.9	2
PWQO Lead Guideline (s14)					10	20	20	20	10	10	10	20	20	20	20	20	20	20	20	25	20	20	20	20	20
PWQO Lead Guideline (s15)					3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	5	3	3	3	3	3
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$3,600_{EQ3}$ ^{A} 430_{EQ4} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-
CCME Manganese Guideline (EQ3)					4312.8	4498.5	4560.2	4683.1	2780.5	4988.6	3812	4126	5472.1	4126	4000.8	3812	3621.9	4498.5	4374.8	6831.4	5291.5	4312.8	4126	4744.4	4805.6
CCME Manganese Guideline (EQ4)					490	390	490	490	380	430	390	430	440	430	490	390	430	390	390	530	490	430	490	490	500
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	25^{**B}	25^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Nickel Guideline					65.6	68.1	68.9	70.5	25	74.5	25	25	80.7	25	25	25	25	68.1	66.5	97.7	78.4	65.6	25	71.3	72.1
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	37_{EQ1} ^{A} 7.0_{EQ2} ^{B}	30^{C} 20^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Zinc Guideline (EQ1)					43.8	45.6	46.2	47.4	28.9	50.3	39	42	54.9	42	40.8	39	37.1	45.6	44.4	67.8	53.2	43.8	42	48	48.6
CCME Zinc Guideline (EQ2)					36.8	23.6	36	40.2	21.1	33.7	19.7	25.3	26.9	25.3	31.2	17	21.3	25.4	23.8	45	35.9	24.9	33.6	39.1	45.2

See notes on last page

Table
Summary of Surface Water Analytical Data - 18771000402
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																									
Sample Date					25-Mar-78	26-Apr-78	29-May-78	22-Jun-78	24-Jul-78	20-Aug-78	25-Sep-78	22-Oct-78	30-Nov-78	28-Dec-78	24-Jan-79	21-Feb-79	28-Mar-79	30-Apr-79	28-May-79	25-Jun-79	29-Jul-79	30-Aug-79	30-Sep-79	23-Oct-79	27-Nov-79
Sample ID					18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02
General Chemistry																									
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\pm 16}^{C}$	n/v	56	34	40	40	39	44	47	40	44	47	53	56	50	-	-	-	-	-	-	-
Ammonium	mg/L	n/v	n/v	n/v	0.16	0.09	0.2	0.13	0.09	0.06	0.02	0.008	0.004	0.04	0.04	0.14	0.12	0.01	0.03	0.07	0.1	0.06	0.06	0.01	0.004
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	1.8	1	1.5	0.5	1	0.2	0.2	1.2	0.4	0.2	0.6	0.4	0.4	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	31	56	31	25	36	37	25	46	41	54	34	14	<10	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	9	7.5	5.9	5.7	5.3	5.7	5.55	5.6	6	11	6.35	6.75	8.7	4.3	5.4	5.2	5.15	5.4	5.2	3.7	3.55
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$_{\pm 9}^{C}$	n/v	10	11	8	11	8	-	-	-	-	12	13	14	-	10	10	9	9	10	9	11	9
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	178	124	128	124	119	132	132	124	138	165	150	155	166	96	119	112	131	123	135	107	107
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	67	50	49	53	52	58	56	52	60	62	62	67	65	-	-	-	-	-	-	-	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.45	0.12	0.005	0.01	0.02	0.06	0.41	0.16	0.3	0.3	0.43	0.43	0.53	0.21	0.18	0.03	0.01	0.04	0.06	0.22	0.49
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{nf} ^{B}	n/v	n/v	0.01	0.01	0.006	0.006	0.006	0.01	0.003	0.004	0.002	0.04	0.01	0.006	0.02	0.01	0.005	0.03	0.006	0.009	0.006	0.007	0.007
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.07	7.28	7.66	7.69	7.41	7.6	7.53	7.99	7.43	7.66	7.29	7.69	7.69	-	-	-	-	-	-	-	-
Phosphorus, Total	mg/L	n/v	0.030_{s4} ^{E}	n/v	**0.07**^{E}	**0.05**^{E}	**0.06**^{E}	0.03	0.03	0.03	0.02	0.03	**0.05**^{E}	**0.06**^{E}	**0.07**^{E}	**0.07**^{E}	**0.05**^{E}	0.03	**0.06**^{E}	0.03	0.02	0.02	0.02	0.03	**0.04**^{E}
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.003	0.001	0.02	0.01	0.003	0.01	0.009	0.01	0.03	0.04	0.05	0.06	0.04	0.01	0.01	0.005	0.004	0.006	0.006	0.004	0.007
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	1.75	2.8	1.3	0.95	0.75	0.6	1	1.45	1.85	2	2.3	2.35	3.2	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	7.4	16	8.1	5.7	5.4	3.4	3.6	3.8	3	6.9	8	2	3	16	6	8	7	5	2	9	10
Residue-Filterable	mg/L	n/v	n/v	n/v	116	81	85	81	77	86	86	81	90	107	98	101	108	62	77	73	85	80	88	70	70
Stream Condition	none	n/v	n/v	n/v	4	-	-	-	-	-	-	-	4	4	4	4	4	3	-	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}_{s2}$	16.5	12	15	15.5	14.5	14.5	14	16	15.5	17.5	17	16.5	16	-	-	-	-	-	-	-	-
BC MECC Sulfate Guideline (s2)					218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218
Temperature, Lab	deg C	n/v	n/v	n/v	0	2	25	18	22	21	11	7	0	0	0	0	0	3	14	16	23	20	15	13	3
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	1.57	0.79	0.76	0.68	0.68	0.44	0.52	0.5	0.43	0.46	0.49	0.55	0.49	0.44	0.55	0.65	0.59	0.48	0.64	0.77	0.6
Total Residue	mg/L	n/v	n/v	n/v	123	97	93	87	82	89	90	85	93	114	106	103	111	78	83	81	92	85	90	79	80
Turbidity, Lab	NTU	n/v	n/v	n/v	3.3	14	2.5	3	3	2.6	2.8	2.7	3.3	4.4	2.7	2.8	3.8	7.8	7.2	2.6	3.6	3.5	2.8	5.6	9.8
Metals																									
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	-	**1,500**^{B}	**280**^{B}	**320**^{B}	**400**^{B}	-	-	**290**^{B}	**570**^{B}	**380**^{B}	**450**^{B}	50	**360**^{B}	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	1	<1	1	1	-	-	1	1	<1	<1	1	<1	-	-	-	-	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	11_{s3} ^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Cadmium	µg/L	1.0_{STB} ^{A} 0.09_{LTG} ^{B}	0.2^{C} 0.1_{s12} ^{E}	n/v	-	**<5**	**<5**	**<5**	**<5**	-	-	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					1.4	1.04	1.02	1.1	1.08	1.21	1.16	1.08	1.25	1.29	1.29	1.4	1.35	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
CWQG Cadmium Guideline (LTG)					0.11	0.09	0.09	0.09	0.09	0.1	0.1	0.09	0.1	0.11	0.11	0.11	0.11	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
PWQO Cadmium Guideline					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	<20	<40	<40	<20	-	-	20	20	<20	<20	<20	<20	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	***<20***	***<20***	***<20***	***<20***	-	-	***<20***	***<20***	***<20***	***<20***	***<20***	***<20***	-	-	-	-	-	-	-	-
Copper	µg/L	2^{*B}	5^{C} 5_{s13} ^{E}	n/v	-	**30**^{BCE}	**40**^{BCE}	**60**^{BCE}	**40**^{BCE}	-	-	**40**^{BCE}	**20**^{BCE}	**10**^{BCE}	**40**^{BCE}	**50**^{BCE}	**<10**	-	-	-	-	-	-	-	-
CCME Copper Guideline					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	300	**1,450**^{BC}	280	270	280	200	300	**320**^{BC}	280	290	**330**^{BC}	290	**430**^{BC}	-	-	-	-	-	-	-	-
Lead	µg/L	$1\#^{B}$	20_{s14} ^{C} 3_{s15} ^{E}	n/v	-	**<30**	**<30**	**<30**	**<30**	-	-	**<30**	**<30**	**<30**	**<30**	**<30**	**<30**	-	-	-	-	-	-	-	-
CCME Lead Guideline					1.9	1	1	1	1	1	1	1	1.7	1.7	1.7	1.9	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
PWQO Lead Guideline (s14)					20	10	10	10	10	20	20	10	20	20	20	20	20	20	20	20	20	20	20	20	20
PWQO Lead Guideline (s15)					3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$3{,}600_{EQ3}$ ^{A} 430_{EQ4} ^{B}	n/v	n/v	20	80	40	20	30	20	20	30	70	60	40	30	40	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					4683.1	3621.9	3558.2	3812	3748.8	4126	4000.8	3748.8	4250.7	4374.8	4374.8	4683.1	4560.2	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7
CCME Manganese Guideline (EQ4)					500	490	350	430	490	430	430	390	490	430	490	430	430	430	430	430	430	430	430	430	430
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	25^{**B}	25^{C}	n/v	-	<20	<20	<20	<20	-	-	<20	<20	<20	<20	<20	<20	-	-	-	-	-	-	-	-
CCME Nickel Guideline					70.5	25	25	25	25	25	25	25	64.8	66.5	66.5	70.5	68.9	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	37_{EQ1} ^{A} 7.0_{EQ2} ^{B}	30^{C} 20^{E}	n/v	-	<10	<10	10	10	-	-	<10	<10	<10	<10	20	<20	-	-	-	-	-	-	-	-
CCME Zinc Guideline (EQ1)					47.4	37.1	36.5	39	38.4	42	40.8	38.4	43.2	44.4	44.4	47.4	46.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2
CCME Zinc Guideline (EQ2)					44.7	28.5	20.5	21.6	26.6	25.3	25.9	16.6	30	25.7	34.7	26.9	26.2	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1

See notes on last page

Table
Summary of Surface Water Analytical Data - 18771000402
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																								
Sample Date					17-Dec-79	28-Apr-80	30-May-80	1-Jul-80	31-Jul-80	22-Aug-80	18-Sep-80	28-Oct-80	15-Nov-80	15-Dec-80	29-Mar-81	26-Apr-81	31-May-81	21-Jun-81	30-Jul-81	2-Sep-81	28-Sep-81	26-Oct-81	22-Nov-81	15-Dec-81	28-Feb-82
Sample ID					18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\pm 16}^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	40	39	40	46	56	51	34	47	44	53
Ammonium	mg/L	n/v	n/v	n/v	0.27	0.03	0.29	0.03	0.006	0.08	0.09	0.01	0.01	0.02	0.01	0.01	0.05	0.004	0.002	0.008	0.02	0.02	0.02	0.006	0.01
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	0.4	0.6	0.8	0.6	0.6	0.8	-	0.8	0.4	<0.2
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	36	35	29	24	25	22	29	25	23	6
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	5.65	4.4	5	6.05	5.45	4.65	6.4	3.75	5.45	6.9	11	-	-	-	-	-	-	-	-	-	-
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$_{\pm 9}^{C}$	n/v	10	-	11	**0.8**^{B}	7	8	10	10	9	-	-	12	9	7	8	8	8	9	10	13	7
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	136	100	125	130	145	150	165	115	130	145	165	123	132	120	136	160	148	118	136	145	185
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.3	0.25	0.11	0.08	0.28	0.03	0.03	0.24	0.22	0.25	0.36	0.28	0.17	0.14	0.09	0.19	0.16	0.19	0.22	0.33	0.39
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	0.29	0.21	0.14	0.09	0.19	0.16	0.21	0.23	0.34	0.39
Nitrite	mg/L	0.20_{nt} ^{B}	n/v	n/v	0.008	0.01	0.01	0.08	0.003	0.03	0.01	0.005	0.001	0.004	0.05	0.003	0.03	0.002	0.002	0.001	0.006	0.01	0.003	0.003	0.004
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	7.31	7.54	7.27	7.54	7.89	7.19	7.47	7.33	7.09	7.61	7.94	7.85	7.7	7.62	7.84	7.29	7.83	7.92	7.77
Phosphorus, Total	mg/L	n/v	0.030_{s4} ^{E}	n/v	**0.06**^{E}	**0.05**^{E}	**0.13**^{E}	**0.04**^{E}	**0.04**^{E}	0.03	0.03	**0.04**^{E}	**0.04**^{E}	**0.07**^{E}	**0.04**^{E}	0.03	**0.04**^{E}	0.03	**0.05**^{E}	0.03	0.03	**0.05**^{E}	0.03	**0.06**^{E}	**0.16**^{E}
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.03	0.01	0.02	0.01	0.01	0.01	0.02	0.009	0.02	0.04	0.01	0.02	0.01	0.01	0.01	0.02	0.01	0.01	0.02	0.02	0.1
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	7	23	16	15	5	5	4	7	4	3	9	8	13	4	4.6	6.3	2.3	2.3	1.5	15.8	2.3
Residue-Filterable	mg/L	n/v	n/v	n/v	88	65	81	85	94	98	107	75	85	94	107	80	86	78	88	104	96	77	88	94	120
Stream Condition	none	n/v	n/v	n/v	4	3	-	-	-	-	-	-	-	4	4	3	8	8	8	8	8	8	8	4	4
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}_{s2}$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC MECC Sulfate Guideline (s2)					218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218
Temperature, Lab	deg C	n/v	n/v	n/v	0	-	10	18	22	21	11	1	0	0	0	6	11	18	22	19	12	5	1	0	0
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.41	0.52	0.99	0.44	0.62	0.49	0.5	0.58	0.49	0.48	0.2	0.41	0.48	0.62	0.4	0.48	0.63	0.6	0.42	0.49	0.42
Total Residue	mg/L	n/v	n/v	n/v	95	88	97	100	99	103	111	82	89	97	216	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	2.7	6.4	3	3.3	1.6	4.3	4	4.4	2.1	2.7	9.8	-	-	-	-	-	-	-	-	-	-
Metals																								
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	11_{s3} ^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Cadmium	µg/L	1.0_{STB} ^{A} 0.09_{LTG} ^{B}	0.2^{C} 0.1_{s12} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
CWQG Cadmium Guideline (LTG)					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
PWQO Cadmium Guideline					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	2^{*B}	5^{C} 5_{s13} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Copper Guideline					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	300	**460**^{BC}	**330**^{BC}	260	300	270	250	170	**450**^{BC}	180
Lead	µg/L	$1\#^{B}$	20_{s14} ^{C} 3_{s15} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Lead Guideline					1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
PWQO Lead Guideline (s14)					20	20	20	20	20	20	20	20	20	20	20	10	10	10	20	20	20	10	20	20	20
PWQO Lead Guideline (s15)					3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$3{,}600_{EQ3}$ ^{A} 430_{EQ4} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7
CCME Manganese Guideline (EQ4)					430	430	490	430	490	430	390	500	490	490	500	430	390	390	390	430	390	490	390	390	390
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	25^{**B}	25^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Nickel Guideline					64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	37_{EQ1} ^{A} 7.0_{EQ2} ^{B}	30^{C} 20^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Zinc Guideline (EQ1)					43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2
CCME Zinc Guideline (EQ2)					26.1	26.1	33.1	27.4	34.2	27.4	20.6	36.5	29	32.5	39.6	25.9	19.8	21.3	24.1	25.7	21.5	33.6	21.7	20.1	22.7

See notes on last page

Table
Summary of Surface Water Analytical Data - 18771000402
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																								
Sample Date					30-Apr-82	30-May-82	21-Jun-82	18-Jul-82	19-Aug-82	16-Sep-82	22-Oct-82	14-Nov-82	13-Dec-82	27-Apr-83	25-May-83	27-Jun-83	25-Jul-83	31-Aug-83	20-Sep-83	16-Oct-83	14-Nov-83	10-Dec-83	23-Jan-84	29-Apr-84	27-May-84
Sample ID					18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{s16}^{C}$	n/v	25.7	-	43.2	50.9	51.7	53.1	-	-	42.4	-	-	41.7	50.1	-	-	44.2	-	45.2	49.7	36.8	46.4
Ammonium	mg/L	n/v	n/v	n/v	0.004	0.004	0.004	0.004	0.006	0.002	0.008	0.006	0.002	0.01	0.02	0.05	-	0.004	0.07	0.03	0.05	0.01	0.004	0.04	0.04
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	-	7.05	6.9	5.2	-	5.24	2.99	4.93	7.25	6.82	6.45	6.93	-	6.32	6.43	3.07	4.98	6.79	8.32	7.86	7.46
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$_{s9}^{C}$	n/v	9	9	8	8	7	8	11	13	-	8	10	7	8	6	8	8	9	11	10	-	10
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	90	129	139	131	146	144	90	121	139	114	117	128	138	136	149	113	123	142	159	128	142
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.36	0.09	0.17	0.17	0.11	0.1	0.19	0.28	0.35	0.39	0.23	0.05	-	0.18	0.1	0.13	0.26	0.3	0.35	0.32	0.18
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{s1} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.17	7.87	7.62	7.39	7.65	7.51	7.28	7.78	7.95	7.4	7.36	7.45	7.37	7.12	7.9	7.31	7.55	7.4	7.46	7.27	7.81
Phosphorus, Total	mg/L	n/v	0.030_{s4} ^{E}	n/v	**0.05**^{E}	0.03	**0.05**^{E}	**0.5**^{E}	0.03	**0.05**^{E}	**1.18**^{E}	**0.04**^{E}	**0.04**^{E}	**0.06**^{E}	0.03	0.03	-	0.03	**0.04**^{E}	**0.8**^{E}	0.03	0.03	**0.07**^{E}	**0.04**^{E}	0.03
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.007	0.01	0.02	0.0075	0.01	0.03	0.002	0.01	0.02	0.007	0.01	0.0065	-	0.01	0.01	0.005	0.01	0.01	0.02	0.02	0.01
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	45	4.69	3.95	6.62	5.57	-	8.78	5.94	3.56	20.5	9.46	9.06	-	8.16	3.94	6.38	9.41	2.59	3.4	13.38	11.26
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	3	8	8	8	8	8	8	8	4	8	3	8	8	8	8	8	4	4	-	3	8
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}_{s2}$	7.8	-	10.4	4.9	9.8	7.9	-	-	10.99	-	-	10.73	9.69	-	-	27.87	-	11.85	13.08	16.53	11.48
BC MECC Sulfate Guideline (s2)					218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218
Temperature, Lab	deg C	n/v	n/v	n/v	4	17	-	21	19	14	4	1	-	3	7	16	20	21	14	7	1	-	-	4	8
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.55	0.43	0.6	0.78	0.48	0.63	0.06	0.75	0.46	0.62	0.52	0.44	-	0.48	0.6	0.05	0.63	0.42	0.41	0.48	0.6
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	25	3.8	3.1	6.7	3.7	4	5.8	4.4	1.6	6.5	5.9	5.5	-	5.6	4.2	6.6	2.9	4	1.7	9.6	11.65
Metals																									
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	11_{s3} ^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Cadmium	µg/L	1.0_{STB} ^{A} 0.09_{LTG} ^{B}	0.2^{C} 0.1_{s12} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
CWQG Cadmium Guideline (LTG)					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
PWQO Cadmium Guideline					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	2^{*B}	5^{C} 5_{s13} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10**^{BCE}	**30**^{BCE}	**8**^{BCE}
CCME Copper Guideline					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	**1,280**^{BC}	-	240	**610**^{BC}	**360**^{BC}	**450**^{BC}	-	-	220	-	-	250	**370**^{BC}	-	-	-	-	200	200	**450**^{BC}	**390**^{BC}
Lead	µg/L	$1\#^{B}$	20_{s14} ^{C} 3_{s15} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7**^{BE}	**10**^{BE}	**<3**
CCME Lead Guideline					1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
PWQO Lead Guideline (s14)					10	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	10	20
PWQO Lead Guideline (s15)					3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$3{,}600_{EQ3}$ ^{A} 430_{EQ4} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7
CCME Manganese Guideline (EQ4)					500	390	430	490	430	430	490	390	390	490	490	490	490	500	390	490	430	490	490	490	390
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	25^{**B}	25^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	<2	<2
CCME Nickel Guideline					64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	37_{EQ1} ^{A} 7.0_{EQ2} ^{B}	30^{C} 20^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	20	3
CCME Zinc Guideline (EQ1)					43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2
CCME Zinc Guideline (EQ2)					37.1	21	25.7	31	25.1	28.1	33.9	22.6	19.6	30.7	31.8	29.5	31.5	38.6	20.5	33.1	27.2	30.7	29.3	34.2	22

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Table
Summary of Surface Water Analytical Data - 18771000402
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					18771000402																			
Sample Date					26-Jun-84	23-Jul-84	30-Aug-84	30-Sep-84	28-Oct-84	19-Nov-84	17-Dec-84	28-Jan-85	26-May-85	19-Jun-85	20-Jul-85	13-Aug-85	20-Sep-85	27-Oct-85	21-Nov-85	17-Dec-85	17-Feb-86	31-Mar-86	21-Apr-86	1-Jun-86	29-Jun-86
Sample ID					18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402	HIST_18771000402
General Chemistry																									
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\pm 16}^{C}$	n/v	43.9	42.8	48.4	43	49.8	40.9	49.1	-	41.9	44.2	43.2	48.2	50.7	44.3	36.5	49.4	55.2	49.7	28.9	44.3	45.8
Ammonium	mg/L	n/v	n/v	n/v	0.01	0.07	0.05	0.04	0.08	0.008	0.01	-	0.07	0.11	0.06	0.09	0.05	0.03	0.02	0.13	0.03	0.06	0.03	0.11	0.05
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	5.97	6.56	7.06	2.57	6.2	5.64	12.69	-	7.26	6.98	6.53	8.25	7.21	5.5	3.68	9.1	7.7	53.6	4.8	12.5	6.5
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$_{\pm 9}^{C}$	n/v	10	8	8	10	13	13	13	15	13	9	11	8	7	8	11	**5^{B}**	10	-	13	11	-
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	131	127	148	102	134	122	166	-	133	134	123	147	148	124	107	157	166	318	89	153	134
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.19	0.04	0.14	0.15	0.17	0.31	0.3	-	0.14	0.07	0.02	0.05	0.08	0.16	0.58	0.26	0.38	0.43	0.19	0.04	0.04
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{nf} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.48	7.49	7.44	7.52	7.43	7.52	7.36	-	7.88	7.92	7.81	7.82	7.82	7.75	7.53	7.56	7.72	7.76	7.65	7.86	7.81
Phosphorus, Total	mg/L	n/v	0.030_{s4} ^{E}	n/v	0.03	0.02	0.03	**0.04^{E}**	0.03	0.03	**0.04^{E}**	-	**0.04^{E}**	0.03	0.02	0.02	0.02	0.02	**0.04^{E}**	**0.04^{E}**	**0.04^{E}**	0.03	0.02	**0.05^{E}**	0.03
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.006	0.002	0.01	0.005	0.0065	0.01	0.01	-	0.02	0.01	0.002	0.0075	0.009	0.01	0.005	0.01	0.02	0.01	0.0095	0.0095	0.0045
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	10.71	4,295	5,184	9,416	6,616	3,498	11.01	-	-	6,101	7,205	8,627	6,444	4.4	19.83	4,227	2,327	10.4	56.7	37.8	9.6
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	8	8	8	8	8	8	8	4	8	8	8	8	8	9	4	4	4	-	3	8	-
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}_{s2}$	5.46	9.61	10.69	3.74	5.63	10.07	10.38	-	10.52	10.48	8.38	9.55	10.43	7.93	6.93	10.85	10.25	10.65	5.93	9.93	9.45
BC MECC Sulfate Guideline (s2)					218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218
Temperature, Lab	deg C	n/v	n/v	n/v	15	23	20	8	8	1	1	1	11	14	19	20	18	9	1	-	-	-	2	13	-
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.73	0.65	0.52	1.02	0.81	0.5	0.47	-	0.5	0.57	0.77	0.54	0.45	0.57	0.7	0.77	0.47	0.4	0.26	0.95	0.56
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	11.1	4.5	9.8	8.9	12.9	5.4	15.3	-	6.7	2	6.3	6.8	5.4	5.5	20	2.2	4.9	14.4	38	16.6	7.9
Metals																									
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	11_{s3} ^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Cadmium	µg/L	1.0_{STB} ^{A} 0.09_{LTG} ^{B}	0.2^{C} 0.1_{s12} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
CWQG Cadmium Guideline (LTG)					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
PWQO Cadmium Guideline					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	2^{*B}	5^{C} 5_{s13} ^{E}	n/v	**3^{B}**	**4^{B}**	**4^{B}**	**3^{B}**	2	**3^{B}**	**3^{B}**	-	**4^{B}**	**3^{B}**	**3^{B}**	**4^{B}**	**3^{B}**	**3^{B}**	2	-	**6^{BCE}**	**10^{BCE}**	**4^{B}**	**4^{B}**	**5^{B}**
CCME Copper Guideline					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	**860^{BC}**	**320^{BC}**	**350^{BC}**	**670^{BC}**	**970^{BC}**	**350^{BC}**	**760^{BC}**	-	260	170	**480^{BC}**	**330^{BC}**	290	**380^{BC}**	**1,200^{BC}**	-	220	**730^{BC}**	**1,500^{BC}**	300	250
Lead	µg/L	$1\#^{B}$	20_{s14} ^{C} 3_{s15} ^{E}	n/v	**<3**	**<3**	**3^{B}**	**<3**	**<3**	**<3**	**<3**	-	**<3**	**4^{BE}**	**<3**	**<3**	**<3**	**<3**	**<3**	-	**<3**	**10^{BE}**	**<3**	**<3**	**<3**
CCME Lead Guideline					1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
PWQO Lead Guideline (s14)					20	20	20	20	20	10	20	20	20	20	20	20	20	20	10	20	20	20	10	20	20
PWQO Lead Guideline (s15)					3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$3{,}600_{EQ3}$ ^{A} 430_{EQ4} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7
CCME Manganese Guideline (EQ4)					490	490	490	430	490	430	490	430	390	390	390	390	390	390	430	430	390	390	430	390	390
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	25^{*+B}	25^{C}	n/v	2	<2	<2	<2	<2	<2	2	-	<2	<2	2	<2	2	2	2	-	2	3	6	<2	3
CCME Nickel Guideline					64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	37_{EQ1} ^{A} 7.0_{EQ2} ^{B}	30^{C} 20^{E}	n/v	3	2	1	3	3	2	4	-	3	1	4	6	4	4	6	-	7	**50^{ABCE}**	10	3	1
CCME Zinc Guideline (EQ1)					43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2
CCME Zinc Guideline (EQ2)					28.8	28.6	29.8	27.9	30	27.9	31.8	26.1	20.8	20.1	22	21.8	21.8	23.1	27.7	27	23.7	22.9	25.1	21.1	22

See notes on last page

Table
Summary of Surface Water Analytical Data - 18771000402
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																								
Sample Date																								
Sample ID																								
Laboratory Work Order	Units	CCME	PWQO	BC MECC	23-Aug-86 18771000402 HIST_187710004 02	29-Sep-86 18771000402 HIST_187710004 02	23-Oct-86 18771000402 HIST_187710004 02	16-Nov-86 18771000402 HIST_187710004 02	15-Dec-86 18771000402 HIST_187710004 02	18-Jan-87 18771000402 HIST_187710004 02	24-Feb-87 18771000402 HIST_187710004 02	16-Mar-87 18771000402 HIST_187710004 02	30-May-87 18771000402 HIST_187710004 02	27-Jun-87 18771000402 HIST_187710004 02	21-Jul-87 18771000402 HIST_187710004 02	30-Aug-87 18771000402 HIST_187710004 02	25-Oct-87 18771000402 HIST_187710004 02	22-Nov-87 18771000402 HIST_187710004 02	14-Dec-87 18771000402 HIST_187710004 02	18-Jan-88 18771000402 HIST_187710004 02	28-Feb-88 18771000402 HIST_187710004 02	21-Mar-88 18771000402 HIST_187710004 02	30-May-88 18771000402 HIST_187710004 02	19-Jun-88 18771000402 HIST_187710004 02	17-Jul-88 18771000402 HIST_187710004 02
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$^{C}_{s16}$	n/v	47.5	45.4	41.9	44.6	49.1	52.1	56.3	57.2	45	51.7	56.5	55	46.8	48.2	52.6	54.2	55.9	57.6	42	46	48
Ammonium	mg/L	n/v	n/v	n/v	0.05	0.04	0.01	0.008	0.11	0.004	0.002	0.006	0.05	0.06	0.05	0.08	0.02	0.006	0.01	0.04	0.02	0.08	0.14	0.07	0.11
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	8	6.85	6	7	8.25	7.65	8.45	8.55	6.25	6.3	5.4	7.2	7.2	7.4	7.1	11.1	8.3	11.4	7.2	7.1	6.9
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$^{C}_{s9}$	n/v	-	-	9	12	10	11	9	12	8	12	11	9	12	14	-	14	11	12	-	9	7.5
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	141	129	124	133	149	153	165	172	129	140	142	156	140	145	150	163	165	173	127	135	141
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.65	0.07	0.1	0.21	0.23	0.31	0.38	0.38	0.11	0.24	0.07	0.06	0.13	0.24	0.28	0.29	0.38	0.48	0.04	0.03	0.02
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{nt} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.84	7.83	7.77	7.76	7.55	7.65	7.66	7.75	7.83	7.93	7.86	7.86	7.75	7.87	7.69	7.82	7.59	7.67	7.6	7.5	7.5
Phosphorus, Total	mg/L	n/v	0.030_{s4} ^{E}	n/v	0.03	0.01	0.01	**0.05**^{E}	**0.04**^{E}	0.02	0.03	**0.04**^{E}	0.02	0.02	0.02	**0.07**^{E}	0.02	0.02	0.02	0.03	**0.04**^{E}	**0.04**^{E}	0.03	0.03	0.02
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.01	0.0005	0.002	0.04	0.01	0.02	0.02	0.02	0.0045	0.01	0.005	0.005	0.01	0.01	0.01	0.01	0.03	0.03	0.01	0.006	0.003
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	-	5.5	6.7	2.2	4.8	2.9	3	3.7	14.3	7.3	9.9	7.6	4.7	3.1	3.5	3.8	13.7	4.9	9	8	5
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	-	-	8	8	4	4	4	4	8	8	8	8	8	4	-	4	4	4	-	8	8
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}_{s2}$	9.99	9.35	7.4	10.4	9.9	96.91	10.18	11.2	9.43	8.3	4.8	10.5	8.4	9.8	9.4	12.2	12.4	12.4	9.23	10.6	10.66
BC MECC Sulfate Guideline (s2)					218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218
Temperature, Lab	deg C	n/v	n/v	n/v	-	-	7	2	-	-	1	-	16	21	22	18	5	1	-	-	-	-	-	19	19
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	1	0.45	0.49	0.42	0.59	0.45	0.37	0.42	0.48	0.8	0.59	0.55	0.47	0.43	0.45	0.53	0.52	0.52	0.59	0.5	0.62
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	16.8	3.1	6.4	4.5	3.4	4.4	3.5	4.7	10.2	7.2	9.2	6.3	4.6	2.5	5.7	2.1	1.7	2.4	6.4	4.8	5.2
Metals																									
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	11_{s3} ^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Cadmium	µg/L	1.0_{STB} ^{A} 0.09_{LTG} ^{B}	0.2^{C} 0.1_{s12} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
CWQG Cadmium Guideline (LTG)					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
PWQO Cadmium Guideline					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	2^{*B}	5^{C} 5_{s13} ^{E}	n/v	**4**^{B}	**3**^{B}	**4**^{B}	**4**^{B}	**4**^{B}	-	-	**5**^{B}	**4**^{B}	**4**^{B}	**3**^{B}	-	**3**^{B}	**3**^{B}	**3**^{B}	**4.1**^{B}	**5.7**^{BE}	**4.7**^{B}	**3**^{B}	**3.1**^{B}	<1.6
CCME Copper Guideline					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	**500**^{BC}	250	270	170	170	-	-	230	220	170	**660**^{BC}	-	210	200	**310**^{BC}	270	**420**^{BC}	210	280	**350**^{BC}	210
Lead	µg/L	$1\#^{B}$	20_{s14} ^{C} 3_{s15} ^{E}	n/v	**<3**	**<3**	**<3**	**<3**	**<3**	-	-	**<3**	**<3**	**5**^{BE}	**<3**	-	**<3**	**<3**	**<3**	**<3**	**<3**	**<3**	**<2**	**<2**	**<2**
CCME Lead Guideline					1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
PWQO Lead Guideline (s14)					20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
PWQO Lead Guideline (s15)					3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$3{,}600_{EQ3}$ ^{A} 430_{EQ4} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7
CCME Manganese Guideline (EQ4)					390	390	390	390	430	430	430	390	390	390	390	390	390	390	430	390	430	430	430	430	430
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	25^{*+B}	25^{C}	n/v	2	<2	<2	<2	<2	-	-	2	<2	<2	3	-	2	1	3	2	3	2	<1.5	6.5	<1
CCME Nickel Guideline					64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	37_{EQ1} ^{A} 7.0_{EQ2} ^{B}	30^{C} 20^{E}	n/v	6	3	3	2	4	-	-	2	1	2	<1	-	3	4	3	4.7	10	6.2	<4	6.5	<1.9
CCME Zinc Guideline (EQ1)					43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2
CCME Zinc Guideline (EQ2)					21.5	21.7	22.7	22.9	27.2	25.1	24.9	23.1	21.7	20	21.1	21.1	23.1	21	24.3	21.8	26.3	24.7	26.1	28.3	28.3

See notes on last page

Table
Summary of Surface Water Analytical Data - 18771000402
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																								
Sample Date					14-Aug-88	20-Sep-88	24-Oct-88	20-Nov-88	13-Dec-88	16-Jan-89	12-Feb-89	13-Mar-89	23-May-89	17-Jun-89	15-Jul-89	12-Aug-89	24-Sep-89	17-Oct-89	20-Nov-89	11-Dec-89	21-Jan-90	25-Feb-90	18-Mar-90	31-May-91	25-Jun-91
Sample ID					18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{s16}^{C}$	n/v	53	49	38	37	43	45	50	50	31	38	40	60	49	61	47	47	51	53	32	40.8	43.2
Ammonium	mg/L	n/v	n/v	n/v	0.07	0.05	0.02	0.02	0.01	0.02	0.06	0.08	0.04	0.06	0.05	0.17	0.03	0.01	0.03	0.08	0.07	0.01	0.08	0.08	0.08
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	7.7	7	6.1	6.1	2	6.6	21	13	5.5	6.8	6.4	3	7.2	6	55	8	-	11	11	7.5	8.5
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$_{s9}^{C}$	n/v	8	10	8.5	7	-	8	12	7	11	11	10	-	8	10	10	9	8	7	-	11	10
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	150	145	118	123	138	146	178	178	99	122	122	155	151	162	287	152	165	174	138	128	141
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.08	0.08	0.18	0.25	0.07	0.27	0.34	0.4	0.19	0.09	0.02	0.005	0.05	0.11	0.37	0.32	0.39	0.49	1.47	0.14	0.03
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{n1} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.6	7.5	7.2	7.4	7.4	7.3	7.4	7.3	7	7.6	7.4	8	7.5	7.8	7.7	7.5	7.4	7.6	7.1	7.5	7.6
Phosphorus, Total	mg/L	n/v	0.030_{s4} ^{E}	n/v	0.02	0.01	0.02	0.03	0.01	0.03	0.03	0.03	**0.04**^{E}	0.02	0.02	**0.04**^{E}	0.01	0.01	0.02	0.03	0.02	0.03	0.03	0.03	0.02
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.006	0.003	0.008	0.008	0.01	0.008	0.01	0.01	0.009	0.007	0.002	0.01	0.003	0.001	0.006	0.01	-	0.01	0.004	0.004	0.007
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	5	1	3	15	3	3	3	2	20	8	7	10	5	2	1	3	3	5	10	15	6
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	8	8	8	8	-	4	4	4	8	8	8	-	8	8	4	4	4	4	4	-	8
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}_{s2}$	9.05	10.6	9	9.64	3.46	10.7	12.6	11.6	6.2	9.2	9.2	10	9.56	8.5	13.4	11.6	12.4	12	8.46	8.6	11.2
BC MECC Sulfate Guideline (s2)					218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218
Temperature, Lab	deg C	n/v	n/v	n/v	24	16	7	3	-	1	1	1	11	13	19	-	10	6	1	1	1	1	1	1.7	21
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.51	0.5	0.61	0.54	0.2	0.52	0.62	0.88	0.66	0.5	0.54	0.74	0.4	0.45	0.6	0.64	-	0.68	0.92	0.65	0.5
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	7.6	4.5	4.3	6.9	2.9	2.5	3.6	5.4	14	5.1	6.8	16	5.6	3.4	3.7	3	-	4.2	9.1	9.6	0.7
Metals																									
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.2	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	11_{s3} ^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Cadmium	µg/L	1.0_{STB} ^{A} 0.09_{LTG} ^{B}	0.2^{C} 0.1_{s12} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
CWQG Cadmium Guideline (LTG)					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
PWQO Cadmium Guideline					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	2^{*B}	5^{C} 5_{s13} ^{E}	n/v	**3.1**^{B}	<1.9	**5.2**^{BCE}	<0.6	**<2.3**	**5.6**^{BCE}	**4.4**^{B}	**2.5**^{B}	<0.5	**5.1**^{BCE}	**5.1**^{BCE}	-	**3.6**^{B}	<0.5	**3.8**^{B}	**3.7**^{B}	-	**5.2**^{BCE}	**<5**	**2.8**^{B}	**<2.3**
CCME Copper Guideline					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	**350**^{BC}	280	**310**^{BC}	200	180	220	220	240	**740**^{BC}	290	280	-	240	180	260	200	-	240	**630**^{BC}	**380**^{BC}	200
Lead	µg/L	$1\#^{B}$	20_{s14} ^{C} 3_{s15} ^{E}	n/v	**<2**	**<2**	**<2**	**<2**	**<2**	**<2**	**<3**	**<2**	**<2**	**<3**	**<2**	-	**<2**	**<2**	**<2**	**<2**	-	**<2.5**	**<20**	**<2**	**<2**
CCME Lead Guideline					1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
PWQO Lead Guideline (s14)					20	20	10	10	20	20	20	20	10	10	10	20	20	20	20	20	20	20	10	10	20
PWQO Lead Guideline (s15)					3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$3{,}600_{EQ3}$ ^{A} 430_{EQ4} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4250.7
CCME Manganese Guideline (EQ4)					430	430	490	490	490	490	490	490	500	430	490	320	430	390	390	430	490	430	500	430	430
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	25^{*+B}	25^{C}	n/v	<1	<1	<1.5	<1	<1	<1	<1.5	<2	<1	<1	<1	-	<1.5	<1	<1	<1	-	<1	<10	<1.5	<1.5
CCME Nickel Guideline					64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	37_{EQ1} ^{A} 7.0_{EQ2} ^{B}	30^{C} 20^{E}	n/v	<2.9	<2.5	<4.8	<1.8	<1.7	8.4	5.9	<4.3	<4.9	<1	<1.7	-	<1.5	<1	8.1	<2.8	<4.9	6.6	<10	<2.8	<1.8
CCME Zinc Guideline (EQ1)					43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2
CCME Zinc Guideline (EQ2)					26.1	28.3	36.2	30.7	30.7	33.4	30.7	33.4	42.6	26.1	30.7	18.9	28.3	22.2	24.1	28.3	30.7	26.1	39.3	28.3	26.1

See notes on last page

Table
Summary of Surface Water Analytical Data - 18771000402
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																								
Sample Date																								
Sample ID															18771000402									
Laboratory Work Order	Units	CCME	PWQO	BC MECC	20-Jul-91 18771000402 HIST_18771000402	18-Aug-91 18771000402 HIST_18771000402	15-Sep-91 18771000402 HIST_18771000402	15-Oct-91 18771000402 HIST_18771000402	24-Nov-91 18771000402 HIST_18771000402	30-Dec-91 18771000402 HIST_18771000402	28-Jan-92 18771000402 HIST_18771000402	24-Feb-92 18771000402 HIST_18771000402	22-Mar-92 18771000402 HIST_18771000402	25-Apr-92 18771000402 HIST_18771000402	28-Sep-92 18771000402 HIST_18771000402	27-Oct-92 18771000402 HIST_18771000402	29-Nov-92 18771000402 HIST_18771000402	15-Dec-92 18771000402 HIST_18771000402	23-Jan-93 18771000402 HIST_18771000402	15-Feb-93 18771000402 HIST_18771000402	28-Mar-93 18771000402 HIST_18771000402	27-Apr-93 18771000402 HIST_18771000402	25-May-93 18771000402 HIST_18771000402	21-Jun-93 18771000402 HIST_18771000402	22-Aug-93 18771000402 HIST_18771000402
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\pm 16}^{C}$	n/v	-	63.3	66.2	41.8	41.2	48	53	53.3	57.7	18.5	42.3	41.7	42.7	46.2	39.7	50.4	63.6	33.2	41.1	42.2	45
Ammonium	mg/L	n/v	n/v	n/v	-	0.04	0.2	0.02	0.01	0.07	0.03	0.04	0.09	0.03	0.06	0.02	0.01	0.01	0.02	0.05	0.02	0.01	0.02	0.08	0.07
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	-	10	8	6.3	8.4	9.4	10	14	12	3.9	9.2	10	9.7	9.8	9	13	14	7	9.1	7	7.6
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$_{\pm 9}^{C}$	n/v	9.5	7	9	13	6.5	**4.5**^{B}	**4**^{B}	12	-	8	8	9	16	9	7	10	10	10	8	9	8
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	-	191	178	137	142	166	174	185	183	71	140	141	144	154	127	171	194	108	136	128	137
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	8	-	7	8	8	-	-	-	-	-	8	8	8	8	-	-	4	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	68	67	72	27	58	61	58	60	42	67	78	44	54	50	57
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	-	0.03	0.03	0.12	0.25	0.31	0.37	0.42	0.47	0.28	0.07	0.12	0.17	0.19	0.19	0.28	0.37	0.21	0.2	0.02	0.01
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{nf} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	6.5-9.0^{B}	6.5-8.5^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	6.5-9.0^{B}	6.5-8.5^{C}	n/v	-	7.7	7.7	7.5	7.6	7.5	7.6	7.6	7.5	7.1	7.6	7.5	7.5	7.6	7.5	7.4	7.5	7.2	7.5	7.7	7.6
Phosphorus, Total	mg/L	n/v	0.030_{s4} ^{E}	n/v	-	0.02	0.03	0.01	0.02	0.02	0.02	0.02	0.02	**0.05**^{E}	0.02	0.02	0.03	0.02	0.01	0.03	0.03	0.03	0.03	0.02	0.03
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	-	0.003	0.03	0.002	0.004	0.006	0.003	0.003	0.004	0.006	0.003	0.002	0.004	0.004	0.003	0.007	0.005	0.002	0.006	0.005	0.003
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	-	8	4	4	4	6	3	4	9	45	8	6	3	15	20	6	8	15	20	6	9
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	-	8	-	-	-	4	4	4	4	3	-	-	-	-	4	4	-	8	3	8	8
Sulfate	mg/L	n/v	n/v	128-429$^{F}_{s2}$	-	10.4	0.01	11.4	12.6	14.2	13.6	13.8	13.3	5.44	11.2	9.94	11	12.3	9.68	12	10.4	7.92	8.08	9.34	9.2
BC MECC Sulfate Guideline (s2)					218	218	218	218	218	218	218	218	218	128	218	218	218	218	218	218	309	218	218	218	218
Temperature, Lab	deg C	n/v	n/v	n/v	23	18	15	10	2	1	1	1	0.1	2	1.2	4	1	1	1	1	0.1	0.1	9	18	21
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	-	0.45	0.44	0.61	0.49	0.6	0.53	0.53	0.63	0.68	0.62	0.54	0.5	0.48	0.47	1.34	0.49	0.53	0.51	0.56	0.75
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	-	6.7	3.5	5.5	4.9	4.4	4.3	3.1	4.5	30	4.3	5	3.7	9.8	3	5.1	7.7	12	19	1.6	7.9
Metals																								
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	11_{s3} ^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	1100	11	11	11	11
Cadmium	µg/L	1.0_{STB} ^{A} 0.09_{LTG} ^{B}	0.2^{C} 0.1_{s12} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					1.25	1.25	1.25	1.25	1.25	1.25	1.42	1.4	1.5	0.55	1.21	1.27	1.21	1.25	0.87	1.4	1.63	0.91	1.12	1.04	1.19
CWQG Cadmium Guideline (LTG)					0.1	0.1	0.1	0.1	0.1	0.1	0.12	0.11	0.12	0.05	0.1	0.11	0.1	0.1	0.08	0.11	0.13	0.08	0.1	0.09	0.1
PWQO Cadmium Guideline					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	2^{*B}	5^{C} 5_{s13} ^{E}	n/v	-	**7.6**^{BCE}	**2.8**^{B}	**4.4**^{B}	**2.9**^{B}	**4.1**^{B}	**4.8**^{B}	**4**^{B}	**4**^{B}	<1.9	**3.1**^{B}	**2.7**^{B}	**2.7**^{B}	**3**^{B}	**4.3**^{B}	**6.4**^{BCE}	**2.8**^{B}	**<2.2**	**2.9**^{B}	**<2.1**	**2.6**^{B}
CCME Copper Guideline					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	-	280	260	**330**^{BC}	230	290	230	210	**350**^{BC}	**1,300**^{BC}	**320**^{BC}	280	220	**330**^{BC}	**640**^{BC}	280	**460**^{BC}	**560**^{BC}	**780**^{BC}	230	**430**^{BC}
Lead	µg/L	1#^{B}	20_{s14} ^{C} 3_{s15} ^{E}	n/v	-	**<3.5**	**<2**	**<2**	**<3**	**<3**	**<2**	**<2**	<2	**<2**	**<2**	**<2**	**<2**	**<3**	**<7**	**<2**	<2	**<2**	**<2**	**<2**	**<2**
CCME Lead Guideline					1.7	1.7	1.7	1.7	1.7	1.7	1.9	1.9	2.1	1	1	1.7	1	1.7	1	1.9	2.3	1	1	1	1
PWQO Lead Guideline (s14)					20	20	20	20	20	20	20	20	20	5	20	20	20	20	10	20	20	10	20	20	20
PWQO Lead Guideline (s15)					3	3	3	3	3	3	3	3	3	1	3	3	3	3	3	3	3	3	3	3	3
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$3,600_{EQ3}$ ^{A} 430_{EQ4} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					4250.7	4250.7	4250.7	4250.7	4250.7	4250.7	4744.4	4683.1	4988.6	2108.5	4126	4312.8	4126	4250.7	3107.8	4683.1	5351.8	3237.4	3875.1	3621.9	4063.5
CCME Manganese Guideline (EQ4)					430	390	390	430	430	430	430	430	430	380	430	430	430	430	350	490	490	380	430	390	430
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	25^{**B}	25^{C}	n/v	-	<1	<1	<2	<1.5	<2	<1	<1.5	<1	<2.5	<1	<1	<1	<1.5	<4	<2	<2	<1.5	<2	<1	<1
CCME Nickel Guideline					64.8	64.8	64.8	64.8	64.8	64.8	71.3	70.5	74.5	25	25	65.6	25	64.8	25	70.5	79.1	25	25	25	25
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	37_{EQ1} ^{A} 7.0_{EQ2} ^{B}	30^{C} 20^{E}	n/v	-	16	<2.8	<2	<1.8	12	5.7	<3	7.1	5.4	<2	<2.4	<2	<2.4	15	17	<3.2	<2.7	<4	<1	<2
CCME Zinc Guideline (EQ1)					43.2	43.2	43.2	43.2	43.2	43.2	48	47.4	50.3	22.2	42	43.8	42	43.2	32.1	47.4	53.8	33.4	39.6	37.1	41.4
CCME Zinc Guideline (EQ2)					26.1	24.1	24.1	28.3	26.1	28.3	29.4	29	33.7	18.4	25.3	28.8	27.4	26.1	20.2	34.1	36.3	27	25.6	20.3	24.9

See notes on last page

Table
Summary of Surface Water Analytical Data - 18771000402
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																								
Sample Date																18771000402								
Sample ID					26-Sep-93 18771000402	19-Dec-93 18771000402	20-Feb-94 18771000402	11-Apr-94 18771000402	29-May-94 18771000402	26-Jun-94 18771000402	18-Jul-94 18771000402	21-Aug-94 18771000402	11-Sep-94 18771000402	10-Oct-94 18771000402	26-Nov-94 18771000402	24-Jan-95 18771000402	26-Feb-95 18771000402	5-Apr-95 18771000402	2-Jun-95 18771000402	21-Jun-95 18771000402	23-Jul-95 18771000402	26-Sep-95 18771000402	28-Oct-95 18771000402	29-Nov-95 18771000402	30-Jan-96 18771000402
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02	HIST_187710004 02
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{s16}^{C}$	n/v	45	48	57	62	42	44	47	57	50	62	44	52	57	45	38	43	47	70	62	46	50
Ammonium	mg/L	n/v	n/v	n/v	0.04	0.01	3	0.01	0.09	0.07	0.08	0.04	0.08	0.03	0.01	0.02	0.01	0.01	0.05	0.11	0.06	0.04	0.02	0.02	0.03
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	$640_{120}^{A\ B}$	n/v	n/v	7.2	8.6	**370**^{B}	17	8.6	8.6	7.6	3.4	7.4	4.8	6.9	8.3	10	10	5.8	6.8	7	6.6	7.2	7.66	6.3
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}^{B}$	$_{s9}^{C}$	n/v	7	7	7	8	12	10	21	8.8	8	9	-	9	13	-	**1**^{B}	10	9	8	7	11	9
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	136	143	1,198	203	132	128	134	124	143	138	131	154	170	143,000	106,000	127,000	115,000	183,000	157,000	143,000	152,000
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	8	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	57	63	85	79	53	54	57	63	60	70	56	67	72	60	49	55	59	83	78	60	52
Nitrate	mg/L	$550_{13}^{A\ B}$	n/v	n/v	0.08	0.27	0.75	0.36	0.08	0.02	0.02	0.07	0.08	0.11	0.24	0.31	0.36	0.4	0.15	-	0.03	0.02	0.1	0.26	0.32
Nitrate (as N)	mg/L	$124_{3.0}^{A\ B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{n1}^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	0.009	0.006	-	0.007	0.003	0.005	0.006	0.007
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.6	7.6	7.1	7.5	7.7	7.7	7.7	7.7	7.6	7.6	7.8	7.7	7.6	7.5	7.6	-	7.5	7.7	7.7	7.4	7.4
Phosphorus, Total	mg/L	n/v	0.030_{s4}^{E}	n/v	0.01	0.02	**0.32**^{E}	0.03	**0.04**^{E}	0.03	0.02	0.03	0.02	0.03	0.02	0.03	0.02	0.02	**0.05**^{E}	-	0.02	0.01	0.02	0.01	0.02
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.002	0.01	0.05	0.005	0.004	0.005	0.007	0.006	0.009	0.006	0.01	0.01	0.008	0.006	0.006	-	0.007	0.004	0.006	0.004	0.004
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	5	10	45	10	15	15	10	10	6	9	5	25	3	4	3.5	-	4	4.3	4.8	5	6
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	8	4	4	8	8	8	8	8	9	8	-	4	-	-	-	-	8	9	8	4	4
Sulfate	mg/L	n/v	n/v	$128\text{-}429_{s2}^{F}$	10	11	23	11	9.9	8.5	9.4	2.6	9.7	3.4	10	11	11.6	7.78	6.62	-	9.3	9.83	4.85	12	8.5
BC MECC Sulfate Guideline (s2)					218	218	309	309	218	218	218	218	218	218	218	218	218	218	218	218	218	309	309	218	218
Temperature, Lab	deg C	n/v	n/v	n/v	1.3	1	1	1	5	17	21	17	14	10	-	1	10	-	13	19.9	20	10	6	10	1
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.56	0.48	4.72	0.46	0.66	0.61	0.52	0.79	0.57	0.73	0.47	0.55	0.78	0.47	0.61	-	0.47	0.48	0.63	0.47	0.85
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	4.9	6.6	26	10	5.8	11	11	30	9.2	14	4.5	8.2	4.3	-	11	-	5.5	5.9	9.5	3.3	4.4
Metals																									
Aluminum	µg/L	$5/100_{VAR1}^{B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	**440**^{B}	**1,300**^{B}	**570**^{B}	**330**^{B}	**490**^{B}	**630**^{B}	**210**^{B}	**260**^{B}
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	$100^{C}\ 5^{E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	11_{s3}^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					11	11	1100	1100	11	11	11	11	11	11	11	11	11	11	11	11	11	1100	1100	11	11
Cadmium	µg/L	$1.0_{STB}^{A}\ 0.09_{LTG}^{B}$	$0.2^{C}\ 0.1_{s12}^{E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	**<0.2**	**<0.2**	**<0.2**	**<0.34**	**<0.22**	**<0.28**	**<0.4**	**<0.2**
CWQG Cadmium Guideline (STB)					1.19	1.31	1.78	1.65	1.1	1.12	1.19	1.31	1.25	1.46	1.16	1.4	1.5	1.25	1.02	1.14	1.23	1.74	1.63	1.25	1.08
CWQG Cadmium Guideline (LTG)					0.1	0.11	0.14	0.13	0.09	0.1	0.1	0.11	0.1	0.12	0.1	0.11	0.12	0.1	0.09	0.1	0.1	0.14	0.13	0.1	0.09
PWQO Cadmium Guideline					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	17,000	14,000	16,000	17,000	24,000	22,000	17,000	15,000
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	3.3	2.3	1.2	<0.32	2.6	4.8	3.4	<0.6
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.78	<0.62	<0.5	<0.59	<0.5	<0.5	<0.5
Copper	µg/L	2^{*B}	$5^{C}\ 5_{s13}^{E}$	n/v	**2.7**^{B}	**2.5**^{B}	**25**^{BCE}	**2.7**^{B}	**3.5**^{B}	**2.6**^{B}	**3.2**^{B}	**<2.4**	**2.6**^{B}	<1.6	<2	**3.5**^{B}	**6.1**^{BCE}	<2	**3**^{B}	**3.1**^{B}	**2.9**^{B}	**3.9**^{B}	**<2.2**	**2.5**^{B}	**4.5**^{B}
CCME Copper Guideline					2	2	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	**310**^{BC}	**390**^{BC}	**2,100**^{BC}	**500**^{BC}	**370**^{BC}	**500**^{BC}	**500**^{BC}	**970**^{BC}	**480**^{BC}	**960**^{BC}	294	**360**^{BC}	250	**430**^{BC}	**940**^{BC}	**440**^{BC}	280	**440**^{BC}	**590**^{BC}	210	**320**^{BC}
Lead	µg/L	$1\#^{B}$	$20_{s14}^{C}\ 3_{s15}^{E}$	n/v	**<2**	**<2**	**<4**	<2	**<3**	**<4**	**<2**	**<5**	**<2**	**<4**	**<2**	**<2**	<2	**<2**	**<2**	-	**<2**	<2	**<3.2**	**<2**	**<2**
CCME Lead Guideline					1	1.8	2.6	2.4	1	1	1	1.8	1.7	2	1	1.9	2.1	1.7	1	1	1	2.5	2.3	1.7	1
PWQO Lead Guideline (s14)					20	20	20	20	20	20	20	20	20	20	20	20	20	20	10	20	20	20	20	20	20
PWQO Lead Guideline (s15)					3	3	5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	5	3	3	3
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	4,300	3,500	3,700	4,000	5,600	5,600	4,300	3,600
Manganese	µg/L	$3{,}600_{EQ3}^{A}\ 430_{EQ4}^{B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	33	56	33	30	37	33	14	19
CCME Manganese Guideline (EQ3)					4063.5	4436.7	5771.3	5412	3812	3875.1	4063.5	4436.7	4250.7	4866.7	4000.8	4683.1	4988.6	4250.7	3558.2	3938	4188.4	5651.9	5351.8	4250.7	3748.8
CCME Manganese Guideline (EQ4)					430	430	590	490	390	390	390	390	430	430	390	390	430	430	350	430	430	440	440	490	490
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	10	10	19	20	19	<0.54	22	18
Nickel	µg/L	25^{**B}	25^{C}	n/v	<2	<1	<3	<1	<2	<1	<2	<3	<2	<2	<1	8	<2	<1.6	<1.7	<1.4	<1	<1	<1.2	<1	<1
CCME Nickel Guideline					25	67.3	84.5	79.9	25	25	25	67.3	64.8	72.9	25	70.5	74.5	64.8	25	25	225	83	79.1	64.8	25
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	$37_{EQ1}^{A}\ 7.0_{EQ2}^{B}$	$30^{C}\ 20^{E}$	n/v	<2	6	**64**^{ABCE}	<4	<3	<3	<4	5	<2	<3	<1	7	18	<3.1	<4.3	-	<2.9	<3.2	<3	<2	8
CCME Zinc Guideline (EQ1)					41.4	45	57.8	54.4	39	39.6	41.4	45	43.2	49.2	40.8	47.4	50.3	43.2	36.5	40.2	42.6	56.7	53.8	43.2	38.4
CCME Zinc Guideline (EQ2)					24.9	27.4	54.6	36.8	21.4	21.8	22.9	25.2	26.1	30.2	20.8	26.7	31	28.3	21.6	24.1	27.9	32.7	30.9	30.7	26.8

See notes on last page

Table
Summary of Surface Water Analytical Data - 18771000402
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					18771000402																	
Sample Date					27-Feb-96	29-Apr-03	3-Jun-03	8-Jul-03	12-Aug-03	9-Sep-03	21-Apr-04	26-May-04	22-Jun-04	24-Aug-04	22-Sep-04	19-Oct-04	26-Apr-05	8-Jun-05	12-Jul-05	16-Aug-05	13-Sep-05	4-Oct-05
Sample ID					18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402	18771000402
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_187710004002	HIST_187710004002	HIST_187710004002	HIST_187710004002	HIST_187710004002	HIST_187710004002	HIST_187710004002	HIST_187710004002	HIST_187710004002	HIST_187710004002	HIST_187710004002	HIST_187710004002	HIST_187710004002	HIST_187710004002	HIST_187710004002	HIST_187710004002	HIST_187710004002	HIST_187710004002
General Chemistry																						
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{s16}^{C}$	n/v	51	35.2	48.4	41.2	46.8	54.3	20.8	41.1	47.2	48.2	53.4	64.8	37.6	48.2	52.5	62.3	68.9	35.1
Ammonium	mg/L	n/v	n/v	n/v	0.12	<0.009	0.059	0.026	0.068	0.027	0.022	<0.008	0.029	0.02	0.019	0.013	<0.002	0.071	0.019	0.037	0.013	0.028
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	8.3	8.1	8.8	7.3	7.9	8.6	1.8	7.2	7.8	7.6	7.6	6.3	6.5	8.1	8	7.5	7.8	4.4
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	3.9	9.3	9.8	10.7	12.6	14.5	8.5	11.4	12	13.2	15.4	7.5
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	13.3	9.7	9.1	9.5	9.7	11	10.9	9	8.5	7.7	7.4	25.7
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$_{s9}^{C}$	n/v	10	12.95	10.94	8.06	7.88	9.4	13.37	11.4	9.67	9.54	9.2	11.29	19.91	8.87	7.25	8.47	7.76	9.85
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	142,000	123,000	144,000	127,000	140,000	159,000	51,000	132,000	144,000	143,000	152,000	162,000	115,000	143,000	151,000	170,000	175,000	108,000
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	125	140	126	143	163	52	128	140	142	153	159	125	124	159	168	164	113
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	46.4	53.8	53.6	58	66.8	26	50.6	54	57.4	58.2	72.8	46	57.2	59.4	65.4	72.6	52.4
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.38	0.275	0.083	0.039	0.032	0.027	0.2	0.21	0.084	0.039	0.027	0.056	0.198	<0.015	<0.018	<0.005	<0.005	0.171
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{nT} ^{B}	n/v	n/v	0.002	0.011	0.007	0.01	0.01	0.005	0.008	0.007	0.006	0.007	0.011	0.005	0.005	<0.004	<0.002	<0.003	<0.003	0.011
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	7.21	7.89	7.59	7.87	7.93	8.32	7.72	8.26	7.94	8.04	8.22	8.19	**8.56**^{C}	7.83	**8.97**^{C}	8.38	7.81
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.4	7.51	7.81	7.83	7.83	7.9	7.57	7.83	7.81	7.93	7.97	8.05	7.67	7.82	7.96	8.46	8.07	7.63
Phosphorus, Total	mg/L	n/v	0.030_{s4} ^{E}	n/v	-	0.028	0.022	0.03	0.022	0.019	**0.063**^{E}	0.019	0.027	0.02	0.017	0.019	0.028	**0.031**^{E}	0.019	0.015	0.015	**0.031**^{E}
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.002	0.0034	0.0035	0.0025	0.0027	0.0027	0.0037	0.0028	<0.0015	<0.0021	0.0035	<0.002	0.0038	<0.0007	0.0051	<0.0009	<0.0013	<0.002
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	1.88	1.84	1.34	0.7	0.96	1.64	1.72	1.28	1.02	1.02	1.06	2.44
Residue,Particulate	mg/L	n/v	n/v	n/v	3	13.2	7.5	8.5	6	5.1	60	5.4	12	3.8	4	<2	12.6	11.2	4.3	3.6	3.3	7
Residue-Filterable	mg/L	n/v	n/v	n/v	-	80	94	83	91	103	33	85	93	93	99	105	75	93	98	111	114	70
Stream Condition	none	n/v	n/v	n/v	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}_{s2}$	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC MECC Sulfate Guideline (s2)					218	218	218	218	218	218	128	218	218	218	218	218	218	218	218	218	218	218
Temperature, Lab	deg C	n/v	n/v	n/v	1	2.8	11.8	20.3	20.3	16.4	1.7	7.7	14.8	15.3	17.2	6.1	3.7	16.2	26.9	19.9	20.2	12.8
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	-	0.53	0.53	0.75	0.73	0.5	0.65	0.4	0.47	0.45	0.39	0.46	0.52	0.51	0.39	0.4	0.4	0.96
Total Residue	mg/L	n/v	n/v	n/v	-	93	101	91	97	108	93	91	105	97	103	107	87	104	103	114	117	77
Turbidity, Lab	NTU	n/v	n/v	n/v	4.2	11.1	5.11	7.2	6.8	5.49	36.4	4.81	0.61	5.04	4.13	3.51	8.69	7.83	3.67	3.42	3.61	7.54
Metals																						
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	**200**^{B}	**236**^{B}	96.4	**161**^{B}	72.8	91.9	**537**^{B}	**155**^{B}	**173**^{B}	**121**^{B}	89	72.1	-	**123**^{B}	**118**^{B}	56.9	59.3	**242**^{B}
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	-	15.7	16.8	16	8.85	15.8	9.67	16	16.5	17.1	15.9	14.1	-	18.5	19.1	18.9	22	11.6
Beryllium	µg/L	n/v	11_{s3} ^{C}	n/v	-	0.0158	0.0077	0.0151	0.00764	0.0114	0.0226	0.0137	0.0165	0.00962	0.0155	0.0103	-	0.0108	0.0146	0.00302	0.00478	0.00901
PWQO Beryllium Guideline					11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Cadmium	µg/L	1.0_{STB} ^{A} 0.09_{LTG} ^{B}	0.2^{C} 0.1_{s12} ^{E}	n/v	**<0.2**	**0.0867**^{B}	**0.104**^{BE}	**0.683**^{BCE}	**0.408**^{BCE}	**0.621**^{BCE}	**0.633**^{BCE}	**0.356**^{BCE}	-0.793	**0.262**^{BCE}	-0.214	-0.475	-	**0.158**^{BE}	-0.0402	**0.214**^{BCE}	**0.462**^{BCE}	-0.115
CWQG Cadmium Guideline (STB)					1.25	0.96	1.12	1.11	1.21	1.39	0.53	1.05	1.12	1.19	1.21	1.52	0.95	1.19	1.24	1.36	1.52	1.09
CWQG Cadmium Guideline (LTG)					0.1	0.08	0.09	0.09	0.1	0.11	0.05	0.09	0.1	0.1	0.1	0.12	0.08	0.1	0.1	0.11	0.12	0.09
PWQO Cadmium Guideline					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	n/v	-	13,200	15,200	15,300	16,600	19,200	6,850	14,300	15,300	16,200	16,200	20,700	12,800	16,300	16,900	18,400	20,700	14,600
Chromium	µg/L	n/v	n/v	n/v	<0.4	0.26	0.624	-0.115	0.0907	-0.868	0.925	-0.0347	1.05	-0.046	-0.0774	1.14	-	-0.164	0.373	0.29	0.481	0.135
Cobalt	µg/L	n/v	0.9^{E}	n/v	<0.5	0.454	0.517	0.73	0.562	-0.298	0.516	-0.268	0.617	0.813	-1.09	0.0289	-	0.729	0.309	0.154	-0.0442	0.231
Copper	µg/L	2^{*B}	5^{C} 5_{s13} ^{E}	n/v	**3.5**^{B}	**2.36**^{B}	**2.33**^{B}	**2.31**^{B}	0.812	1.96	1.25	1.88	**2.04**^{B}	**2.55**^{B}	1.92	1.26	-	1.5	**2.56**^{B}	**2.08**^{B}	1.62	1.4
CCME Copper Guideline					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	240	286	133	**324**^{BC}	141	191	**514**^{BC}	176	181	173	133	187	-	155	130	76.1	94.1	**479**^{BC}
Lead	µg/L	$1\#^{B}$	20_{s14} ^{C} 3_{s15} ^{E}	n/v	**<2**	-0.238	-4.37	-3.9	**1.33**^{B}	-9.57	-3.43	-3.86	-1.08	-7.12	-11.8	-2.1	-	-3.2	-0.715	-3.14	2	-3.17
CCME Lead Guideline					1.7	1	1	1	1	1.9	1	1	1	1	1	2.1	1	1	1	1.9	2.1	1
PWQO Lead Guideline (s14)					20	10	20	20	20	20	5	20	20	20	20	20	10	20	20	20	20	10
PWQO Lead Guideline (s15)					3	3	3	3	3	3	1	3	3	3	3	3	3	3	3	3	3	3
Magnesium	µg/L	n/v	n/v	n/v	-	3,320	3,840	3,780	4,020	4,600	2,160	3,620	3,860	4,100	4,300	5,100	3,400	4,020	4,220	4,720	5,100	3,900
Manganese	µg/L	$3{,}600_{EQ3}$ ^{A} 430_{EQ4} ^{B}	n/v	n/v	16	22.2	18.1	34.4	12.7	16.2	47.9	27.8	24.4	14.3	13.4	14	-	24.9	29.3	24.9	32	31.7
CCME Manganese Guideline (EQ3)					4250.7	3391.9	3862.5	3849.9	4126	4670.8	2039.8	3660	3875.1	4088.5	4138.5	5037.2	3366.2	4076	4213.3	4584.8	5025.1	3774.1
CCME Manganese Guideline (EQ4)					490	350	390	390	390	390	350	390	390	390	390	320	350	390	390	220	320	430
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Molybdenum	µg/L	73^{B}	40^{E}	n/v	19	3.28	6.67	4.45	3.15	6.72	-0.467	5.5	5.37	6.92	6.58	3.04	-	6.69	6.79	6.2	7.49	-0.275
Nickel	µg/L	25^{**B}	25^{C}	n/v	<1	1.51	1.21	1.1	-1.03	0.515	0.488	-0.253	0.449	2.69	1.12	0.148	-	0.482	1.19	0.865	1.25	1.88
CCME Nickel Guideline					64.8	25	25	25	25	70.3	25	25	25	25	25	75.1	25	25	225	69.2	74.9	25
Potassium	µg/L	n/v	n/v	n/v	-	900	970	680	880	1,050	690	870	950	910	950	860	850	920	970	850	950	520
Sodium	µg/L	n/v	n/v	n/v	-	5,880	6,660	5,700	6,440	7,040	1,360	5,780	6,140	6,360	6,560	5,300	5,160	6,280	6,580	6,520	6,660	3,380
Strontium	µg/L	n/v	n/v	n/v	-	126	174	136	88.3	173	12.5	148	151	171	163	103	-	181	196	190	191	33.3
Titanium	µg/L	n/v	n/v	n/v	-	6.45	2.93	5.26	2.02	2.89	12.8	4.42	5.49	3.96	3.01	2.16	-	4.21	4.41	2.1	2.51	6.81
Vanadium	µg/L	n/v	6^{E}	n/v	-	0.779	-0.484	0.0395	-0.299	-0.0713	1.48	-0.896	0.459	0.788	0.0503	0.303	-	0.639	-0.263	0.485	0.694	0.79
Zinc	µg/L	37_{EQ1} ^{A} 7.0_{EQ2} ^{B}	30^{C} 20^{E}	n/v	6	2.48	1.36	1.59	1.06	1.26	3.09	1.38	0.615	1.58	0.44	0.815	-	0.911	0.339	0.438	3.38	1.87
CCME Zinc Guideline (EQ1)					43.2	34.9	39.5	39.4	42	47.3	21.5	37.5	39.6	41.7	42.1	50.8	34.6	41.5	42.9	46.4	50.7	38.6
CCME Zinc Guideline (EQ2)					30.7	22	19.9	19.5	21	22.6	13.1	17.5	18.5	18.1	17.9	21.7	19.1	19.3	17.4	12.2	18.2	31.4

See notes on last page

Table
Summary of Surface Water Analytical Data - 18771000602
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					18771000602																			
Sample Date					10-Dec-72	28-Jan-73	25-Feb-73	25-Mar-73	15-Apr-73	27-May-73	4-Jul-73	26-Jul-73	12-Sep-73	30-Sep-73	25-Nov-73	20-Dec-73	29-Jan-74	4-Mar-74	9-Apr-74	28-Apr-74	2-Jun-74	1-Jul-74	6-Aug-74	10-Sep-74	1-Oct-74	12-Nov-74
Sample ID					18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02
General Chemistry																										
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\pm 16}^{C}$	n/v	85	71	68	54	54	65	91	128	116	109	75	93	76	63	82	48	63	78	71	51	63	39
Ammonium	mg/L	n/v	n/v	n/v	7	3.4	4.6	0.86	1	1.4	2.4	13	6.2	1.9	1.8	6.7	5.7	3	5.1	0.21	0.21	0.1	0.9	0.01	0.2	0.01
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	19	9.5	12	20	3	0.4	3.5	8.5	6.5	5	6.5	-	19	6.5	8	3	3	4.5	6.4	5.5	3.6	1
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	22	19	19	17	13	15	18	28	24	19	-	26	31	24	34	3	29	3	30	34	-	5
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$_{s9}^{C}$	n/v	**5**^{B}	8	9	10	8	9	8	9	7	**5**^{B}	9	6	6	**5**^{B}	6	10	10	8	9	7	10	9
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	280	246	244	197	185	210	265	395	365	320	245	325	265	240	310	138	260	290	330	300	285	123
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	74	72	66	68	74	78	100	92	113	114	88	82	62	52	74	51	84	98	104	84	112	52
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.01	0.07	0.02	0.27	0.12	0.2	0.1	0.04	0.01	0.01	0.14	0.01	0.01	0.25	0.01	0.64	0.11	2.7	3.7	0.61	1.8	0.17
Nitrite	mg/L	0.20_{n3} ^{B}	n/v	n/v	0.009	0.03	0.02	0.02	0.01	0.01	0.01	0.04	0.005	0.006	0.01	0.009	0.02	0.05	0.003	0.02	0.02	0.01	0.005	0.01	**0.59**^{B}	0.004
pH, Field	S.U.	6.5-9.0^{B}	6.5-8.5^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	6.5-9.0^{B}	6.5-8.5^{C}	n/v	7.1	-	7.2	7.1	7.2	7.4	7.1	7.1	7.2	7.1	7.2	6.9	7.2	7.1	6.7	8.2	7	7.4	7.6	6.5	8.4	7.4
Phosphorus, Total	mg/L	n/v	0.030_{s4} ^{E}	n/v	**2.7**^{E}	**2**^{E}	**1.2**^{E}	**0.93**^{E}	**0.29**^{E}	**0.43**^{E}	**0.75**^{E}	**2.8**^{E}	**1.5**^{E}	**1.2**^{E}	**0.55**^{E}	**1.8**^{E}	**1.3**^{E}	**0.56**^{E}	**1.3**^{E}	**0.34**^{E}	**0.27**^{E}	**0.97**^{E}	**0.98**^{E}	**1.4**^{E}	**0.41**^{E}	**0.05**^{E}
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	1.7	0.8	0.8	0.17	0.25	0.24	0.42	2.1	1.1	0.22	0.22	1.1	0.84	0.48	0.98	0.06	0.15	0.69	0.7	0.004	0.24	0.02
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	20	15	20	160	15	40	5	30	30	5	-	0	10	10	30	190	10	10	10	10	15	15
Residue-Filterable	mg/L	n/v	n/v	n/v	170	145	120	110	125	160	165	190	110	235	-	230	200	-	170	90	169	189	215	195	185	85
Stream Condition	none	n/v	n/v	n/v	4	4	4	3	3	6	5	6	5	5	4	4	4	4	3	3	3	6	6	5	6	6
Sulfate	mg/L	n/v	n/v	128-429^{F} $_{s2}$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13
BC MECC Sulfate Guideline (s2)					218	218	218	218	218	309	309	309	309	309	309	309	218	218	218	218	309	309	309	309	309	218
Temperature, Lab	deg C	n/v	n/v	n/v	2	1.5	1	1	4.5	12.5	23	23	20	17	1	0	0.5	0.5	1	3	13	23	23	20	12	2
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	10	8	7.7	3.8	2	2.1	3.5	15	8.6	6.8	3.5	9.8	9.4	3.9	7.2	0.94	1.4	1.1	2	3.6	1.7	0.41
Total Residue	mg/L	n/v	n/v	n/v	190	160	140	270	140	200	170	220	140	240	-	230	210	-	200	280	179	199	225	205	200	95
Turbidity, Lab	NTU	n/v	n/v	n/v	27	3.7	6.1	49	6.5	1.6	3.8	4.9	4.5	5.4	5.5	10	7.1	8.6	5	132	2.8	3.1	4.6	5.3	5.2	2.3
Metals																										
Aluminum	µg/L	$5/10^{0VAR1B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	5	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	$1,100^{s3C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					11	11	11	11	11	1100	1100	1100	1100	1100	1100	1100	11	11	11	11	1100	1100	1100	1100	1100	11
Cadmium	µg/L	2.1_{STB} $^{A\ 0.16LTGB}$ 0.16_{LTG} ^{B}	0.2^{C} 0.5_{s12} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	µg/L	2.1_{STB} $^{A\ 0.16LTGB}$	0.2^{C} $0._{5s12E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					1.55	1.5	1.38	1.42	1.55	1.63	2.1	1.93	2.38	2.4	1.84	1.72	1.29	1.08	1.55	1.06	1.76	2.06	2.18	1.76	2.36	1.08
CWQG Cadmium Guideline (LTG)					0.12	0.12	0.11	0.12	0.12	0.13	0.16	0.15	0.18	0.18	0.14	0.13	0.11	0.09	0.12	0.09	0.14	0.16	0.16	0.14	0.17	0.09
PWQO Cadmium Guideline					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.1	0.5	0.1
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	2.3^{*B}	5^{C} $_{5s13E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Copper Guideline					2	2	2	2	2	2	2.4	2.2	2.6	2.6	2.1	2	2	2	2	2	2	2.3	2.4	2	2.6	2
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	**900**^{BC}	-	**850**^{BC}	**4,500**^{BC}	**800**^{BC}	**1,100**^{BC}	**1,100**^{BC}	**1,200**^{BC}	**1,300**^{BC}	**600**^{BC}	**750**^{BC}	**1,200**^{BC}	**1,300**^{BC}	**1,600**^{BC}	**1,000**^{BC}	**4,500**^{BC}	**800**^{BC}	**800**^{BC}	**500**^{BC}	**700**^{BC}	**900**^{BC}	200
Lead	µg/L	$3^{\#B}$	20_{s14} $^{C\ 5s15E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Lead Guideline					2.2	2.1	1.9	1.9	2.2	2.3	3.2	2.9	3.7	3.8	2.7	2.5	1.7	1	2.2	1	2.5	3.1	3.3	2.5	3.7	1
PWQO Lead Guideline (s14)					25	20	20	20	20	20	25	25	25	25	20	25	20	20	25	20	20	20	20	20	20	10
PWQO Lead Guideline (s15)					3	3	3	3	3	3	5	5	5	5	5	5	3	3	3	3	5	5	5	5	5	3
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$6,656_{EQ3}$ $^{A\ 530EQ4B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					5110.1	4988.6	4621.7	4744.4	5110.1	5351.8	6656.4	6186.5	7410.5	7468	5949.7	5592	4374.8	3748.8	5110.1	3685.4	5711.6	6539.4	6889.6	5711.6	7352.8	3748.8
CCME Manganese Guideline (EQ4)					500	490	490	500	490	560	650	590	610	650	560	590	490	500	490	320	590	560	530	560	250	490
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	95^{**B}	25^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Nickel Guideline					76	74.5	69.7	71.3	76	79.1	95.6	89.7	104.9	105.6	86.7	82.2	66.5	25	76	25	83.7	94.1	98.5	83.7	104.2	25
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	128_{EQ1} $^{A\ 47EQ2B}$	$30^{C\ 20E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Zinc Guideline (EQ1)					51.5	50.3	46.8	48	51.5	53.8	66.2	61.7	73.3	73.8	59.5	56.1	44.4	38.4	51.5	37.8	57.2	65.1	68.4	57.2	72.7	38.4
CCME Zinc Guideline (EQ2)					11.4	9.5	9.4	10.5	10.5	9.4	15.2	14	15.7	17.2	12.4	14.8	8.9	8.2	15.8	3.3	14	11.7	10.5	21	5.9	6.4

See notes on last page

Table
Summary of Surface Water Analytical Data - 18771000602
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					18771000602																			
Sample Date					1-Dec-74	4-Feb-75	31-Mar-75	28-Apr-75	27-May-75	13-Jul-75	12-Aug-75	16-Sep-75	5-Oct-75	5-Dec-75	14-Jun-77	5-Jul-77	2-Aug-77	29-Aug-77	28-Sep-77	30-Oct-77	29-Nov-77	1-Jan-78	31-Jan-78	27-Feb-78	25-Mar-78	30-Apr-82
Sample ID					18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602
General Chemistry																									
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\text{+16}}^{\text{C}}$	n/v	62	76	70	28	60	56	49	93	108	70	101	159	136	95	117	104	86	80	75	79	78	-
Ammonium	mg/L	n/v	n/v	n/v	2.8	6.4	3	0.2	0.34	0.01	0.04	4.5	6	2.4	2.84	1.82	4.45	7.1	9.7	8.2	5.5	6.3	5	7.6	6.95	0.004
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	10	13	0.6	1.8	4	8	5	7.6	11	7	9	6	8.5	6	6.4	5.5	4.8	5.5	9	7	5.5	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55	-	52	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	14	27	36	9	46	32	37	32	39	21	33	27	33	38	39	30	24	28.5	18	21	53	7.8
Dissolved Oxygen	mg/L	>5.5/6.0/6.5/9.5$_{\text{VAR}}^{\text{B}}$	$_{\text{s9}}^{\text{C}}$	n/v	8	6	**4^{B}**	8	9	8	9	8	8	6	18	15	22	**4^{B}**	**4^{B}**	**5^{B}**	9	-	-	8	6	7
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	270	292	290	395	320	290	300	350	410	300	370	420	415	390	405	372	316	308	245	274	374	134
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	84	61	67	50	96	86	89	101	109	98	108	162	129	80	135	94	87	76	66	60	65	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	1.9	0.1	0.4	0.21	0.67	2.6	2.7	2.3	0.6	0.67	1.23	0.08	0.02	0.5	2	0.3	0.07	0.08	0.005	0.03	0.02	0.87
Nitrite	mg/L	0.20$_{\text{n}}^{\text{B}}$	n/v	n/v	0.07	0.02	0.04	0.01	**0.23^{B}**	**0.52^{B}**	**0.82^{B}**	**0.89^{B}**	0.2	0.03	**0.67^{B}**	0.04	0.03	0.15	0.04	0.02	0.01	0.01	0.01	0.02	0.01	-
pH, Field	S.U.	6.5-9.0^{B}	6.5-8.5^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	6.5-9.0^{B}	6.5-8.5^{C}	n/v	7.6	7	7.2	7.2	7.3	7.2	7.2	7.3	7.4	7.2	7.11	8.34	7.04	7.03	7.03	7.27	7.32	6.93	6.8	6.94	6.93	6.74
Phosphorus, Total	mg/L	n/v	0.030$_{\text{s4}}^{\text{E}}$	n/v	**0.93^{E}**	**1.4^{E}**	**1.3^{E}**	**0.05^{E}**	**0.33^{E}**	**0.87^{E}**	**0.66^{E}**	**1.6^{E}**	**1.1^{E}**	**0.59^{E}**	**0.68^{E}**	**0.34^{E}**	**1.5^{E}**	**1.82^{E}**	**1.93^{E}**	**4.7^{E}**	**0.85^{E}**	**1.35^{E}**	**1.65^{E}**	**1.5^{E}**	**1.38^{E}**	**0.17^{E}**
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.67	1	0.66	0.05	0.11	0.77	0.1	1.3	1	0.38	0.46	0.09	0.87	1.2	1.65	1.5	0.35	0.94	1.05	1.27	1.18	0.06
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.4	-	2.5	-
Residue,Particulate	mg/L	n/v	n/v	n/v	15	15	26	17	25	10	14	13	15	9	13	11	18	11	9.6	6.7	11	24	13	12	8.4	35.3
Residue-Filterable	mg/L	n/v	n/v	n/v	176	155	209	257	208	189	181	251	235	195	-	-	-	-	-	-	-	-	159	-	243	-
Stream Condition	none	n/v	n/v	n/v	4	4	4	3	6	8	8	8	6	4	-	0	-	0	0	-	4	4	4	4	4	3
Sulfate	mg/L	n/v	n/v	128-429$^{\text{F}}_{\text{s2}}$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18.5	-	19.5	-
BC MECC Sulfate Guideline (s2)					309	218	218	218	309	309	309	309	309	309	309	309	309	309	309	309	309	309	218	218	218	309
Temperature, Lab	deg C	n/v	n/v	n/v	0	0	0	2.5	17	24	23.5	14	11.5	1.5	18	26	25	18	13	6	0	0	0	0	0	7
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	3.7	8.2	5.8	0.9	1.4	1.8	1.1	8.2	6.3	3.5	3	2	6.9	8.4	9.7	25	6.2	8.2	7.7	7.6	8.1	0.68
Total Residue	mg/L	n/v	n/v	n/v	191	170	235	274	233	199	195	264	250	204	254	271	262	265	273	249	216	224	172	190	251	-
Turbidity, Lab	NTU	n/v	n/v	n/v	15	3.8	5.5	9	1.4	6.4	3.2	3.9	6	4	6.6	4.6	4.4	4.5	3.6	6.1	6.6	8.4	7.7	5.6	5.4	23
Metals																										
Aluminum	µg/L	5/10$^{0\text{VAR1B}}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	1,100$^{\text{s3C}}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	11	11	11	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	11	11	11	1100
Cadmium	µg/L	2.1$_{\text{STB}}^{\text{A 0.16LTGB}}$ 0.16$_{\text{LTG}}^{\text{B}}$	0.2^{C} 0.5$_{\text{s12}}^{\text{E}}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	µg/L	2.1$_{\text{STB}}^{\text{A 0.16LTGB}}$	0.2^{C} 0.$_{\text{s12E}}^{5}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					1.76	1.27	1.4	1.04	2.01	1.8	1.86	2.12	2.29	2.06	2.27	3.43	2.72	1.67	2.85	1.97	1.82	1.59	1.38	1.25	1.35	2.12
CWQG Cadmium Guideline (LTG)					0.14	0.11	0.11	0.09	0.15	0.14	0.14	0.16	0.17	0.16	0.17	0.24	0.2	0.13	0.2	0.15	0.14	0.13	0.11	0.1	0.11	0.16
PWQO Cadmium Guideline					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.5	0.1	0.5	0.5	0.5	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	2.3$^{\text{B}}$	5^{C} $_{\text{s13E}}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Copper Guideline					2	2	2	2	2.3	2.1	2.1	2.4	2.5	2.3	2.5	3.6	2.9	2	3.1	2.2	2.1	2	2	2	2	2.4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	**1,300^{BC}**	**800^{BC}**	**1,100^{BC}**	**440^{BC}**	**1,500^{BC}**	**500^{BC}**	**350^{BC}**	**550^{BC}**	**860^{BC}**	**580^{BC}**	**960^{BC}**	**360^{BC}**	270	**570^{BC}**	**660^{BC}**	**540^{BC}**	**860^{BC}**	**1,720^{BC}**	**1,350^{BC}**	**1,100^{BC}**	**1,000^{BC}**	-
Lead	µg/L	3$^{\text{\#B}}$	20$_{\text{s14}}^{\text{C 5s15E}}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Lead Guideline					2.5	1.7	1.9	1	3	2.6	2.7	3.2	3.6	3.1	3.5	5.9	4.4	2.4	4.7	2.9	2.7	2.2	1.9	1.7	1.8	3.2
PWQO Lead Guideline (s14)					20	20	20	10	20	20	20	25	25	20	25	25	25	25	25	25	25	20	20	20	20	20
PWQO Lead Guideline (s15)					5	3	3	3	5	5	5	5	5	5	5	5	5	3	5	5	5	3	3	3	3	5
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	6,656$_{\text{EO3}}^{\text{A 530EQ4B}}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	-	150	-
CCME Manganese Guideline (EQ3)					5711.6	4312.8	4683.1	3621.9	6422.1	5830.8	6009.1	6714.8	7179.6	6539.4	7121.8	10167.1	8324.1	5472.1	8663.1	6304.5	5890.3	5231.1	4621.7	4250.7	4560.2	6714.8
CCME Manganese Guideline (EQ4)					490	500	490	490	560	560	560	610	610	560	650	400	710	590	710	560	560	590	490	490	490	670
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	95$^{\text{*B}}$	25^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Nickel Guideline					83.7	65.6	70.5	25	92.7	85.2	87.5	96.3	102	94.1	101.3	137.9	116	80.7	120.1	91.2	86	77.6	69.7	64.8	68.9	96.3
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	128$_{\text{EO1}}^{\text{A 47EQ2B}}$	30^{C} $_{\text{20E}}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Zinc Guideline (EQ1)					57.2	43.8	47.4	37.1	64	58.4	60	66.7	71.1	65.1	70.5	98.9	81.8	54.9	85	62.8	58.9	52.6	46.8	43.2	46.2	66.7
CCME Zinc Guideline (EQ2)					8.6	10.3	9.6	7.3	12.4	12.1	12.5	13	12.9	13.7	16.2	8.7	20.3	13	21.4	12.5	11.1	13.5	13.1	10.7	11.6	20.6

See notes on last page

Table
Summary of Surface Water Analytical Data - 18771000602
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					18771000602																			
Sample Date					30-May-82	21-Jun-82	18-Jul-82	20-Aug-82	16-Sep-82	22-Oct-82	14-Nov-82	13-Dec-82	24-Jan-83	27-Apr-83	25-May-83	27-Jun-83	25-Jul-83	31-Aug-83	20-Sep-83	16-Oct-83	14-Nov-83	10-Dec-83	23-Jan-84	29-Apr-84	27-May-84	26-Jun-84
Sample ID					18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602	HIST_18771000602
General Chemistry																									
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\pm 16}^{C}$	n/v	75.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37.8	42.3	67.8	60.6
Ammonium	mg/L	n/v	n/v	n/v	0.008	0.01	0.01	0.03	0.008	0.008	0.01	0.008	1,116	-	0.08	0.77	1.35	0.52	4.65	1.65	2.3	2.67	4.35	0.76	1.29	0.008
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	75	**140**^{B}	28.2	39.8	34.5	20.3	18.8	22.8	22.7	12.6	15.4	26.8	47.3	51.7	55.3	41.65	28.05	27.65	29.3	14.5	22.61	12.44
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$_{s9}^{C}$	n/v	15	8	8	**3**^{B}	**5**^{B}	6	8	-	7	10	7	**5**^{B}	6	**4**^{B}	**4**^{B}	6	8	8	8	-	9	13
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	433	666	355	359	336	284	271	254	256	203	204	273	377	380	385	374	313	315	260	178	268	204
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	2.9	2.35	2.45	2.85	3.5	1.9	2.3	4.28	3.1	1.44	1.21	2.17	3.17	4.43	3.06	3.54	1.95	2.61	0.36	0.55	1.3	1.45
Nitrite	mg/L	0.20_{n3} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	6.5-9.0^{B}	6.5-8.5^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	6.5-9.0^{B}	6.5-8.5^{C}	n/v	7.23	7.59	7.07	7.13	6.88	7.39	7.17	7.63	7.44	7.1	7	6.79	6.88	6.63	7.04	6.78	7.19	7.85	6.96	6.91	7.19	7.3
Phosphorus, Total	mg/L	n/v	0.030_{s4} ^{E}	n/v	**0.46**^{E}	**0.36**^{E}	**0.43**^{E}	**1.72**^{E}	**0.6**^{E}	**0.8**^{E}	**0.2**^{E}	**0.29**^{E}	**0.72**^{E}	**0.57**^{E}	**0.29**^{E}	**0.32**^{E}	**0.47**^{E}	**0.46**^{E}	**0.4**^{E}	**0.37**^{E}	**0.44**^{E}	**0.68**^{E}	**0.49**^{E}	**0.26**^{E}	**0.63**^{E}	**0.25**^{E}
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.21	0.21	0.34	0.95	0.46	0.06	0.14	0.14	0.49	0.14	0.13	0.15	0.37	0.33	0.34	0.22	0.29	0.56	0.29	0.17	0.32	0.18
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	22.2	10.1	4.54	194	-	11.9	11.8	17.6	15.6	189	45.9	37.8	6.64	5.57	9.24	29.6	14.5	15.8	8.54	23.13	10.31	19.86
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	51	5	5	5	507	5	4	4	4	3	3	-	7	5	5	5	4	4	4	3	7	7
Sulfate	mg/L	n/v	n/v	128-429$^{F}_{s2}$	17.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.56	21.88	21.33	16.33
BC MECC Sulfate Guideline (s2)					309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309
Temperature, Lab	deg C	n/v	n/v	n/v	21	-	22	19	14	4	1	-	-	3	7	15	20	21	16	5	2	-	-	3	11	17
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	1.4	1.15	0.95	2.55	0.85	0.13	0.82	0.8	3.1	0.22	1.15	1.1	-	1.43	5.9	1.9	3	-	-	2.03	2	0.93
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	12.6	8.6	3.1	72	3.1	4.7	6.1	3.7	7.6	100	10	22	11.5	2.2	2.6	8.2	8.5	12.9	10.4	10.9	12.8	12
Metals																										
Aluminum	µg/L	$5/10^{0VAR1B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	<1	<1	<1
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	$1,100^{s3C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Cadmium	µg/L	2.1_{STB} $^{A\ 0.16LTGB}$ 0.16_{LTG} ^{B}	0.2^{C} 0.5_{s12} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	µg/L	2.1_{STB} $^{A\ 0.16LTGB}$	0.2^{C} $0.^{5s12E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12
CWQG Cadmium Guideline (LTG)					0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	2.3^{*B}	$5^{C\ 5s13E}$	n/v	**10**^{BCE}	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**20**^{BCE}	**10**^{BCE}	**8**^{BCE}	**9**^{BCE}
CCME Copper Guideline					2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	**1,410**^{BC}	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,240**^{BC}	**1,150**^{BC}	**690**^{BC}	**1,110**^{BC}
Lead	µg/L	$3^{\#B}$	20_{s14} $^{C\ 5s15E}$	n/v	**5**^{B}	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**20**^{BC}	3	<3	3
CCME Lead Guideline					3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
PWQO Lead Guideline (s14)					20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	10	20	20	20
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$6,656_{EO3}$ $^{A\ 530EQ4B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8
CCME Manganese Guideline (EQ4)					610	530	650	650	670	610	650	530	610	650	650	670	670	640	650	670	650	470	670	670	650	610
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	95^{**B}	25^{C}	n/v	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	<2	2	3
CCME Nickel Guideline					96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	128_{EQ1} $^{A\ 47EQ2B}$	$30^{C\ 20E}$	n/v	**20**^{B}	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**20**^{B}	10	**20**^{B}	10
CCME Zinc Guideline (EQ1)					66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7
CCME Zinc Guideline (EQ2)					13.8	10.3	15.7	15	18.3	12.1	14.5	10	11.6	15.3	16.6	19.7	18.3	22.5	16.1	19.9	14.2	8.3	17.2	17.9	14.2	13

See notes on last page

Table
Summary of Surface Water Analytical Data - 18771000602
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					18771000602																			
Sample Date					23-Jul-84	30-Aug-84	30-Sep-84	28-Oct-84	19-Nov-84	17-Dec-84	28-Jan-85	26-May-85	19-Jun-85	20-Jul-85	13-Aug-85	20-Sep-85	27-Oct-85	21-Nov-85	17-Dec-85	17-Feb-86	31-Mar-86	21-Apr-86	1-Jun-86	30-Jun-86	23-Aug-86	29-Sep-86
Sample ID					18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02
General Chemistry																										
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{+1/6}^{C}$	n/v	82.8	79	88.7	66.6	73.9	61.5	-	59.2	59.4	78.2	75.6	77.7	74.1	50.2	70.4	64.9	51.5	28.7	82.1	70.8	64.2	73.8
Ammonium	mg/L	n/v	n/v	n/v	0.14	0.85	0.99	0.28	1.49	0.55	-	0.31	0.58	0.02	0.02	1.28	1.09	0.28	5.06	3.81	1.35	0.12	1.94	0.01	0.79	0.14
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	27.3	38.06	28.68	34.59	23.83	60.1	-	33.6	34	20.25	31.6	43.88	28.85	11.75	24.5	22.35	91.8	8.55	38	44.5	37	30.8
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$_{s9}^{C}$	n/v	9	**3^{B}**	7	7	12	16	**5^{B}**	**3^{B}**	6	9	7	**3^{B}**	9	13	**5^{B}**	12	10	8	8	-	-	-
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	323	370	332	328	285	390	-	294	301	275	318	391	321	201	275	249	491	124	342	354	319	306
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	3.15	4.06	2.59	2.66	0.83	0.83	-	3.26	3	1.69	3.59	4.63	2.46	0.77	1.37	0.68	1.36	0.21	1.46	4.01	0.76	3.54
Nitrite	mg/L	0.20_{nl} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.22	6.99	7.24	7.09	7.3	7.16	-	7.11	7.45	7.56	7.62	7.48	7.61	7.51	7.44	7.47	7.46	7.6	7.44	7.4	7.5	7.51
Phosphorus, Total	mg/L	n/v	0.030_{s4} ^{E}	n/v	**0.43^{E}**	**0.64^{E}**	**0.52^{E}**	**0.31^{E}**	**0.27^{E}**	**0.27^{E}**	-	**0.63^{E}**	**0.45^{E}**	**0.29^{E}**	**0.36^{E}**	**0.61^{E}**	**0.35^{E}**	**0.12^{E}**	**0.55^{E}**	**0.69^{E}**	**0.31^{E}**	**0.14^{E}**	**0.42^{E}**	**0.73^{E}**	**0.78^{E}**	**0.19^{E}**
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.37	0.64	0.4	0.23	0.16	0.12	-	0.56	0.45	0.01	0.34	0.61	0.24	0.06	0.41	0.56	0.21	0.03	0.31	0.58	0.75	0.11
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	6,764	6,144	7,912	17.12	13.74	40.06	-	-	23.33	12.97	7,534	5,535	12.34	7.54	11.61	6,038	23.9	44.6	13	9.1	-	3.6
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	7	-	-	-	4	8	4	8	8	8	5	5	8	8	4	4	3	3	8	-	-	-
Sulfate	mg/L	n/v	n/v	128-429$^{F}_{s2}$	18.73	19.3	19.61	22.6	21.96	21.86	-	15.75	17.15	19.25	14.35	19.93	26.25	22.6	18.5	10.1	16.5	14.4	17.5	17.01	17.8	17.97
BC MECC Sulfate Guideline (s2)					309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309
Temperature, Lab	deg C	n/v	n/v	n/v	22	20	9	9	1	1	1	13	14	18	17	18	6	2	-	-	2	2	14	-	-	-
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	1.29	1.76	1.69	1.2	2.75	1.4	-	1.45	1.86	1.05	0.79	1.6	1.79	0.98	5.2	5.95	2.75	0.8	2.35	1.07	2.05	1.06
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	7.3	7.6	6.9	11.9	9.2	36	-	3	25	12.7	8.1	3.7	8.2	18.9	3.2	6.7	14.4	24	11.1	8.8	58	2.5
Metals																										
Aluminum	µg/L	$5/10^{0VAR1B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	<1	<1	<1	<1	**10^{BE}**	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	$1,100^{s3C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Cadmium	µg/L	2.1_{STB} ^{A} 0.16_{LTG} ^{B}	0.2^{C} 0.5_{s12} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	µg/L	2.1_{STB} $^{A\ 0.16LTGB}$	0.2^{C} $0._{5s12E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12
CWQG Cadmium Guideline (LTG)					0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	2.3^{*B}	$5^{C\ 5s13E}$	n/v	**6^{BCE}**	**7^{BCE}**	**8^{BCE}**	**10^{BCE}**	**9^{BCE}**	**10^{BCE}**	**20^{BCE}**	**10^{BCE}**	**10^{BCE}**	**9^{BCE}**	**9^{BCE}**	**10^{BCE}**	**10^{BCE}**	**9^{BCE}**	-	**30^{BCE}**	**10^{BCE}**	**10^{BCE}**	**9^{BCE}**	**10^{BCE}**	**20^{BCE}**	**10^{BCE}**
CCME Copper Guideline					2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	**630^{BC}**	270	**540^{BC}**	**940^{BC}**	**760^{BC}**	**2,250^{BC}**	-	**1,020^{BC}**	**1,000^{BC}**	**910^{BC}**	**680^{BC}**	240	**760^{BC}**	**920^{BC}**	-	**670^{BC}**	**990^{BC}**	**1,400^{BC}**	**340^{BC}**	**320^{BC}**	**2,400^{BC}**	**380^{BC}**
Lead	µg/L	$3^{\#B}$	20_{s14} $^{C\ 5s15E}$	n/v	<3	**4^{B}**	<3	**10^{BE}**	<3	**10^{BE}**	3	<3	**10^{BE}**	**4^{B}**	**4^{B}**	**4^{B}**	**5^{B}**	<3	-	**4^{B}**	**8^{BE}**	**6^{BE}**	<3	**4^{B}**	**10^{BE}**	<3
CCME Lead Guideline					3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
PWQO Lead Guideline (s14)					25	20	25	20	20	20	20	20	20	20	20	20	20	20	20	20	20	10	25	20	20	20
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$6,656_{EO3}$ $^{A\ 530EQ4B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8
CCME Manganese Guideline (EQ4)					610	670	610	650	610	650	610	650	610	530	530	610	530	530	610	610	610	530	610	610	530	530
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	95^{**B}	25^{C}	n/v	<2	3	<2	3	<2	4	<2	2	2	5	2	3	4	3	-	2	3	2	<2	<2	5	<2
CCME Nickel Guideline					96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	128_{EO1} $^{A\ 47EQ2B}$	$30^{C\ 20E}$	n/v	10	10	10	**30^{BE}**	**20^{B}**	**50^{BCE}**	**30^{BE}**	**30^{BE}**	**40^{BCE}**	**20^{B}**	**20^{B}**	**20^{B}**	**30^{BE}**	**20^{B}**	-	**100^{BCE}**	**30^{BE}**	**20^{B}**	**20^{B}**	10	**40^{BCE}**	**20^{B}**
CCME Zinc Guideline (EQ1)					66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7
CCME Zinc Guideline (EQ2)					13.9	16.8	13.7	15.5	13	14.6	13	15.2	11.5	10.5	10	11.2	10.1	11	11.6	11.3	11.4	10.2	11.6	12	11.1	11

See notes on last page

Table
Summary of Surface Water Analytical Data - 18771000602
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					18771000602																			
Sample Date					23-Oct-86	16-Nov-86	15-Dec-86	18-Jan-87	24-Feb-87	16-Mar-87	30-May-87	27-Jun-87	30-Aug-87	25-Oct-87	23-Nov-87	14-Dec-87	18-Jan-88	28-Feb-88	21-Mar-88	30-May-88	19-Jun-88	17-Jul-88	14-Aug-88	20-Sep-88	24-Oct-88	20-Nov-88
Sample ID					18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02
General Chemistry																									
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\pm 16}^{C}$	n/v	65.9	74.1	59.3	74.8	74.7	75.9	78.5	87.3	74.9	76.5	79	68.9	72.8	70.1	93.4	66	78	84	51	124	65	53
Ammonium	mg/L	n/v	n/v	n/v	0.56	1.46	1.64	3.49	4.16	3.74	0.02	0.004	0.06	1.24	2.52	1.45	3.36	3.69	5.44	0.02	0.21	0.04	0.08	0.34	0.5	0.44
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640[A] 120[B]	n/v	n/v	23.5	30	23	30.5	38.5	49.8	38.8	33.3	52	36.3	38.5	53.5	31.8	30.5	91.1	27	57	54	26	30	22	20
Dissolved Oxygen	mg/L	>5.5/6.0/6.5/9.5$_{VAR}$[B]	$_{s9}^{C}$	n/v	9	12	9	**5[B]**	10	12	**3[B]**	8	6	9	11	-	7	9	8	-	6	**2.5[B]**	6	**3.5[B]**	9	8
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	263	292	241	290	306	346	328	334	404	366	363	367	291	277	529	271	411	410	248	321	265	237
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550[A] 13[B]	n/v	n/v	1.89	1.38	1.53	0.72	0.48	0.4	2.89	2.71	5.25	3.11	2.56	0.82	0.37	0.31	0.53	1.56	4.48	2.92	1.62	2.9	1.46	0.74
Nitrite	mg/L	0.20$_{n1}$[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	7.73	7.58	7.26	7.8	7.34	7.61	7.77	7.67	7.52	7.44	7.52	7.43	7.5	7.22	7.51	7.1	7	7.2	7.1	7.3	7.2	7.2
Phosphorus, Total	mg/L	n/v	0.030$_{s4}$[E]	n/v	**0.26[E]**	**0.31[E]**	**0.4[E]**	**0.8[E]**	**0.8[E]**	**0.57[E]**	**0.42[E]**	**0.31[E]**	**0.42[E]**	**0.4[E]**	**0.72[E]**	**0.35[E]**	**0.8[E]**	**0.67[E]**	**0.88[E]**	**0.25[E]**	**0.76[E]**	**0.41[E]**	**0.68[E]**	**0.3[E]**	**0.2[E]**	**0.12[E]**
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.19	0.16	0.28	0.42	0.63	0.48	0.12	0.27	0.41	0.35	0.64	0.28	0.77	0.59	0.74	0.2	0.54	0.41	0.27	0.28	0.15	0.005
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	6.8	14.2	6.1	8.8	7.8	11.4	10.2	8.5	4.1	10.3	12.9	6.3	11.2	7.8	11.2	15	8	2	65	4	6	20
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	8	4	4	4	4	4	8	8	5	5	4	-	4	4	4	-	-	578	8	8	548	4
Sulfate	mg/L	n/v	n/v	128-429[F] $_{s2}$	15.9	18.2	13.3	14.45	14.72	15.2	15.57	15.1	20.1	34	24	20.4	16.2	13.4	19.4	17.8	21.6	20.15	20.2	19.5	23	18.8
BC MECC Sulfate Guideline (s2)					309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309
Temperature, Lab	deg C	n/v	n/v	n/v	6	2	-	-	1	-	21	20	15	4	1	-	-	-	-	-	19	18	24	18	6	1
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	1.53	2.7	2.65	4.68	6.05	5.2	1.64	0.81	1	2.25	3.65	2.07	-	5.6	7	0.89	1.1	1	1.2	1.36	1.5	1.2
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	7.6	11.3	5.4	7.2	6.7	9.8	7.3	6.5	2.2	10.3	5.5	8.9	11.1	2.7	6.9	12	7.8	2.3	45	6.3	5.4	16
Metals																										
Aluminum	µg/L	5/10^{0VAR1B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5[B]	100[C] 5[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-	-	-	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	1,100^{s3C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Cadmium	µg/L	2.1$_{STB}^{A}$ 0.16$_{LTG}^{B}$	0.2[C] 0.5$_{s12}$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	µg/L	2.1$_{STB}^{A\ 0.16LTGB}$	0.2[C] 0.^{5s12E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12
CWQG Cadmium Guideline (LTG)					0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	2.3[B]	5[C 5s13E]	n/v	**10[BCE]**	**10[BCE]**	**10[BCE]**	-	-	**20[BCE]**	**10[BCE]**	**10[BCE]**	-	**10[BCE]**	**20[BCE]**	**20[BCE]**	**20[BCE]**	**20[BCE]**	**20[BCE]**	**8[BCE]**	**21[BCE]**	**6.1[BCE]**	**40[BCE]**	**13[BCE]**	**17[BCE]**	**7.7[BCE]**
CCME Copper Guideline					2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300[B]	300[C]	n/v	**540[BC]**	**310[BC]**	**400[BC]**	-	-	**900[BC]**	**740[BC]**	**570[BC]**	-	**490[BC]**	**700[BC]**	**650[BC]**	40	**740[BC]**	**790[BC]**	**790[BC]**	**680[BC]**	300	**4,600[BC]**	**430[BC]**	**450[BC]**	**890[BC]**
Lead	µg/L	3[#B]	20$_{s14}$[C 5s15E]	n/v	<3	**4[B]**	<3	-	-	**6[BE]**	**7[BE]**	**7[BE]**	-	<3	3	**4[B]**	<3	**4[B]**	3	<3	<2	<2	2	**<3.5**	<2	**<4.5**
CCME Lead Guideline					3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
PWQO Lead Guideline (s14)					20	20	20	20	20	20	20	25	20	20	20	20	20	20	25	20	20	25	20	25	20	20
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	6,656$_{EO3}^{A\ 530EQ4B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8
CCME Manganese Guideline (EQ4)					470	530	610	470	610	530	470	530	530	610	530	610	530	610	530	650	650	610	650	610	610	610
Mercury	µg/L	0.026[B]	0.2[C]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73[B]	40[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	95^{**B}	25[C]	n/v	2	3	<2	-	-	2	2	2	-	3	3	2	**70[C]**	3	3	<3	<2.5	<2.5	8	<2.5	<1	<2
CCME Nickel Guideline					96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	128$_{EO1}^{A\ 47EQ2B}$	30[C 20E]	n/v	**10[B]**	**30[BE]**	10	-	-	**30[BE]**	**20[B]**	**20[B]**	-	**30[BE]**	**50[BCE]**	**40[BCE]**	10	**30[BE]**	**40[BCE]**	**18[B]**	16	8.8	**90[BCE]**	**34[BCE]**	**37.6[CE]**	**27.4[E]**
CCME Zinc Guideline (EQ1)					66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7
CCME Zinc Guideline (EQ2)					9.2	10.4	13.5	8.7	12.6	10.1	8.9	9.6	10.9	11.6	10.9	11.7	11.1	13.9	11	15.3	16.6	14.1	15.3	13	14.1	14.1

See notes on last page

Table
Summary of Surface Water Analytical Data - 18771000602
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					18771000602																			
Sample Date					13-Dec-88	16-Jan-89	12-Feb-89	13-Mar-89	23-May-89	17-Jun-89	15-Jul-89	12-Aug-89	24-Sep-89	17-Oct-89	20-Nov-89	11-Dec-89	21-Jan-90	25-Feb-90	18-Mar-90	31-May-91	25-Jun-91	20-Jul-91	18-Aug-91	15-Sep-91	15-Oct-91	24-Nov-91
Sample ID					18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02
General Chemistry																										
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\pm 16}^{C}$	n/v	54	66	75	96	48	55	64	36	73	75	64	67	68	70	53	76.5	100.2	98.8	112.6	99.9	89	68.9
Ammonium	mg/L	n/v	n/v	n/v	1.3	3.9	4.6	6.7	0.59	0.03	0.02	0.02	1.5	0.77	1.07	1.25	4.03	3.8	0.67	0.04	0.05	0.1	0.58	0.07	0.68	1.04
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	19	26	26	53	21	28	33	4.3	45	41	39	34	-	68	42	41	79	75	75	69	43	35
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$_{s9}^{C}$	n/v	-	8	**2**^{B}	**5**^{B}	8	6	8	-	7	9	8	8	**5**^{B}	9	-	9	8	7	**5**^{B}	6	6	10
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	232	282	332	437	207	240	292	128	373	423	335	309	330	418	308	350	585	570	556	567	434	325
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	7	-	7	7	8
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.87	0.64	1.14	1.21	0.44	1.42	2.5	0.33	2.17	2.85	1.9	2.65	1.34	1.57	0.88	3.07	2.95	2.19	2.74	3.92	3.29	1.05
Nitrite	mg/L	0.20_{n1} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	6.5-9.0^{B}	6.5-8.5^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	6.5-9.0^{B}	6.5-8.5^{C}	n/v	6.9	6.9	7.2	7	7.2	7.2	7.2	7.9	7.2	7.3	7.3	7.2	7.1	7.3	7.2	7.1	7.5	7.3	7.6	7.5	7.4	7.4
Phosphorus, Total	mg/L	n/v	0.030_{s4} ^{E}	n/v	**0.3**^{E}	**0.85**^{E}	**0.85**^{E}	**1.6**^{E}	**0.28**^{E}	**0.25**^{E}	**0.27**^{E}	0.01	**0.99**^{E}	**0.24**^{E}	**0.31**^{E}	**0.39**^{E}	**0.45**^{E}	**0.95**^{E}	**0.32**^{E}	**0.29**^{E}	**0.26**^{E}	**0.47**^{E}	**0.45**^{E}	**0.23**^{E}	**0.13**^{E}	**0.12**^{E}
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.18	0.51	0.67	0.99	0.12	0.09	0.13	0.002	0.85	0.2	0.15	0.22	-	0.32	0.06	0.19	0.15	0.38	0.35	0.2	0.07	0.06
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	10	20	8	9	35	35	9	1	6	6	20	15	10	55	20	15	5	7	5	7	7	8
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	-	4	4	4	8	8	8	-	8	8	4	4	4	4	8	-	7	-	7	-	-	-
Sulfate	mg/L	n/v	n/v	128-429^{F} $_{s2}$	16	21.1	17.4	22.2	14	15.1	20.1	16.7	28	59.7	33.2	27.4	23.2	22.3	27.6	22.6	54.1	64	47.2	52.7	40.2	29.1
BC MECC Sulfate Guideline (s2)					309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309	309
Temperature, Lab	deg C	n/v	n/v	n/v	-	1	1	1	14	14	18	-	14	5	1	1	1	1	1	1.8	23	25	19	15	11	2
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	2.4	6.3	7.5	11	1.5	1.2	1	0.45	2.6	1.7	2.2	2.2	-	6.5	1.9	1.24	1.17	1.75	1.38	1.09	0.96	1.95
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	9.8	20	6.7	8.3	21	21	6.9	2	3.7	5.6	16	13	-	41	20	11	3	4	2.1	60	4.8	7.5
Metals																										
Aluminum	µg/L	$5/10^{0VAR1B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	<0.3	-	-	-	-	-	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	$1,100^{s3C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Cadmium	µg/L	2.1_{STB} $^{A\ 0.16LTGB}$ 0.16_{LTG} ^{B}	0.2^{C} 0.5_{s12} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	µg/L	2.1_{STB} $^{A\ 0.16LTGB}$	0.2^{C} $0.^{5s12E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12	2.12
CWQG Cadmium Guideline (LTG)					0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	$2.3^{\#B}$	$5^{C\ 5s13E}$	n/v	**22**^{BCE}	**61**^{BCE}	**44**^{BCE}	**57**^{BCE}	**14**^{BCE}	**11**^{BCE}	**12**^{BCE}	**17**^{BCE}	**15**^{BCE}	**7.8**^{BCE}	**27**^{BCE}	**32**^{BCE}	-	**52**^{BCE}	**<25**	**15**^{BCE}	**7.7**^{BCE}	**12**^{BCE}	**6.9**^{BCE}	**8.1**^{BCE}	**8.9**^{BCE}	**10**^{BCE}
CCME Copper Guideline					2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	**730**^{BC}	**2,100**^{BC}	**990**^{BC}	**1,100**^{BC}	**1,200**^{BC}	**1,200**^{BC}	**640**^{BC}	130	**400**^{BC}	**310**^{BC}	**1,000**^{BC}	**990**^{BC}	-	**2,300**^{BC}	**1,600**^{BC}	**1,900**^{BC}	**430**^{BC}	**380**^{BC}	170	**330**^{BC}	**450**^{BC}	**620**^{BC}
Lead	µg/L	$3^{\#B}$	20_{s14} $^{C\ 5s15E}$	n/v	<2.5	**<20**	<2	<3	**<4**	**<7**	**<4.5**	<2	<2	<2	**<3.5**	<2.5	-	**<7**	**<31**	**<6.6**	**<4.6**	<2	<2	<3	<2	**<4**
CCME Lead Guideline					3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
PWQO Lead Guideline (s14)					20	20	20	25	20	20	20	10	20	20	20	20	20	20	20	20	25	25	25	25	25	20
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$6,656_{EO3}$ $^{A\ 530EQ4B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8	6714.8
CCME Manganese Guideline (EQ4)					670	670	610	650	610	610	610	470	610	610	610	610	650	610	610	650	530	610	530	530	610	610
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	95^{**B}	25^{C}	n/v	<2	<10	<2.5	<4.5	<2.5	<3	<2.5	**53**^{C}	<2	<2.5	<2.5	<2.5	-	<3	<10	<2.9	<3.4	<2.6	<1	<2.3	<2.5	<1
CCME Nickel Guideline					96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3	96.3
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	128_{EQ1} $^{A\ 47EQ2B}$	$30^{C\ 20E}$	n/v	**36**^{BCE}	**77**^{BCE}	**46**^{BCE}	**53**^{BCE}	**25**^{BE}	**19**^{B}	**37**^{BCE}	<3.6	**21**^{BE}	**20**^{B}	**46**^{BCE}	**39**^{BCE}	**42**^{BCE}	**51**^{BCE}	**<44**	**31**^{BCE}	**14**^{B}	**21**^{BE}	**17**^{B}	**19**^{B}	**30**^{BE}	**28**^{BE}
CCME Zinc Guideline (EQ1)					66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7
CCME Zinc Guideline (EQ2)					18	18	14.1	16.6	14.1	14.1	14.1	8	14.1	13	13	14.1	15.3	13	14.1	15.3	11.1	13	10.2	11.1	12	12

See notes on last page

Table
Summary of Surface Water Analytical Data - 18771000602
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					18771000602																			
Sample Date					30-Dec-91	28-Jan-92	24-Feb-92	22-Mar-92	25-Apr-92	28-Sep-92	27-Oct-92	29-Nov-92	15-Dec-92	23-Jan-93	15-Feb-93	28-Mar-93	27-Apr-93	25-May-93	21-Jun-93	22-Aug-93	26-Sep-93	19-Dec-93	20-Feb-94	11-Apr-94	29-May-94	26-Jun-94
Sample ID					18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02
General Chemistry																									
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{+16}^{C}$	n/v	82.9	81.8	89	94.4	45.4	85.7	74.7	76.6	74.6	88.3	83.9	56.8	49.1	67	96.6	100	96	83	17	75	89	100
Ammonium	mg/L	n/v	n/v	n/v	4.03	5.38	5.52	5.57	0.29	0.26	0.71	1.64	3.1	5.27	5.08	1.72	0.54	0.44	0.01	0.07	0.12	3.1	0.1	1.82	2.03	0.98
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	35	34	37	56	21	36	31	54	44	40	39	**140**^{B}	29	29	48	49	50	41	**350**^{B}	89	55	70
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$_{s9}^{C}$	n/v	**3**^{B}	**5**^{B}	7	-	**5**^{B}	**2**^{B}	**5**^{B}	8	**4**^{B}	9	6	7	**3**^{B}	6	7	7	7	**0.1**^{B}	14	7	12	7
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	367	331	365	418	180	357	329	401	340	389	351	558	238	287	433	490	497	340	1,097	477	392	523
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	8	8	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	80	85	97	64	127	127	111	94	106	93	79	78	88	130	156	158	98	33	108	108	152
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.78	0.45	0.83	1.45	0.34	2.32	1.57	1.01	0.74	0.46	0.62	0.9	0.42	0.6	3.13	2.5	2.23	0.82	0.45	1.33	1.43	2.78
Nitrite	mg/L	0.20_{n1} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	6.5-9.0^{B}	6.5-8.5^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	6.5-9.0^{B}	6.5-8.5^{C}	n/v	7.2	7.2	7.4	7.4	7.4	7.3	7.3	7.2	7.3	7.3	7.2	7.1	7.2	7.3	7.3	7.6	7.5	7.3	7.3	7.3	7.6	7.4
Phosphorus, Total	mg/L	n/v	0.030_{s4} ^{E}	n/v	**0.41**^{E}	**0.45**^{E}	**0.34**^{E}	**0.28**^{E}	**0.2**^{E}	**0.26**^{E}	**0.15**^{E}	**0.18**^{E}	**0.3**^{E}	**0.24**^{E}	**0.34**^{E}	**0.3**^{E}	**0.15**^{E}	**0.19**^{E}	**0.3**^{E}	**0.19**^{E}	**0.09**^{E}	**0.13**^{E}	**0.08**^{E}	**0.34**^{E}	**0.17**^{E}	**0.3**^{E}
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.25	0.28	0.2	0.19	0.03	0.15	0.08	0.09	0.17	0.18	0.22	0.08	0.05	0.07	0.11	0.12	0.06	0.08	0.01	0.05	0.08	0.22
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	10	15	15	8	65	25	5	6	10	7	10	25	9	25	10	8	2	6	35	65	10	9
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	4	4	4	4	3	-	-	-	4	4	4	8	3	3	8	8	5	4	4	8	8	8
Sulfate	mg/L	n/v	n/v	128-429$^{F}_{s2}$	32	20.1	25	23.8	13.7	29.8	33.7	32	24.6	39.9	28	15.2	21.6	22.9	38.4	5.3	62	28	13	25	22	47
BC MECC Sulfate Guideline (s2)					309	309	309	309	218	309	309	309	309	309	309	309	309	309	309	309	309	309	218	309	309	309
Temperature, Lab	deg C	n/v	n/v	n/v	1	1	1	0.1	3	1.3	3	1	1	1	1	0.1	0.3	8	18	22	1.2	1	1	1	7	19
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	5.7	6.8	7.1	7	1.35	1.16	1.6	2.92	3.9	6	6.1	2.1	1.51	1.35	1.2	1.11	1.06	4.3	0.49	3.39	2.96	2.07
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	10	11	9.8	6	71	8	5.1	6.1	6.5	4.3	7.4	22	7.9	21	5.1	1.2	2.2	5.5	58	40	8.3	7.6
Metals																										
Aluminum	µg/L	$5/10^{0VAR1B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	$1,100^{s3C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	11	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	11	1100	1100	1100
Cadmium	µg/L	2.1_{STB} $^{A\ 0.16LTGB}$ 0.16_{LTG} ^{B}	0.2^{C} 0.5_{s12} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	µg/L	2.1_{STB} $^{A\ 0.16LTGB}$	0.2^{C} $0._{5s12E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					2.12	1.67	1.78	2.03	1.33	2.68	2.68	2.33	1.97	2.23	1.95	1.65	1.63	1.84	2.74	3.3	3.34	2.06	0.68	2.27	2.27	3.21
CWQG Cadmium Guideline (LTG)					0.16	0.13	0.14	0.15	0.11	0.19	0.19	0.17	0.15	0.17	0.15	0.13	0.13	0.14	0.2	0.23	0.23	0.16	0.06	0.17	0.17	0.22
PWQO Cadmium Guideline					0.5	0.1	0.1	0.1	0.1	0.5	0.5	0.5	0.1	0.5	0.1	0.1	0.1	0.1	0.5	0.5	0.5	0.1	0.1	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	$2.3^{\#B}$	$5^{C\ 5s13E}$	n/v	**35**^{BCE}	**46**^{BCE}	**31**^{BCE}	**26**^{BCE}	**19**^{BCE}	**13**^{BCE}	**12**^{BCE}	**15**^{BCE}	**19**^{BCE}	**16**^{BCE}	**19**^{BCE}	**19**^{BCE}	**11**^{BCE}	**9.9**^{BCE}	**<6.2**	**8.3**^{BCE}	**9.6**^{BCE}	**15**^{BCE}	**17**^{BCE}	**29**^{BCE}	**8.2**^{BCE}	**17**^{BCE}
CCME Copper Guideline					2.4	2	2.1	2.3	2	2.9	2.9	2.6	2.2	2.5	2.2	2	2	2.1	3	3.5	3.5	2.3	2	2.5	2.5	3.4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	**1,400**^{BC}	**1,600**^{BC}	**970**^{BC}	**780**^{BC}	**2,600**^{BC}	**900**^{BC}	**570**^{BC}	**790**^{BC}	**950**^{BC}	**1,100**^{BC}	**1,200**^{BC}	**2,200**^{BC}	**770**^{BC}	**1,500**^{BC}	**1,100**^{BC}	**490**^{BC}	**440**^{BC}	**620**^{BC}	**2,700**^{BC}	**2,300**^{BC}	**920**^{BC}	**860**^{BC}
Lead	µg/L	$3^{\#B}$	20_{s14} $^{C\ 5s15E}$	n/v	**<4.9**	<2	**<4**	<2.5	**50**^{BCE}	<2.5	<2.3	<2	**<3**	<3	<2	**<6**	<2	**<5**	**<12**	<2	<2	<2	**30**^{BCE}	**<5**	<2	<4
CCME Lead Guideline					3.2	2.4	2.6	3.1	1.8	4.3	4.3	3.6	2.9	3.4	2.9	2.4	2.3	2.7	4.4	5.6	5.7	3.1	1	3.5	3.5	5.4
PWQO Lead Guideline (s14)					25	25	25	25	20	25	20	20	20	25	25	20	20	20	25	25	25	25	5	20	25	25
PWQO Lead Guideline (s15)					5	3	5	5	3	5	5	5	5	5	5	3	3	5	5	5	5	5	3	5	5	5
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$6,656_{EO3}$ $^{A\ 530EQ4B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					6714.8	5472.1	5771.3	6480.8	4498.5	8210.7	8210.7	7295.2	6304.5	7005.8	6245.5	5412	5351.8	5949.7	8380.8	9835.7	9946.3	6539.4	2514.8	7121.8	7121.8	9613.9
CCME Manganese Guideline (EQ4)					610	560	560	560	490	660	660	610	560	610	560	590	560	560	660	600	600	560	380	610	530	700
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	95^{**B}	25^{C}	n/v	<1.7	<3.1	6	<2.3	<4	<2.6	<2.8	<1.7	<2.4	<3	<5	<4	<1.5	<1	<6	<2	<3	<2	9	<3	<2	<2
CCME Nickel Guideline					96.3	80.7	84.5	93.4	68.1	114.6	114.6	103.5	91.2	99.9	90.4	79.9	79.1	86.7	116.7	134	135.3	94.1	25	101.3	101.3	131.4
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	128_{EQ1} $^{A\ 47EQ2B}$	$30^{C\ 20E}$	n/v	**93**^{BCE}	**54**^{BCE}	**66**^{BCE}	**72**^{BCE}	**46**^{BCE}	**32**^{BCE}	**42**^{BCE}	**41**^{BCE}	**40**^{BCE}	**48**^{BCE}	**69**^{BCE}	**66**^{BCE}	**24**^{BE}	**32**^{BCE}	**32**^{BCE}	**49**^{BCE}	**39**^{BCE}	**27**^{BE}	**61**^{BCE}	**80**^{BCE}	10	**65**^{BCE}
CCME Zinc Guideline (EQ1)					66.7	54.9	57.8	64.5	45.6	80.7	80.7	72.2	62.8	69.5	62.3	54.4	53.8	59.5	82.3	95.8	96.8	65.1	26.3	70.5	70.5	93.8
CCME Zinc Guideline (EQ2)					14.1	11.3	10.2	11.6	7.8	16.2	16.2	15.5	12.2	13.6	13.1	12.1	11.1	11.4	16.5	15.4	16.9	12.7	4.5	13.9	10.9	17.7

See notes on last page

Table
Summary of Surface Water Analytical Data - 18771000602
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					18771000602															
Sample Date					18-Jul-94	21-Aug-94	11-Sep-94	10-Oct-94	26-Nov-94	24-Jan-95	26-Feb-95	5-Apr-95	2-Jun-95	21-Jun-95	23-Jul-95	26-Sep-95	28-Oct-95	29-Nov-95	30-Jan-96	27-Feb-96	29-Apr-03
Sample ID					18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602	18771000602
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02	HIST_187710006 02
General Chemistry																					
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\pm 16}^{C}$	n/v	94	86	110	77	79	85	86	72	57	101.8	110	100	84	76	170	72	23.1
Ammonium	mg/L	n/v	n/v	n/v	0.16	0.35	0.05	0.4	1.03	3.5	3.93	0.87	0.17	0.12	0.24	0.1	0.42	1.9	5.9	2.3	0.025
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	72	53	67	32	45	**440**^{B}	64	54	26	65	70	74.5	42	43.8	**390**^{B}	43	1.3
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$_{s9}^{C}$	n/v	10	6.6	**5**^{B}	6	-	8	9	-	9	9	8	8	8	9	7	8	12.2
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	502	439	581	302	379	771	456	360,000	224,000	519,000	527,000	661,000	392,000	419,000	1,300,000	319,000	92,000
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	3	8	-	-	-	-	-	-	95
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	141	135	170	105	120	105	107	110	81	160	190	190	130	120	300	-	37.2
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	2.26	1.97	2.26	1.77	2.24	1.4	1.9	0.86	0.58	3.35	2.7	3.45	2.99	2.63	5	0.47	0.159
Nitrite	mg/L	0.20_{n1} ^{B}	n/v	n/v	-	-	-	-	-	-	-	0.04	0.09	**1.98**^{B}	0.07	0.04	0.09	**0.3**^{B}	0.02	0.02	0.008
pH, Field	S.U.	6.5-9.0^{B}	6.5-8.5^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.98
pH, lab	S.U.	6.5-9.0^{B}	6.5-8.5^{C}	n/v	7.6	7.4	7.5	7.4	7.6	7.4	7.4	7.5	7.4	7.43	7.4	7.4	7.4	7.1	7.4	7.3	7.21
Phosphorus, Total	mg/L	n/v	0.030_{s4} ^{E}	n/v	**0.22**^{E}	**0.19**^{E}	**0.12**^{E}	**0.14**^{E}	**0.15**^{E}	**0.24**^{E}	-	**0.12**^{E}	**0.13**^{E}	**0.23**^{E}	**13,281**^{E}	**0.12**^{E}	**0.11**^{E}	**0.15**^{E}	**3.71**^{E}	-	0.013
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.14	0.15	0.09	0.11	0.07	0.18	0.14	0.05	0.05	0.17	0.11	0.08	0.06	0.05	0.22	0.06	<0.0007
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	10	3	1	3	15	9	9	10	9.9	7.9	16	3.9	8.4	22	383	12	5.2
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60
Stream Condition	none	n/v	n/v	n/v	7	5	-	5	-	4	-	-	-	-	8	75	3	4	4	4	-
Sulfate	mg/L	n/v	n/v	128-429$^{F}_{s2}$	47	54	71	29	39	32	35.4	26.8	20.4	47.64	86.9	98	36	51	83.5	24.5	-
BC MECC Sulfate Guideline (s2)					309	309	309	309	309	309	309	309	309	309	429	429	309	309	s2	309	218
Temperature, Lab	deg C	n/v	n/v	n/v	24	19	15	9	-	1	10	-	12	22	23	11	7	10	1	1	8
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	1.46	1.25	1.05	1.22	2.09	4.78	-	1.81	0.93	1.07	42,658	0.99	13,909	3.15	13.5	-	0.42
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65
Turbidity, Lab	NTU	n/v	n/v	n/v	5.5	5.5	1.1	3.7	7	7.3	7.5	10	12	3.8	131	4.3	12	14	97	7.6	3.73
Metals																					
Aluminum	µg/L	$5/10^{0VAR1B}$	n/v	n/v	-	-	-	-	-	-	-	**560**^{B}	**660**^{B}	**130**^{B}	**1,100**^{B}	**180**^{B}	**530**^{B}	**740**^{B}	**3,500**^{B}	**330**^{B}	**158**^{B}
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42.5
Beryllium	µg/L	n/v	$1,100^{s3C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0123
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	11
Cadmium	µg/L	2.1_{STB} ^{A} 0.16_{LTG} ^{B}	0.2^{C} 0.5_{s12} ^{E}	n/v	-	-	-	-	-	-	-	***<0.2***	***<0.39***	***<0.2***	***<0.48***	***<0.45***	***<0.35***	***<0.8***	***<1.2***	***<0.4***	0.0874
Cadmium	µg/L	2.1_{STB} $^{A\ 0.16LTGB}$	0.2^{C} $0.^{5s12E}$	n/v	-	-	-	-	-	-	-	**<0.2**	**<0.39**	<0.2	**<0.48**	**<0.45**	**<0.35**	**<0.8**	**<1.2**	**<0.4**	**0.0874**^{B}
CWQG Cadmium Guideline (STB)					2.98	2.85	3.6	2.21	2.53	2.21	2.25	2.31	1.69	3.38	4.03	4.03	2.74	2.53	6.41	2.12	0.77
CWQG Cadmium Guideline (LTG)					0.21	0.2	0.25	0.17	0.18	0.17	0.17	0.17	0.13	0.23	0.27	0.27	0.2	0.18	0.37	0.16	0.07
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.1
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	33,000	24,000	48,000	56,000	56,000	38,000	36,000	92,000	-	10,100
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	2.9	1.3	<0.2	2.2	1.3	3.2	6.2	14	<0.8	0.154
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	<0.5	<0.76	<0.7	***<1.5***	***<1.1***	<0.61	<0.5	***<6***	<0.5	**1.3**^{E}
Copper	µg/L	$2.3^{^{*}B}$	$5^{C\ 5s13E}$	n/v	**7.9**^{BCE}	**7.5**^{BCE}	**10**^{BCE}	**6.8**^{BCE}	**14**^{BCE}	**26**^{BCE}	**30**^{BCE}	**7.2**^{BCE}	**9.2**^{BCE}	**7.4**^{BCE}	**21**^{BCE}	**8.3**^{BCE}	**9.2**^{BCE}	**18**^{BCE}	**94**^{BCE}	**23**^{BCE}	1.8
CCME Copper Guideline					3.2	3.1	3.7	2.5	2.8	2.5	2.5	2.6	2	3.5	4	4	3	2.8	4	2.4	2
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	**540**^{BC}	270	**330**^{BC}	**410**^{BC}	**805**^{BC}	**1,000**^{BC}	**960**^{BC}	**810**^{BC}	**950**^{BC}	**450**^{BC}	**1,900**^{BC}	**310**^{BC}	**570**^{BC}	**1,000**^{BC}	**6,500**^{BC}	**610**^{BC}	194
Lead	µg/L	$3^{\#B}$	20_{s14} $^{C\ 5s15E}$	n/v	<2	<4	<2	**<4**	<3	**<12**	**<5**	<2	**<3.7**	<3.5	**<8.5**	<3.2	**<5.6**	<4	**<36**	<2	-5.37
CCME Lead Guideline					4.9	4.7	6.3	3.4	4	3.4	3.5	3.6	2.4	5.8	7	7	4.4	4	7	3.2	1
PWQO Lead Guideline (s14)					25	25	25	20	20	25	25	20	20	25	25	25	25	20	25	20	10
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	3
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	6,900	5,200	9,500	13,000	13,000	7,800	7,500	17,000	-	2,940
Manganese	µg/L	$6,656_{EO3}$ $^{A\ 530EQ4B}$	n/v	n/v	-	-	-	-	-	-	-	110	77	120	270	77	47	140	**1,300**^{B}	210	30.6
CCME Manganese Guideline (EQ3)					9000.3	8663.1	10606.6	6947.8	7812	6947.8	7063.8	7237.4	5532.1	10056.8	11694.7	11694.7	8380.8	7812	14881	6714.8	2793.7
CCME Manganese Guideline (EQ4)					570	660	600	610	530	610	610	530	560	700	730	730	660	650	860	610	380
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.02
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	**66**^{E}	**57**^{E}	**270**^{BE}	**410**^{BE}	**570**^{BE}	**130**^{BE}	**250**^{BE}	**170**^{BE}	**66**^{E}	27
Nickel	µg/L	$95^{^{*}B}$	25^{C}	n/v	<3	<3	<1	<2	<3	<6	<4	<2.3	<2.1	<2.7	<4.2	<3.3	<2.4	<4	<15	<3	1.11
CCME Nickel Guideline					124.1	120.1	143.1	99.2	109.8	99.2	100.6	102.8	81.4	136.6	150	150	116.7	109.8	150	96.3	25
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,410
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,100
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	258
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.54
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.466
Zinc	µg/L	128_{EO1} $^{A\ 47EQ2B}$	$30^{C\ 20E}$	n/v	**27**^{BE}	**53**^{BCE}	**41**^{BCE}	**29**^{BE}	**76**^{BCE}	**140**^{ABCE}	**170**^{ABCE}	**30**^{BE}	**23**^{BE}	**55**^{BCE}	**110**^{BCE}	**84**^{BCE}	**51**^{BCE}	**100**^{BCE}	**280**^{ABCE}	**44**^{BCE}	0.973
CCME Zinc Guideline (EQ1)					88.1	85	102.9	68.9	77	68.9	70	71.6	55.5	97.9	112.9	112.9	82.3	77	142.2	66.7	29
CCME Zinc Guideline (EQ2)					14	15.8	18.1	12.5	12	12.5	12.7	12	9.7	18.1	21.8	21.8	15.2	18	33.7	13	5.4

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006400302
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																								
Sample Date					25-Apr-68	26-Aug-68	3-Nov-68	8-Dec-68	17-Feb-69	22-May-69	24-Jun-69	3-Aug-69	29-Aug-69	16-Aug-71	11-Sep-71	16-Oct-71	11-Dec-71	15-Jan-72	12-Feb-72	11-Mar-72	15-Apr-72	15-May-72	17-Jun-72	15-Jul-72	19-Aug-72
Sample ID					19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{x16}^{C}$	n/v	-	95	107	108	123	88	91	104	111	-	-	-	-	-	-	-	-	-	-	-
Ammonium	mg/L	n/v	n/v	n/v	0.44	0.09	0.12	0.19	0.76	0.6	0.24	0.06	0.01	0.05	0.05	0.01	0.05	0.3	0.52	1.4	1.2	1.7	0.17	0.04	0.02
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	3.2	1.3	1.3	0.8	1.2	5	1.4	2.6	1.8	0.4	3	0.4	1.8	1	1.2	3	0.8	1.2	2.5	2	2
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	<30	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	10	12	14	16	18	15	14	15	15	-	-	17	18	-	-	-	-	20	16	-	16
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$_{s9}^{C}$	n/v	8	-	**4.4**^{B}	8.6	6.5	10	**4**^{B}	8	**4**^{B}	11	7	10	14	11	8	**3**^{B}	**3**^{B}	6	12	10	10
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	344	541	644	684	705	553	546	559	614	589	585	644	627	665	667	722	731	631	536	520	552
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	252	308	324	348	258	258	280	290	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.37	0.05	0.15	0.17	0.25	0.16	0.28	0.25	0.12	0.07	0.01	0.01	0.09	0.11	0.13	0.11	0.06	0.25	0.06	0.01	0.01
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{nf} ^{B}	n/v	n/v	0.02	0.01	0.01	0.02	0.01	0.04	0.02	0.01	0.08	0.03	0.002	0.004	0.008	0.01	0.01	0.01	0.01	0.02	0.01	0.006	0.006
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	6.8	8.2	7.1	7.8	7.7	8.5	7.8	8	7.7	8	7.5	8	-	7.7	7.4	7.2	7.2	7.1	7.6	8.4	8.4
Phosphorus, Total	mg/L	n/v	0.030_{ld4} ^{E}	n/v	**0.11**^{E}	**0.12**^{E}	**0.07**^{E}	**0.06**^{E}	**0.23**^{E}	**0.19**^{E}	**0.09**^{E}	**0.14**^{E}	**0.17**^{E}	-	-	**0.13**^{E}	**0.05**^{E}	**0.07**^{E}	**0.14**^{E}	**0.8**^{E}	**0.25**^{E}	**0.15**^{E}	**0.07**^{E}	0.02	**0.27**^{E}
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.04	0.04	0.04	0.03	0.16	0.01	0.05	0.08	0.14	-	-	0.05	0.02	0.06	0.09	0.29	0.16	0.06	0.06	0.07	0.26
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	9	6	6	5	2	15	5	5	5	5	5	5	10	5	5	140	5	5	12	30	5
Residue-Filterable	mg/L	n/v	n/v	n/v	243	360	456	485	468	315	405	345	425	425	295	515	460	485	505	560	545	485	448	380	455
Stream Condition	none	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}$ $_{s2}$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC MECC Sulfate Guideline (s2)					s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2
Temperature, Lab	deg C	n/v	n/v	n/v	5.5	17	3	0	0	10	16	23	25	21	19	8	0	0	0	0	0	7	18	20	20
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	1	0.7	0.64	0.8	1.7	3	0.89	0.59	0.73	0.68	0.44	0.75	0.67	0.84	1.2	3.1	3.7	2.6	1	0.42	0.63
Total Residue	mg/L	n/v	n/v	n/v	252	366	462	490	470	330	410	350	430	430	300	520	470	490	510	700	550	490	460	410	460
Turbidity, Lab	NTU	n/v	n/v	n/v	17	5.5	2.5	1.5	2.9	3	1	3	4	-	10	6	3	3	1.5	25	4	4	12	25	3
Metals																									
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	**20**^{BE}	***<10***	***<10***	-	**30**^{BE}	-	-	**20**^{BE}	-	-	-	-	-	-	-	-	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	$11/1{,}100_{s3}$ ^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Cadmium	µg/L	5.8_{STB} ^{A} 0.36_{LTG} ^{B}	0.2^{C} 0.5_{s12} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					5.82	5.37	6.58	6.93	7.45	5.5	5.5	5.97	6.19	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82
CWQG Cadmium Guideline (LTG)					0.36	0.34	0.37	0.37	0.37	0.35	0.35	0.37	0.37	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	4^{+B}	5^{C} 5_{s13} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Copper Guideline					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	-	200	**320**^{BC}	160	200	**800**^{BC}	**350**^{BC}	100	300	-	-	-	-	-	-	-	-	-	-	-	-
Lead	µg/L	$7\#^{B}$	25_{s14} ^{C} 5_{s15} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Lead Guideline					7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PWQO Lead Guideline (s14)					25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$14{,}881_{EQ3}$ ^{A} 430_{EQ4} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881
CCME Manganese Guideline (EQ4)					890	430	940	610	610	270	560	430	560	430	640	430	560	560	760	760	760	830	640	270	270
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	150^{**B}	25^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Nickel Guideline					150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	302_{EQ1} ^{A} 76_{EQ2} ^{B}	30^{C} 20^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	**40**^{CE}	-	-	-	-	-	-	-	-	-
CCME Zinc Guideline (EQ1)					142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2
CCME Zinc Guideline (EQ2)					184.5	54.7	162	96.1	111.5	43.8	77.4	71.1	93.8	69.4	104.3	69.4	75.3	88.6	113.2	133.2	133.2	144.5	96.1	50.1	50.1

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006400302
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																									
Sample Date					16-Sep-72	14-Oct-72	26-Nov-72	19-Dec-72	28-Jan-73	18-Feb-73	18-Mar-73	15-Apr-73	20-May-73	17-Jun-73	22-Jul-73	19-Aug-73	23-Sep-73	21-Oct-73	25-Nov-73	27-Dec-73	27-Jan-74	17-Feb-74	24-Mar-74	28-Apr-74	30-Jun-74
Sample ID					19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02
General Chemistry																									
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{x16}^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ammonium	mg/L	n/v	n/v	n/v	0.01	0.03	0.01	0.11	0.31	0.5	1.3	0.27	0.59	0.2	0.16	0.09	0.03	0.01	0.04	0.18	0.64	1.1	0.26	0.6	0.02
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	1.4	1.6	1.8	1.2	0.4	8.5	5	3	10	2.5	2	2	1.2	1.8	0.8	1.8	1.2	1.2	1.4	2	1.2
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	<30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	16	-	19	19	19	23	25	10	18	17	16	18	18	19	20	13	30	25	27	16	34
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$_{s9}^{C}$	n/v	9	11	15	12	8	8	7	10	19	9	11	**4**^{B}	**2**^{B}	11	**5**^{B}	9	**3**^{B}	**3**^{B}	**4**^{B}	**2**^{B}	8
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	603	-	640	680	683	721	559	255	440	500	570	-	610	660	670	600	790	780	800	396	620
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.01	0.02	0.02	0.05	0.07	0.11	0.48	0.05	0.01	0.06	0.44	0.09	0.04	0.07	0.22	0.04	0.2	0.18	0.67	0.65	0.33
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{nT} ^{B}	n/v	n/v	0.003	0.004	0.006	0.004	0.008	0.009	0.03	0.01	0.006	0.01	0.006	0.06	0.01	0.01	0.01	0.03	0.01	0.01	0.05	0.02	0.07
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	8.3	8.1	8.4	7.4	7.6	-	7.5	7.5	7.5	8.1	7.9	7.3	8.3	7.9	-	6.8	7.1	7.3	7.7	7.1	-
Phosphorus, Total	mg/L	n/v	0.030_{ft4} ^{E}	n/v	-	-	**0.19**^{E}	**0.18**^{E}	**0.21**^{E}	**0.21**^{E}	**0.25**^{E}	**0.36**^{E}	**0.65**^{E}	**0.23**^{E}	**0.62**^{E}	**0.47**^{E}	**0.36**^{E}	**0.34**^{E}	**0.21**^{E}	**0.2**^{E}	**0.45**^{E}	**0.38**^{E}	**0.32**^{E}	**0.99**^{E}	**0.18**^{E}
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	-	-	0.12	0.14	0.19	0.19	0.17	0.09	0.08	0.17	0.31	0.29	0.33	0.26	0.18	0.12	0.3	0.36	0.28	0.05	0.07
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	5	20	-	5	5	5	5	20	130	10	15	5	0	80	0	20	5	0	10	10	10
Residue-Filterable	mg/L	n/v	n/v	n/v	495	370	-	485	445	485	395	165	320	380	415	-	510	320	425	460	515	500	570	257	470
Stream Condition	none	n/v	n/v	n/v	-	-	5	4	4	4	6	6	95	59	859	589	975	795	4	4	4	4	4	3	75
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}$ $_{s2}$	-	-	204	184	184	206	144	43	96	140	180	180	180	190	-	220	200	230	220	99	170
BC MECC Sulfate Guideline (s2)					s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2
Temperature, Lab	deg C	n/v	n/v	n/v	13	5	2	0	0	0	0	3	14	18	22	21	10	8	0	0	0	0	0	2	18
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.76	0.77	0.8	0.74	1	1.1	2.4	1.5	3.1	0.87	0.8	0.62	0.76	0.96	0.68	0.72	1.4	1.8	0.89	1.4	0.75
Total Residue	mg/L	n/v	n/v	n/v	500	390	460	490	450	490	400	185	450	390	430	-	510	400	425	480	520	500	580	267	480
Turbidity, Lab	NTU	n/v	n/v	n/v	8	13	1.5	2	1.8	1.7	7.1	14	5.2	2.1	7.2	1.4	1.4	10	0.6	8.1	2.1	1.4	10.3	4.4	14
Metals																									
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	-	***<10***	**50**^{BE}	***<10***	**30**^{BE}	**20**^{BE}	***<70***	***<10***	***<10***	***<10***	**20**^{BE}	***<10***	**20**^{BE}	-	**20**^{BE}	**20**^{BE}	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	$11/1,100_{s3}$ ^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Cadmium	µg/L	5.8_{STB} ^{A} 0.36_{LTG} ^{B}	0.2^{C} 0.5_{s12} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82
CWQG Cadmium Guideline (LTG)					0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	<10	-	<10	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	4^{*B}	5^{C} 5_{s13} ^{E}	n/v	-	-	**<50**	**<30**	**<50**	**<50**	**350**^{BCE}	**<50**	**<50**	**<30**	**<30**	**<50**	**<50**	**<30**	-	**<30**	**20**^{BCE}	**20**^{BCE}	**<30**	**140**^{BCE}	-
CCME Copper Guideline					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	-	-	150	100	150	150	-	**1,100**^{BC}	**4,200**^{BC}	300	-	50	100	**900**^{BC}	-	**900**^{BC}	250	150	300	**500**^{BC}	**1,800**^{BC}
Lead	µg/L	$7\#^{B}$	25_{s14} ^{C} 5_{s15} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**<30**	-	-	-	-	-	-
CCME Lead Guideline					7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PWQO Lead Guideline (s14)					25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$14,881_{EQ3}$ ^{A} 430_{EQ4} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881
CCME Manganese Guideline (EQ4)					430	430	270	760	640	560	640	640	640	430	560	760	430	560	560	890	830	760	560	830	560
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	150^{**B}	25^{C}	n/v	-	-	<70	**40**^{C}	**50**^{C}	<70	<70	<70	<70	<40	<40	<70	**90**^{C}	<40	-	<40	**40**^{C}	**80**^{C}	**50**^{C}	**70**^{C}	-
CCME Nickel Guideline					150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	302_{EQ1} ^{A} 76_{EQ2} ^{B}	30^{C} 20^{E}	n/v	<10	-	<10	<10	<10	<10	**170**^{BCE}	20	20	<30	<30	<50	<50	<30	-	**250**^{BCE}	**40**^{CE}	**50**^{CE}	**30**^{E}	**30**^{E}	<30
CCME Zinc Guideline (EQ1)					142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2
CCME Zinc Guideline (EQ2)					54.3	64	50.1	113.2	96.1	75.3	104.3	104.3	104.3	64	75.3	122.8	54.3	75.3	75.3	184.5	144.5	122.8	88.6	144.5	75.3

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006400302
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																								
Sample Date					28-Jul-74	25-Aug-74	22-Sep-74	3-Nov-74	1-Dec-74	29-Dec-74	26-Jan-75	16-Feb-75	23-Mar-75	27-Apr-75	25-May-75	22-Jun-75	27-Jul-75	31-Aug-75	28-Sep-75	26-Oct-75	30-Nov-75	28-Dec-75	25-Jan-76	22-Feb-76	21-Mar-76
Sample ID					19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02	HIST_190064003 02
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\times 16}^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ammonium	mg/L	n/v	n/v	n/v	0.01	0.02	0.02	0.02	0.05	0.12	0.09	0.13	0.07	0.23	0.23	0.09	0.01	0.12	0.01	0.01	0.01	0.03	-	0.18	0.19
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	0.6	1.4	1	2	2.5	1	2	0.8	1.6	1.8	1.4	1.2	0.6	2.2	0.8	1.2	2.6	1.2	-	1.4	1.8
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	6	5	22	21	15	24	23	33	28	14	33	18	18	28	1	22	18	-	-	26.2	0.7
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$_{s9}^{C}$	n/v	7	9	**5**^{B}	**4**^{B}	11	**4**^{B}	**3**^{B}	**5**^{B}	7	9	10	9	9	**5**^{B}	6	7	13	14	12	7	7
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	490	690	640	660	485	680	740	780	750	250	580	520	560	560	600	660	530	750	660	650	760
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.01	0.01	0.01	0.06	0.04	0.18	0.26	0.31	0.47	0.45	0.31	0.01	0.06	-	0.01	0.01	0.09	0.01	-	0.11	0.2
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{nr} ^{B}	n/v	n/v	0.03	0.004	0.003	0.009	0.008	0.01	0.007	0.02	0.009	0.01	0.03	0.06	0.07	0.003	0.002	0.004	0.004	0.002	-	0.01	0.02
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.2	7.4	7.6	6.8	7	7.8	7.4	7.5	-	7.4	7.8	-	8.2	7.6	7.7	7.2	8	8.1	7.9	7.8	7.8
Phosphorus, Total	mg/L	n/v	0.030_{ol4} ^{E}	n/v	**0.09**^{E}	**0.08**^{E}	**0.07**^{E}	**0.04**^{E}	**0.08**^{E}	0.03	**0.09**^{E}	0.03	**0.05**^{E}	**0.06**^{E}	0.02	**0.04**^{E}	**0.12**^{E}	**0.4**^{E}	**0.07**^{E}	**0.09**^{E}	**0.04**^{E}	**0.04**^{E}	-	**0.04**^{E}	**0.05**^{E}
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.03	0.03	0.03	0.003	0.01	0.009	0.01	0.01	0.01	0.02	0.004	0.007	0.07	0.27	0.03	0.01	0.004	0.002	-	0.01	0.01
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	10	10	15	15	20	15	15	4	12	10	7	9	7	8	4	34	14	5	-	9.2	8
Residue-Filterable	mg/L	n/v	n/v	n/v	330	500	215	255	370	495	575	596	598	163	243	441	397	421	448	523	-	538	-	-	-
Stream Condition	none	n/v	n/v	n/v	8	75	75	8	4	4	4	4	4	3	9	9	57	79	759	9	4	4	4	4	4
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}$ $_{s2}$	190	310	210	203	175	240	200	157	-	46	105	-	175	125	190	220	165	-	260	-	-
BC MECC Sulfate Guideline (s2)					s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2
Temperature, Lab	deg C	n/v	n/v	n/v	19	18	10	4	0	0	0	0	0	3	20	21	19	16	11	8	0	0	0	0	0
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.66	0.49	0.58	0.72	0.66	0.81	0.3	0.83	0.68	0.8	0.76	0.76	0.59	1.2	0.51	0.76	0.56	0.72	-	0.8	0.73
Total Residue	mg/L	n/v	n/v	n/v	340	510	230	270	390	510	590	600	610	173	250	450	404	429	452	557	-	543	-	575	566
Turbidity, Lab	NTU	n/v	n/v	n/v	3.3	2.2	2	2.6	7.5	1.1	0.92	3.1	2.5	10	2.4	4	2.5	1.8	1.9	26	4.4	1.4	-	1.9	3.8
Metals																									
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	-	**10**^{BE}	***<10***	-	-	***<10***	***<10***	-	-	4	-	***<20***	***<10***	***<20***	***<10***	***<10***	-	4	5	**6**^{BE}
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	$11/1,100_{s3}$ ^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Cadmium	µg/L	5.8_{STB} ^{A} 0.36_{LTG} ^{B}	0.2^{C} 0.5_{s12} ^{E}	n/v	-	-	-	-	-	-	-	-	**<10**	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82
CWQG Cadmium Guideline (LTG)					0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	4^{+B}	5^{C} 5_{s13} ^{E}	n/v	**<30**	**<30**	**<10**	**40**^{BCE}	**40**^{BCE}	-	**70**^{BCE}	**<30**	**50**^{BCE}	-	**20**^{BCE}	-	**30**^{BCE}	**20**^{BCE}	**<30**	**60**^{BCE}	**20**^{BCE}	-	**30**^{BCE}	**30**^{BCE}	**<40**
CCME Copper Guideline					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	**500**^{BC}	250	200	200	**1,700**^{BC}	100	150	150	-	**800**^{BC}	<50	-	300	230	180	**1,300**^{BC}	**520**^{BC}	200	120	140	**700**^{BC}
Lead	µg/L	$7\#^{B}$	25_{s14} ^{C} 5_{s15} ^{E}	n/v	-	-	-	-	-	-	-	-	**40**^{BCE}	-	-	-	-	-	-	-	-	-	-	-	-
CCME Lead Guideline					7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PWQO Lead Guideline (s14)					25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$14,881_{EQ3}$ ^{A} 430_{EQ4} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	250	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881
CCME Manganese Guideline (EQ4)					760	760	640	890	830	560	760	640	560	760	560	560	430	640	560	760	430	430	560	560	560
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	150^{**B}	25^{C}	n/v	<40	<40	**30**^{C}	<40	**70**^{C}	-	<40	**60**^{C}	**50**^{C}	-	**50**^{C}	-	20	**30**^{C}	<20	20	20	-	**50**^{C}	<20	**30**^{C}
CCME Nickel Guideline					150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	302_{EQ1} ^{A} 76_{EQ2} ^{B}	30^{C} 20^{E}	n/v	**30**^{E}	**30**^{E}	**40**^{CE}	<30	**50**^{CE}	-	**30**^{E}	10	**30**^{E}	**30**^{E}	10	-	10	10	<30	20	10	-	20	<20	**40**^{CE}
CCME Zinc Guideline (EQ1)					142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2
CCME Zinc Guideline (EQ2)					133.2	113.2	96.1	184.5	156.8	81.7	113.2	104.3	75.3	113.2	81.7	75.3	59	96.1	88.6	133.2	69.4	64	75.3	81.7	81.7

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006400302
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location / Sample Date / Sample ID / Laboratory Work Order	Units	CCME	PWQO	BC MECC	25-Apr-76 19006400302 HIST_19006400302	24-May-76 19006400302 HIST_19006400302	30-Jun-76 19006400302 HIST_19006400302	27-Jul-76 19006400302 HIST_19006400302	29-Aug-76 19006400302 HIST_19006400302	30-Sep-76 19006400302 HIST_19006400302	31-Oct-76 19006400302 HIST_19006400302	28-Nov-76 19006400302 HIST_19006400302	28-Dec-76 19006400302 HIST_19006400302	30-Jan-77 19006400302 HIST_19006400302	4-Mar-77 19006400302 HIST_19006400302	30-Mar-77 19006400302 HIST_19006400302	24-Apr-77 19006400302 HIST_19006400302	30-May-77 19006400302 HIST_19006400302	26-Jun-77 19006400302 HIST_19006400302	24-Jul-77 19006400302 HIST_19006400302	21-Aug-77 19006400302 HIST_19006400302	25-Sep-77 19006400302 HIST_19006400302	20-Oct-77 19006400302 HIST_19006400302	27-Nov-77 19006400302 HIST_19006400302	28-Dec-77 19006400302 HIST_19006400302
General Chemistry																										
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\times 16}{}^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ammonium	mg/L	n/v	n/v	n/v	0.05	0.29	-	0.09	0.13	0.03	0.002	0.03	0.07	0.09	0.04	0.03	0.1	0.07	0.16	0.14	0.08	0.06	0.02	0.1	0.13
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	1.4	1.6	-	1	2.8	1.6	2.1	2.5	1.8	0.6	2	1	1	3	0.6	0.8	-	1	1.2	4.6	2
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	5.3	19	-	25	34.5	25.5	-	30	42.5	31.5	58	41.5	6.6	27.5	26	31.5	31	40	32	30.5	33.5
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}{}^{B}$	$_{s9}{}^{C}$	n/v	9	12	6	**5**^{B}	**4**^{B}	9	12	13	**5**^{B}	6	**4**^{B}	6	9	**4**^{B}	6	**3**^{B}	**4**^{B}	**3**^{B}	**5**^{B}	**4**^{B}	10
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	85	500	-	550	600	630	700	770	810	800	900	740	145	610	630	690	660	730	725	725	770
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.04	0.31	-	0.005	0.02	0.005	0.005	0.005	0.04	0.05	0.19	0.3	0.04	0.32	0.02	0.005	0.005	0.005	0.004	0.03	0.04
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	$0.20_{nT}{}^{B}$	n/v	n/v	0.006	0.02	-	0.005	0.07	0.002	0.001	0.001	0.02	0.004	0.009	0.006	0.004	0.03	0.01	0.005	0.003	0.003	0.001	0.003	0.008
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.9	8.07	7.38	7.67	7.78	8.05	8.26	8.1	7.71	-	7.64	-	7.28	-	-	-	7.78	7.68	8.15	7.81	7.88
Phosphorus, Total	mg/L	n/v	$0.030_{fd}{}^{E}$	n/v	**0.04**^{E}	**0.04**^{E}	-	**0.26**^{E}	**0.21**^{E}	**0.08**^{E}	**0.07**^{E}	**0.06**^{E}	**0.16**^{E}	**0.11**^{E}	**0.27**^{E}	**0.09**^{E}	**0.04**^{E}	**0.07**^{E}	**0.11**^{E}	**0.17**^{E}	**0.25**^{E}	**0.14**^{E}	**0.08**^{E}	**0.17**^{E}	**0.08**^{E}
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.005	0.003	-	0.2	0.2	0.05	0.03	0.03	0.06	0.07	0.09	0.06	0.01	0.007	0.09	0.12	0.2	0.07	0.04	0.003	0.02
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	17	8.2	-	2.5	12	5.6	31	4.2	55	1.3	54	2.8	6.1	7.9	0.7	1.8	11	14	5	42	4.6
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	3	3	7	75	75	7	6	4	4	4	4	3	3	5	75	705	759	7	97	4	4
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}{}_{s2}$	9.5	150	110	115	165	180	24.5	220	-	252	**485**^{F}	195	21	183	185	-	177	250	225	211.5	-
BC MECC Sulfate Guideline (s2)					s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2
Temperature, Lab	deg C	n/v	n/v	n/v	1	7	22	18	15	8	1	0	0	0	0	2	6	18	18	20	14	12	6	0	0
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.28	0.93	-	0.8	0.65	0.6	0.57	0.49	0.88	0.53	0.84	0.63	0.41	0.9	0.63	0.72	0.72	0.78	0.57	1.65	0.86
Total Residue	mg/L	n/v	n/v	n/v	72	397	-	382	394	460	513	529	637	558	636	498	100	446	462	521	507	553	512	575	539
Turbidity, Lab	NTU	n/v	n/v	n/v	11	3.4	-	1.5	1.9	3	2.6	1.8	14	1.5	7.2	2.2	2.5	4.5	1	1.8	3.2	3.5	3.3	20	2.4
Metals																									
Aluminum	µg/L	$5/100_{VAR1}{}^{B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	4	5	**6**^{BE}	**10**^{BE}	**10**^{BE}	**10**^{BE}	**10**^{BE}	**10**^{BE}	**10**^{BE}	**10**^{BE}	**10**^{BE}	**7**^{BE}	3	**7**^{BE}	**10**^{BE}	-	**10**^{BE}	***<10***	-	**9**^{BE}	**7**^{BE}
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	$11/1,100_{s3}{}^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Cadmium	µg/L	$5.8_{STB}{}^{A}$ $0.36_{LTG}{}^{B}$	0.2^{C} $0.5_{s12}{}^{E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82
CWQG Cadmium Guideline (LTG)					0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	4^{*B}	5^{C} $5_{s13}{}^{E}$	n/v	**20**^{BCE}	**60**^{BCE}	**30**^{BCE}	**20**^{BCE}	**50**^{BCE}	**10**^{BCE}	**<10**	**20**^{BCE}	**20**^{BCE}	**10**^{BCE}	**30**^{BCE}	**10**^{BCE}	**20**^{BCE}	**60**^{BCE}	**20**^{BCE}	-	**<10**	**20**^{BCE}	**20**^{BCE}	**20**^{BCE}	**20**^{BCE}
CCME Copper Guideline					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	**570**^{BC}	**320**^{BC}	280	<50	**560**^{BC}	220	**690**^{BC}	170	**980**^{BC}	110	**7,500**^{BC}	100	220	**340**^{BC}	60	-	**340**^{BC}	**700**^{BC}	240	**1,040**^{BC}	**440**^{BC}
Lead	µg/L	$7\#^{B}$	$25_{s14}{}^{C}$ $5_{s15}{}^{E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Lead Guideline					7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PWQO Lead Guideline (s14)					25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$14,881_{EQ3}{}^{A}$ $430_{EQ4}{}^{B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	240	-	240	50	220	120	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881
CCME Manganese Guideline (EQ4)					560	430	760	640	560	430	430	430	560	560	640	560	760	560	560	560	560	640	430	560	560
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	150^{**B}	25^{C}	n/v	<20	**40**^{C}	**30**^{C}	<10	20	10	20	20	10	20	**40**^{C}	20	<10	**50**^{C}	<20	-	**30**^{C}	20	<20	**40**^{C}	<20
CCME Nickel Guideline					150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	$302_{EQ1}{}^{A}$ $76_{EQ2}{}^{B}$	30^{C} 20^{E}	n/v	<10	10	<10	<10	<10	<10	<10	20	-	<10	**80**^{CE}	20	10	**40**^{CE}	<10	-	**40**^{CE}	<10	<10	1	<10
CCME Zinc Guideline (EQ1)					142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2
CCME Zinc Guideline (EQ2)					75.3	65.5	115	90.8	83	66.6	56.1	64	87.9	75.3	93.1	75.3	124.8	75.3	75.3	75.3	83	90.1	61.4	81	76.5

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006400302
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																								
Sample Date					29-Jan-78	1-Mar-78	25-Mar-78	30-Apr-78	22-May-78	25-Jun-78	30-Jul-78	27-Aug-78	24-Sep-78	29-Oct-78	26-Nov-78	27-Dec-78	27-Jan-79	25-Feb-79	31-Mar-79	6-May-79	3-Jun-79	2-Jul-79	3-Aug-79	3-Sep-79	8-Oct-79
Sample ID					19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\times 16}{}^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ammonium	mg/L	n/v	n/v	n/v	-	0.14	0.01	0.2	0.004	0.14	0.06	0.14	0.06	0.07	0.03	-	0.1	0.08	0.02	0.08	0.25	0.11	0.58	0.03	0.02
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	0.8	0.5	1	1.4	1	1.4	1	0.2	1.6	1.8	-	0.4	1	0.4	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	-	35	35.5	13.5	22.5	21	20	20	21	22.5	28.5	-	37.5	33.5	26	3	24	19	20	20	21.5
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}{}^{B}$	$_{s9}{}^{C}$	n/v	6	6	**3**[B]	8	8	**4**[B]	9	**3**[B]	8	**5**[B]	**2**[B]	**4**[B]	**3**[B]	**2**[B]	**5**[B]	**2**[B]	**5**[B]	-	7	7	7
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	-	820	815	220	485	540	495	525	560	600	660	-	780	230	720	86	560	520	550	570	610
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	-	0.01	0.39	0.43	0.29	0.17	0.008	0.01	0.005	0.005	0.07	-	0.17	0.33	0.47	0.05	0.48	0.04	0.02	0.005	0.005
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	$0.20_{nit}{}^{B}$	n/v	n/v	-	0.01	0.004	0.01	**0.46**[B]	0.04	0.007	0.004	0.01	0.004	0.008	-	0.01	0.01	0.002	0.004	0.08	0.03	0.006	0.002	0.001
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total	mg/L	n/v	$0.030_{fd}{}^{E}$	n/v	-	**0.06**[E]	**0.06**[E]	**0.05**[E]	**0.04**[E]	**0.06**[E]	**0.16**[E]	**0.13**[E]	**0.1**[E]	**0.04**[E]	**0.05**[E]	-	0.03	0.03	0.03	0.03	**0.07**[E]	0.01	**0.2**[E]	**0.07**[E]	**0.04**[E]
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	-	0.04	0.04	0.02	0.01	0.01	0.08	0.09	0.05	0.01	0.006	-	0.01	0.01	0.01	0.01	0.007	0.003	0.18	0.02	0.01
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	-	3.5	2	2.1	4.6	7.3	6.4	3.6	21	7	4	-	8	3	0.6	5	26	9	9	6	2
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	603	143	348	396	354	436	413	438	458	-	549	150	488	56	382	393	374	394	407
Stream Condition	none	n/v	n/v	n/v	4	4	4	43	6	7	57	57	57	57	4	4	4	4	4	6	6	7	79	57	7
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}{}_{s2}$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC MECC Sulfate Guideline (s2)					s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2
Temperature, Lab	deg C	n/v	n/v	n/v	0	0	0	0	12	19	19	18	13	3	0	0	0	0	0	2	17	17	22	17	5
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	-	0.77	0.6	0.76	0.67	1.06	0.8	0.77	0.67	0.71	0.8	-	0.75	0.69	0.57	0.32	1.1	0.4	1.85	0.58	0.57
Total Residue	mg/L	n/v	n/v	n/v	-	601	605	145	353	403	360	440	434	445	462	-	557	153	489	61	408	402	383	400	409
Turbidity, Lab	NTU	n/v	n/v	n/v	-	3.2	1.4	4.4	3.1	3.6	3	2.3	22	4.4	4.3	-	1.7	2.4	1.5	2.2	28	3.6	4.6	2.8	2.2
Metals																									
Aluminum	µg/L	$5/100_{VAR1}{}^{B}$	n/v	n/v	-	-	<50	-	-	-	**150**[B]	-	**1,100**[B]	**110**[B]	**120**[B]	100	**200**[B]	**190**[B]	**160**[B]	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	**10**[BE]	**8**[BE]	**7**[BE]	-	-	-	**10**[BE]	-	**10**[BE]	**9**[BE]	2	**7**[BE]	**7**[BE]	**7**[BE]	**7**[BE]	4	**6**[BE]	**7**[BE]	**6**[BE]	**10**[BE]	<1
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	$11/1{,}100_{s3}{}^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Cadmium	µg/L	$5.8_{STB}{}^{A}$ $0.36_{LTG}{}^{B}$	0.2^{C} $0.5_{s12}{}^{E}$	n/v	-	-	**<5**	-	-	-	**<5**	-	**<10**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**
CWQG Cadmium Guideline (STB)					5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82
CWQG Cadmium Guideline (LTG)					0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	<20	-	-	-	<20	-	<20	<20	<20	<50	<20	<20	30	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	***<20***	-	-	-	***<20***	-	***<40***	***<20***	***<20***	***<20***	**20**[E]	***<20***	***<20***	***<20***	***<20***	***<20***	***<20***	***<20***	***<20***
Copper	µg/L	4^{*B}	5^{C} $5_{s13}{}^{E}$	n/v	**90**[BCE]	**20**[BCE]	**20**[BCE]	-	-	-	**40**[BCE]	-	**<20**	**70**[BCE]	**40**[BCE]	**40**[BCE]	**30**[BCE]	**200**[BCE]	**20**[BCE]	**80**[BCE]	**70**[BCE]	**30**[BCE]	**<10**	**20**[BCE]	**<10**
CCME Copper Guideline					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	µg/L	$7\#^{B}$	$25_{s14}{}^{C}$ $5_{s15}{}^{E}$	n/v	-	-	**<30**	-	-	-	**<30**	-	**<50**	**<30**	**<30**	**<30**	**<30**	**40**[BCE]	**<30**	**<30**	**<30**	**<30**	**<30**	**<30**	**<30**
CCME Lead Guideline					7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PWQO Lead Guideline (s14)					25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$14{,}881_{EQ3}{}^{A}$ $430_{EQ4}{}^{B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881
CCME Manganese Guideline (EQ4)					560	560	560	560	560	560	560	560	560	560	560	560	560	560	560	560	560	560	560	560	560
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	150^{**B}	25^{C}	n/v	<40	**40**[C]	<20	-	-	-	20	-	<60	20	20	**80**[C]	**60**[C]	**40**[C]	**30**[C]	10	20	20	**40**[C]	20	<20
CCME Nickel Guideline					150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	$302_{EQ1}{}^{A}$ $76_{EQ2}{}^{B}$	30^{C} 20^{E}	n/v	**60**[CE]	20	<10	-	-	-	<10	-	<20	<10	<10	20	**40**[CE]	**30**[E]	<20	**40**[CE]	<10	<10	<10	<10	**50**[CE]
CCME Zinc Guideline (EQ1)					142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2
CCME Zinc Guideline (EQ2)					75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006400302
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																								
Sample Date					4-Nov-79	2-Dec-79	5-Jan-80	23-Mar-80	2-Jun-80	9-Jun-80	16-Jun-80	23-Jun-80	1-Jul-80	7-Jul-80	14-Jul-80	21-Jul-80	28-Jul-80	5-Aug-80	11-Aug-80	18-Aug-80	25-Aug-80	14-Oct-80	16-Feb-81	11-Mar-81	2-Jun-81
Sample ID					19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\times 16}{}^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	95
Ammonium	mg/L	n/v	n/v	n/v	0.02	0.04	0.18	0.01	0.07	0.1	0.008	0.15	0.11	0.1	0.1	0.15	0.3	0.27	0.12	0.2	0.03	0.09	0.01	0.17	0.12
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	2.2	-	2.4	1.2	3.4	1.4	1.4	0.2	1.4	2.4	1.2	2	1.6	0.4	1	1.6	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	20.5	21	26.5	26	21	21.5	21.5	22.5	28	22.5	22.5	24	24	19.5	24	4.85	20.5	27	33	40	27
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}{}^{B}$	$_{s9}{}^{C}$	n/v	10	**4**[B]	-	**3**[B]	10.4	**1.3**[B]	8.4	8.4	8.2	8	8.9	7.4	7.5	6.4	6.3	6.8	7.4	13.4	8.9	9.8	12.2
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	570	575	660	690	490	500	550	550	550	550	550	550	600	600	550	550	700	660	780	800	580
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.005	0.005	0.12	0.28	0.07	0.005	0.002	0.002	0.005	0.003	0.001	0.002	0.003	0.01	0.003	0.04	0.01	0.04	0.32	0.81	0.52
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.53
Nitrite	mg/L	$0.20_{nT}{}^{B}$	n/v	n/v	0.004	0.002	0.005	0.003	0.01	0.005	0.003	0.003	0.02	0.002	0.004	0.003	0.007	0.008	0.002	0.04	0.002	0.006	0.004	0.17	0.005
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.93
Phosphorus, Total	mg/L	n/v	$0.030_{ft4}{}^{E}$	n/v	**0.05**[E]	0.02	**0.1**[E]	0.02	**0.04**[E]	**0.05**[E]	**0.06**[E]	**0.06**[E]	**0.09**[E]	**0.04**[E]	**0.06**[E]	**0.05**[E]	**0.09**[E]	**0.44**[E]	**0.08**[E]	**0.04**[E]	**0.06**[E]	**0.05**[E]	**0.04**[E]	**0.04**[E]	**0.04**[E]
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.005	0.001	0.001	0.008	0.001	0.002	0.001	0.01	0.008	0.004	0.007	0.02	0.03	0.33	0.04	0.007	0.002	0.01	0.01	0.01	0.009
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	24	14	42	1	8	14	24	14	31	10	12	-	7	6	4	12	188	17	5	21	5
Residue-Filterable	mg/L	n/v	n/v	n/v	380	395	466	516	353	405	374	328	442	408	454	-	436	-	438	456	382	469	566	550	407
Stream Condition	none	n/v	n/v	n/v	7	4	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}{}_{s2}$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	153
BC MECC Sulfate Guideline (s2)					s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2
Temperature, Lab	deg C	n/v	n/v	n/v	2	0	0	0	17.6	12	12.5	19.6	17	16.1	21.5	22	22.6	20.7	21	19.5	20.9	0	0	1	8.5
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.65	0.48	1.2	0.6	1.01	1.02	0.85	0.74	0.9	0.79	0.8	0.73	1.1	1.29	0.72	1.15	0.78	0.68	0.59	1.03	0.82
Total Residue	mg/L	n/v	n/v	n/v	404	409	508	517	361	419	398	342	473	418	466	-	443	-	442	468	570	486	571	571	-
Turbidity, Lab	NTU	n/v	n/v	n/v	16	2.7	5.4	1.5	2.8	4.6	4.7	3.8	13	3.2	3.4	3	2.1	2.5	2	4.3	101	2.5	1.5	4	2
Metals																								
Aluminum	µg/L	$5/100_{VAR1}{}^{B}$	n/v	n/v	-	-	-	-	-	**240**[B]	**680**[B]	**360**[B]	**1,000**[B]	**350**[B]	**520**[B]	100	**160**[B]	**210**[B]	**150**[B]	**410**[B]	70	70	60	**110**[B]	20
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	**7**[BE]	**6**[BE]	3	4	-	**8**[BE]	4	2	4	**6**[BE]	**7**[BE]	**7**[BE]	**6**[BE]	**10**[BE]	**10**[BE]	1	**10**[BE]	**8**[BE]	**6**[BE]	**6**[BE]	-
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	$11/1{,}100_{s3}{}^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Cadmium	µg/L	$5.8_{STB}{}^{A}$ $0.36_{LTG}{}^{B}$	0.2^{C} $0.5_{s12}{}^{E}$	n/v	**<5**	**<5**	**<5**	**<5**	-	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<1**	<0.2	**1**[BCE]	**<1**	-	-	-	-
CWQG Cadmium Guideline (STB)					5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82
CWQG Cadmium Guideline (LTG)					0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	<20	-	<20	<20	<20	<20	20	<20	50	<2	6	<2	-	-	-	<2
Cobalt	µg/L	n/v	0.9^{E}	n/v	***<20***	***<20***	***<20***	***<20***	-	***<20***	***<20***	***<20***	***<20***	**70**[E]	***<20***	***<20***	***<20***	***<20***	**2**[E]	**<2**	**<2**	-	-	-	-
Copper	µg/L	4^{+B}	5^{C} $5_{s13}{}^{E}$	n/v	**40**[BCE]	**20**[BCE]	**20**[BCE]	**40**[BCE]	-	**20**[BCE]	**30**[BCE]	**20**[BCE]	**40**[BCE]	**<20**	**20**[BCE]	**20**[BCE]	**<10**	**10**[BCE]	**10**[BCE]	**8**[BCE]	**10**[BCE]	**10**[BCE]	**20**[BCE]	**20**[BCE]	**20**[BCE]
CCME Copper Guideline					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	270
Lead	µg/L	$7\#^{B}$	$25_{s14}{}^{C}$ $5_{s15}{}^{E}$	n/v	**<30**	**<30**	**<30**	**<30**	-	**<30**	**<30**	**<30**	**<30**	**<30**	**<30**	**<30**	**<30**	**<6**	<3	<3	<3	<3	**20**[BE]	**7**[E]	**6**[E]
CCME Lead Guideline					7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PWQO Lead Guideline (s14)					25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$14{,}881_{EQ3}{}^{A}$ $430_{EQ4}{}^{B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881
CCME Manganese Guideline (EQ4)					560	560	560	560	560	560	560	560	560	560	560	560	560	560	560	560	560	560	560	560	560
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	150^{+*B}	25^{C}	n/v	<20	<50	<20	20	-	**30**[C]	20	<20	<20	<20	<20	<20	20	20	10	6	20	20	**30**[C]	**40**[C]	10
CCME Nickel Guideline					150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	$302_{EQ1}{}^{A}$ $76_{EQ2}{}^{B}$	30^{C} 20^{E}	n/v	<10	10	**70**[CE]	20	-	20	20	20	20	20	<10	<10	<10	10	7	**150**[BCE]	10	**530**[ABCE]	10	**30**[E]	4
CCME Zinc Guideline (EQ1)					142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2
CCME Zinc Guideline (EQ2)					75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	73.5

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006400302
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																							
Sample Date														19006400302									
Sample ID					11-Jun-81	18-Jun-81	25-Jun-81	29-Jun-81	9-Jul-81	16-Jul-81	23-Jul-81	4-Aug-81	13-Aug-81	20-Aug-81	27-Aug-81	2-Oct-81	5-Nov-81	2-Dec-81	7-Jan-82	2-Feb-82	24-Feb-82	5-May-82	8-Jun-82	8-Jul-82	3-Aug-82
Laboratory Work Order	Units	CCME	PWQO	BC MECC	19006400302 HIST_19006400302	19006400302 HIST_19006400302	19006400302 HIST_19006400302	19006400302 HIST_19006400302	19006400302 HIST_19006400302	19006400302 HIST_19006400302	19006400302 HIST_19006400302	19006400302 HIST_19006400302	19006400302 HIST_19006400302	19006400302 HIST_19006400302	19006400302 HIST_19006400302	19006400302 HIST_19006400302	19006400302 HIST_19006400302	19006400302 HIST_19006400302	19006400302 HIST_19006400302	19006400302 HIST_19006400302	19006400302 HIST_19006400302	19006400302 HIST_19006400302	19006400302 HIST_19006400302	19006400302 HIST_19006400302
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\pm 16}{}^{C}$	n/v	100	102	103	103	108	109	112	117	120	122	125	143	134	134	139	152	158	41.1	105.7	109.8	108.7
Ammonium	mg/L	n/v	n/v	n/v	0.04	0.01	0.006	0.002	0.006	0.07	0.03	0.004	0.01	0.08	0.01	0.05	0.006	0.07	0.06	0.07	0.01	-	-	-	-
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	27.5	31	28.5	27.5	30	28.5	29	29.5	28.5	28.5	29.5	30.5	34.5	35	35.5	39	38	-	-	-	-
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}{}^{B}$	$_{s9}{}^{C}$	n/v	12.8	9.2	11.9	9.2	9.1	9.6	7.2	8.2	9.1	9.7	7.1	12.4	10.2	13.2	12	11	8.3	11.3	11	8.7	8.3
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	580	610	600	600	620	620	640	640	640	620	660	660	740	780	795	880	890	193	663	674	644
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.26	0.45	0.26	0.38	0.01	0.005	0.005	0.08	0.13	0.005	0.25	0.13	0.07	0.005	0.02	0.15	0.38	0.35	0.24	0.14	0.005
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	0.29	0.46	0.27	0.38	0.27	0.005	0.04	-	0.15	0.01	0.25	0.13	0.13	0.02	0.02	0.25	0.39	-	-	-	-
Nitrite	mg/L	$0.20_{n1}{}^{B}$	n/v	n/v	0.03	0.003	0.005	0.002	**0.26**^{B}	0.003	0.04	-	0.02	0.008	0.001	0.003	0.06	0.01	0.002	0.09	0.01	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	**8.64**^{C}	7.98	8.28	7.55	8.48	**8.6**^{C}	8.3	8.2	8.3	8.48	7.84	8.33	8.17	8.35	8.22	7.79	7.47	7.3	8.08	7.81	**8.53**^{C}
Phosphorus, Total	mg/L	n/v	$0.030_{fd4}{}^{E}$	n/v	**0.05**^{E}	**0.17**^{E}	**0.07**^{E}	**0.1**^{E}	**0.04**^{E}	**0.07**^{E}	**0.16**^{E}	**0.15**^{E}	**0.2**^{E}	**0.18**^{E}	**0.26**^{E}	**0.17**^{E}	**0.07**^{E}	**0.05**^{E}	0.03	**0.07**^{E}	**0.08**^{E}	0.03	**0.06**^{E}	**0.17**^{E}	**0.08**^{E}
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.01	0.04	0.01	0.02	0.01	0.02	0.09	0.12	0.16	0.14	0.19	0.14	0.04	0.01	0.02	0.03	0.04	-	-	-	-
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	6	118	7	31	4	4	5	2.1	49.5	8.1	3.7	-	4.8	3.8	0.8	22.7	22.8	-	-	-	-
Residue-Filterable	mg/L	n/v	n/v	n/v	422	416	420	431	451	472	439	502	438	443	471	-	550	490	564	631	654	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	8	8	8	-	8	8	8	8	8	8	8	-	-	-	-	-	-	-	-	8	8
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}{}_{s2}$	161	169	148	128	133	192	167	173	165	170	198	143	195	215	243	248	259	32	188	210	182
BC MECC Sulfate Guideline (s2)					s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2
Temperature, Lab	deg C	n/v	n/v	n/v	12	15	10	12.5	23	20.5	18	20	19	19.5	17	1.5	4.5	4	1	1	2	6	18	20	18.5
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	1.05	1.12	0.75	0.82	0.7	0.59	0.6	0.57	0.7	0.6	0.8	0.62	0.68	0.6	0.57	0.83	0.58	0.53	0.85	1.15	0.66
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	2.5	25	2	4.8	1.5	2.8	2.8	1.71	0.9	0.78	0.81	1.67	1.41	4.4	1.3	4.1	1.54	5.9	9.5	38	2.7
Metals																									
Aluminum	µg/L	$5/100_{VAR1}{}^{B}$	n/v	n/v	**200**^{B}	**1,400**^{B}	**140**^{B}	**380**^{B}	**180**^{B}	10	**130**^{B}	**150**^{B}	**160**^{B}	**140**^{B}	40	**290**^{B}	**200**^{B}	30	100	**140**^{B}	**240**^{B}	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	5	<1	**10**^{BE}
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	$11/1{,}100_{s3}{}^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Cadmium	µg/L	$5.8_{STB}{}^{A}$ $0.36_{LTG}{}^{B}$	0.2^{C} $0.5_{s12}{}^{E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82
CWQG Cadmium Guideline (LTG)					0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	6	3	<2	3	3	<2	3	4	4	3	<2	<2	4	<2	-	7	5	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	4^{*B}	5^{C} $5_{s13}{}^{E}$	n/v	**20**^{BCE}	**50**^{BCE}	**20**^{BCE}	**30**^{BCE}	**10**^{BCE}	**10**^{BCE}	**10**^{BCE}	**10**^{BCE}	**120**^{BCE}	**10**^{BCE}	**9**^{BCE}	**10**^{BCE}	**20**^{BCE}	**10**^{BCE}	**10**^{BCE}	**20**^{BCE}	**20**^{BCE}	**10**^{BCE}	**10**^{BCE}	**60**^{BCE}	**20**^{BCE}
CCME Copper Guideline					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	220	**2,500**^{BC}	160	**1,240**^{BC}	220	110	130	100	140	70	150	170	180	100	30	230	**330**^{BC}	300	**610**^{BC}	**2,380**^{BC}	140
Lead	µg/L	$7\#^{B}$	$25_{s14}{}^{C}$ $5_{s15}{}^{E}$	n/v	**10**^{BE}	<3	<3	3	<3	<3	3	**6**^{E}	4	<3	<2	**10**^{BE}	**6**^{E}	**9**^{BE}	5	<3	**200**^{BCE}	<3	<3	**220**^{BCE}	**50**^{BCE}
CCME Lead Guideline					7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PWQO Lead Guideline (s14)					25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	20	25	25	25
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$14{,}881_{EQ3}{}^{A}$ $430_{EQ4}{}^{B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881
CCME Manganese Guideline (EQ4)					270	560	430	640	270	270	430	430	430	270	560	430	430	430	430	560	760	760	430	560	270
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	150^{**B}	25^{C}	n/v	20	20	20	20	10	10	20	10	10	10	10	20	20	20	20	**40**^{C}	20	3	10	**30**^{C}	10
CCME Nickel Guideline					150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	$302_{EQ1}{}^{A}$ $76_{EQ2}{}^{B}$	30^{C} 20^{E}	n/v	4	10	4	9	4	<1	5	5	6	6	1	10	10	8	6	10	10	10	6	**30**^{E}	20
CCME Zinc Guideline (EQ1)					142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2
CCME Zinc Guideline (EQ2)					41.2	70.5	55.2	100.1	46.9	42.6	54.3	59	54.3	46.9	79.1	53	60.4	52.2	58	82.3	106.9	122.8	65	81	45.1

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006400302
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																								
Sample Date					30-Aug-82	14-Oct-82	4-Nov-82	1-Dec-82	10-Jan-83	2-Feb-83	2-Mar-83	3-May-83	2-Jun-83	4-Jul-83	19006400302 10-Aug-83	2-Sep-83	29-Sep-83	2-Nov-83	5-Jan-84	6-Feb-84	2-Mar-84	3-Apr-84	8-May-84	1-Jun-84	6-Jul-84
Sample ID					19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\pm 1/6}$[C]	n/v	122.1	115.2	100	104.3	114	118	121.3	48.8	77.1	96.2	106.5	107.6	124.6	118	126.1	-	87.9	158.9	102.7	102.6	98.1
Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640[A] 120[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	>5.5/6.0/6.5/9.5$_{VAR}$[B]	$_{s9}$[C]	n/v	8.7	-	14	13.2	-	10.2	5.8	9.1	-	-	-	-	-	12.6	-	-	11.8	8.4	14.2	-	-
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	678	713	612	619	657	687	692	240	455	545	507	504	625	633	722	-	982	899	691	662	549
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550[A] 13[B]	n/v	n/v	0.04	0.08	0.21	0.4	0.37	0.34	0.6	0.63	1.02	0.89	0.05	0.01	0.005	0.01	0.02	-	0.41	0.005	0.57	0.26	0.01
Nitrate (as N)	mg/L	124[A] 3.0[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20$_{nT}$[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	8.12	7.99	7.82	7.81	8.05	7.49	7.4	7.2	7.56	7.28	8.13	**8.63[C]**	**8.73[C]**	**8.53[C]**	8.18	-	7.08	7.42	7.92	8.23	8.41
Phosphorus, Total	mg/L	n/v	0.030$_{fd}$[E]	n/v	**0.14[E]**	**0.08[E]**	**0.04[E]**	0.02	0.02	0.02	**0.04[E]**	0.01	0.03	**0.29[E]**	**0.13[E]**	**0.07[E]**	**0.05[E]**	0.03	0.01	-	**0.18[E]**	**0.04[E]**	0.03	0.03	**0.05[E]**
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	128-429[F]$_{s2}$	197.2	208.9	154.8	169.5	185.6	199	266.2	51.62	134.5	134.5	126.65	141.65	153	186.4	213.5	-	403.5	**475.8F**	222.5	183.3	155.7
BC MECC Sulfate Guideline (s2)					s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2
Temperature, Lab	deg C	n/v	n/v	n/v	13	9	7	2	2	2	0.5	4	-	-	-	-	-	4	-	-	2	3	12	-	-
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.63	0.55	0.59	0.58	0.7	0.46	0.73	0.48	0.59	2.12	0.62	0.6	0.53	0.54	0.58	-	3.3	0.62	1.23	0.87	0.79
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	1.86	4.1	2.5	2.4	1.6	2.2	4.5	6	5.5	60	32	3.2	3.5	2.3	2.5	-	17.6	5.4	6.7	47	19.8
Metals																									
Aluminum	µg/L	5/100$_{VAR1}$[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5[B]	100[C] 5[E]	n/v	**10[BE]**	**8[BE]**	**8[BE]**	**9[BE]**	5	**7[BE]**	5	**10[BE]**	**7[BE]**	1	**20[BE]**	**10[BE]**	**10[BE]**	**8[BE]**	**8[BE]**	**10[BE]**	4	**7[BE]**	5	5	**8[BE]**
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	11/1,100$_{s3}$[C]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Cadmium	µg/L	5.8$_{STB}$[A] 0.36$_{LTG}$[B]	0.2[C] 0.5$_{s12}$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82
CWQG Cadmium Guideline (LTG)					0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	4*[B]	5[C] 5$_{s13}$[E]	n/v	**20[BCE]**	**20[BCE]**	**30[BCE]**	**30[BCE]**	**20[BCE]**	**40[BCE]**	**20[BCE]**	**60[BCE]**	**80[BCE]**	**110[BCE]**	**40[BCE]**	**10[BCE]**	**9[BCE]**	**20[BCE]**	**10[BCE]**	-	**20[BCE]**	**10[BCE]**	**30[BCE]**	**10[BCE]**	**20[BCE]**
CCME Copper Guideline					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300[B]	300[C]	n/v	100	290	200	170	110	150	**360[BC]**	**520[BC]**	**400[BC]**	**3,870[BC]**	**1,650[BC]**	140	**330[BC]**	110	40	-	**1,120[BC]**	240	230	90	260
Lead	µg/L	7#[B]	25$_{s14}$[C] 5$_{s15}$[E]	n/v	**40[BCE]**	**20[BE]**	**20[BE]**	**20[BE]**	<3	**70[BCE]**	<3	**10[BE]**	**10[B]**	4	<3	<3	<3	**10[BE]**	**6[E]**	-	**6[E]**	<3	<3	**10[BE]**	<3
CCME Lead Guideline					7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PWQO Lead Guideline (s14)					25	25	25	25	25	25	25	20	20	25	25	25	25	25	25	25	25	25	25	25	25
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	14,881$_{EQ3}$[A] 430$_{EQ4}$[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881
CCME Manganese Guideline (EQ4)					430	560	560	560	430	760	760	760	640	760	430	270	270	270	430	560	830	760	560	430	270
Mercury	µg/L	0.026[B]	0.2[C]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73[B]	40[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	150**[B]	25[C]	n/v	10	10	10	20	20	20	20	10	20	**30[C]**	10	10	10	20	10	-	10	20	**30[C]**	20	10
CCME Nickel Guideline					150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	302$_{EQ1}$[A] 76$_{EQ2}$[B]	30[C] 20[E]	n/v	10	10	10	10	10	**30[E]**	10	10	20	**100[CE]**	**150[BCE]**	6	1	8	10	-	**80[CE]**	6	10	20	8
CCME Zinc Guideline (EQ1)					142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2
CCME Zinc Guideline (EQ2)					62.9	70	80.4	81	66.6	105.2	113.2	133.2	99.3	124.8	62.4	41.5	38.3	45.1	59.9	75.3	146.9	111.3	74.1	57.5	49.7

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006400302
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																								
Sample Date					3-Dec-84	2-Jan-85	1-Feb-85	1-Mar-85	1-Apr-85	1-May-85	4-Jun-85	3-Jul-85	1-Aug-85	3-Sep-85	30-Sep-85	1-Nov-85	4-Dec-85	31-Dec-85	3-Feb-86	3-Mar-86	30-Apr-86	3-Jun-86	30-Jun-86	8-Aug-86	8-Sep-86
Sample ID					19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302
					02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02
General Chemistry																									
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\leq 16}^{C}$	n/v	-	138.9	144	148.2	153.3	42.9	101.1	68.9	107.7	111.5	125.6	123	128.6	130.5	141.1	150	73.1	94.2	100	162.5	118.8
Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$_{\geq 9}^{C}$	n/v	11.6	6	10	7	7.8	12	17.2	15.4	8.8	-	-	-	-	9.8	-	7.3	11	9.7	8.5	**4.7^{B}**	-
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	-	730	750	785	767	184	602	549	577	580	608	641	666	686	714	767	401	554	558	578	575
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	-	0.06	0.17	0.36	0.34	0.19	0.34	0.01	0.02	0.01	0.02	0.01	0.01	0.06	0.09	0.18	0.31	0.37	0.01	0.59	0.005
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{nT} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	7.82	7.8	7.55	7.98	7.7	8.3	**9.16^{BC}**	8.41	**8.64^{C}**	7.95	8.2	8.24	8.04	7.7	7.99	7.92	8.22	**8.68^{C}**	**8.9^{C}**	8.47
Phosphorus, Total	mg/L	n/v	0.030_{ol4} ^{E}	n/v	-	**0.05^{E}**	**0.04^{E}**	**0.05^{E}**	**0.06^{E}**	0.03	0.03	**0.05^{E}**	**0.06^{E}**	**0.05^{E}**	**0.07^{E}**	**0.04^{E}**	0.02	0.02	0.02	0.02	0.02	**0.08^{E}**	**0.08^{E}**	**0.15^{E}**	**0.1^{E}**
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	-	4	8	4	-	3	-	-	8	-	-	-	-	4	4	-	8	-	-	-	-
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}$ $_{s2}$	-	391.3	195.5	190.3	194.6	28	163.5	165.4	154.85	147.5	153.4	177.8	176	186	190	174	97.85	154	161	100	158
BC MECC Sulfate Guideline (s2)					s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2
Temperature, Lab	deg C	n/v	n/v	n/v	1	1	1	1	1	0.5	10	22	15	13	8	4.5	-	0.5	0.5	1	6	13.5	19	20.3	-
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	-	0.69	0.62	0.57	0.74	0.67	0.74	1.02	0.67	0.54	0.7	0.66	0.69	0.77	0.68	0.58	0.75	1.2	0.82	0.43	0.77
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	-	2.4	4.7	1.5	3.5	6.5	4.9	8.3	7.1	6.6	6.3	3.3	1.25	1.2	1.63	1.1	6.3	15	23	3.4	9.3
Metals																									
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	**8^{BE}**	**6^{BE}**	**7^{BE}**	4	**6^{BE}**	**9^{BE}**	4	**7^{BE}**	**10^{BE}**	**10^{BE}**	**9^{BE}**	**9^{BE}**	**7^{BE}**	**6^{BE}**	5	**7^{BE}**	**6^{BE}**	-	**8^{BE}**	**10^{BE}**	**10^{BE}**
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	$11/1,100_{s3}$ ^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Cadmium	µg/L	5.8_{STB} ^{A} 0.36_{LTG} ^{B}	0.2^{C} 0.5_{s12} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82
CWQG Cadmium Guideline (LTG)					0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	4^{+B}	5^{C} 5_{s13} ^{E}	n/v	**20^{BCE}**	**40^{BCE}**	**20^{BCE}**	**30^{BCE}**	**30^{BCE}**	**40^{BCE}**	**20^{BCE}**	**20^{BCE}**	**40^{BCE}**	**30^{BCE}**	**40^{BCE}**	**20^{BCE}**	**20^{BCE}**	<1	-	-	-	**30^{BCE}**	**20^{BCE}**	**5^{B}**	**10^{BCE}**
CCME Copper Guideline					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	-	90	110	70	110	**390^{BC}**	**400^{BC}**	90	120	150	180	50	40	<1	-	-	-	**370^{BC}**	**980^{BC}**	20	240
Lead	µg/L	$7\#^{B}$	25_{s14} ^{C} 5_{s15} ^{E}	n/v	**<30**	**<30**	**<30**	**<30**	**<30**	**<30**	**20^{BE}**	**<30**	**<30**	**<30**	**<30**	**<30**	**<30**	<3	-	-	-	5	**140^{BCE}**	<3	**160^{BCE}**
CCME Lead Guideline					7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PWQO Lead Guideline (s14)					25	25	25	25	25	20	25	20	25	25	25	25	25	25	25	25	20	25	25	25	25
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$14,881_{EQ3}$ ^{A} 430_{EQ4} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881
CCME Manganese Guideline (EQ4)					560	560	560	640	560	560	430	270	270	270	560	430	430	430	560	560	560	430	270	270	270
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	150^{**B}	25^{C}	n/v	20	20	20	**30^{C}**	20	10	**30^{C}**	20	20	20	20	10	10	<2	-	-	-	**40^{C}**	20	10	10
CCME Nickel Guideline					150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	302_{EQ1} ^{A} 76_{EQ2} ^{B}	30^{C} 20^{E}	n/v	<10	10	20	20	**30^{E}**	10	10	8	10	9	10	9	10	<1	-	-	-	20	**40^{CE}**	9	10
CCME Zinc Guideline (EQ1)					142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2
CCME Zinc Guideline (EQ2)					75.3	80.4	81.7	100.1	70.5	88.6	54.3	27	49.7	41.2	72.3	59	57.1	67.2	88.6	70	74.1	58	39.9	33.3	47.3

See notes on last page

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Summary of Surface Water Analytical Data - 19006400302
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																								
Sample Date					15-Oct-86	5-Nov-86	29-Dec-86	2-Feb-87	2-Mar-87	1-Apr-87	1-May-87	1-Jun-87	2-Jul-87	31-Jul-87	1-Sep-87	18-May-88	20-Jun-88	20-Jul-88	22-Sep-88	28-Sep-88	28-Oct-88	22-Nov-88	20-Feb-89	27-Mar-89	23-Apr-89
Sample ID					19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\pm 16}$[C]	n/v	121.8	143.2	128.3	135.4	146.2	116.2	111.7	110.2	125.3	130.7	141.1	95	109	112	129	129	-	114	131	135	135
Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	0.26	0.26	0.08	0.1	0.05	0.1	0.13	0.11	0.1	0.02	-	0.02	0.02	0.04	0.02	0.11
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640[A] 120[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	>5.5/6.0/6.5/9.5$_{VAR}$[B]	$_{s9}$[C]	n/v	11.2	-	10.6	13.5	11.3	9.5	-	15.8	-	12	10.2	-	12	12.5	11.5	12	-	13.5	**3.5[B]**	**4[B]**	**4[B]**
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	641	830	673	707	772	491	623	606	639	629	686	522	541	527	562	-	-	546	594	632	615
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550[A] 13[B]	n/v	n/v	0.03	0.02	0.11	0.16	0.27	0.49	0.47	0.02	0.02	0.07	0.02	0.72	0.14	0.06	0.005	-	0.12	0.08	0.22	0.34	0.4
Nitrate (as N)	mg/L	124[A] 3.0[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20$_{nit}$[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	8.14	7.95	7.99	7.96	7.72	8.04	8.12	**8.73[C]**	8.36	8.26	8.16	7.9	8.3	8.5	8.1	-	-	8	7.6	7.4	7.3
Phosphorus, Total	mg/L	n/v	0.030$_{fl4}$[E]	n/v	**0.04[E]**	0.01	0.02	0.01	0.03	**0.07[E]**	**0.04[E]**	0.03	**0.06[E]**	**0.04[E]**	**0.08[E]**	0.03	0.03	0.02	**0.05[E]**	-	0.03	0.02	0.03	**0.08[E]**	**0.04[E]**
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	86	8	6	8	-	3	4	4	8
Sulfate	mg/L	n/v	n/v	128-429$_{s2}$[F]	164	177	186	200	166.4	93.2	162	164	169	154	155	-	124	123	134	144	-	132	137	153	140
BC MECC Sulfate Guideline (s2)					s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2
Temperature, Lab	deg C	n/v	n/v	n/v	2	-	0.5	0.5	0.5	0.5	-	14	-	22	14	-	21	21	12	3	-	1	1	1	1
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.62	0.42	0.59	0.63	0.77	0.78	1.08	0.88	0.74	0.47	0.85	0.66	0.67	0.57	0.57	-	0.79	0.64	0.6	0.83	0.65
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	3.8	7.2	1.82	3.7	5.5	2.5	10.4	6	4.4	1.85	3.2	7.1	5.8	0.8	9.5	-	6.1	3.9	1.8	13	2.6
Metals																									
Aluminum	µg/L	5/100$_{VAR1}$[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5[B]	100[C] 5[E]	n/v	**8[BE]**	**7[BE]**	**7[BE]**	5	**7[BE]**	4	-	3	**10[BE]**	**10[BE]**	**10[BE]**	-	-	-	-	-	-	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	11/1,100$_{s3}$[C]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Cadmium	µg/L	5.8$_{STB}$[A] 0.36$_{LTG}$[B]	0.2[C] 0.5$_{s12}$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82
CWQG Cadmium Guideline (LTG)					0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	4*[B]	5[C] 5$_{s13}$[E]	n/v	-	-	-	-	**20[BCE]**	**10[BCE]**	-	-	-	**10[BCE]**	**10[BCE]**	**40[BCE]**	**14[BCE]**	**25[BCE]**	**16[BCE]**	**19[BCE]**	-	**15[BCE]**	**19[BCE]**	**25[BCE]**	**18[BCE]**
CCME Copper Guideline					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300[B]	300[C]	n/v	-	-	-	-	**430[BC]**	180	-	-	-	40	**330[BC]**	270	240	<48	**560[BC]**	220	-	230	<76	<120	<130
Lead	µg/L	7#[B]	25$_{s14}$[C] 5$_{s15}$[E]	n/v	-	-	-	-	<3	**9[BE]**	-	-	-	4	<3	<5	<2	**<12**	**<12**	**<7.5**	-	**<12**	**<12**	**<12**	**<12**
CCME Lead Guideline					7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PWQO Lead Guideline (s14)					25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	14,881$_{EQ3}$[A] 430$_{EQ4}$[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881
CCME Manganese Guideline (EQ4)					430	560	560	560	560	430	430	270	430	430	430	560	430	270	430	560	560	430	640	760	760
Mercury	µg/L	0.026[B]	0.2[C]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73[B]	40[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	150**[B]	25[C]	n/v	-	-	-	-	20	20	-	-	-	20	20	**32[C]**	24	<28	<25	**60[C]**	-	<14	<19	<27	<21
CCME Nickel Guideline					150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	302$_{EQ1}$[A] 76$_{EQ2}$[B]	30[C] 20[E]	n/v	-	-	-	-	10	10	-	-	-	<1	4	10	<3.3	<6	<9.5	**94[BCE]**	-	<6.5	<10	**37[CE]**	<13
CCME Zinc Guideline (EQ1)					142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2
CCME Zinc Guideline (EQ2)					61.9	72.3	70	71.7	87.2	67.2	62.9	38.3	51.7	56.1	60.9	75.3	54.3	46.2	64	75.3	75.3	69.4	96.1	113.2	122.8

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006400302
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																								
Sample Date					28-May-89	3-Jul-89	7-Aug-89	4-Sep-89	3-Nov-91	5-Jan-92	29-Mar-92	13-Aug-93	4-Mar-94	17-Apr-94	19006400302 9-May-94	29-May-94	4-Jul-94	20-Jul-94	28-Aug-94	28-Sep-94	26-Oct-94	27-Nov-94	18-Dec-94	19-Feb-95	30-Apr-95
Sample ID					19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302
					02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02
General Chemistry																									
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\pm 16}^{C}$	n/v	99	104	113	-	123	138.6	155.8	120	160	58	62	110	120	130	125	120	120	130	130	160	97
Ammonium	mg/L	n/v	n/v	n/v	0.33	0.05	0.06	-	0.03	0.02	0.02	0.08	0.01	0.19	0.26	0.07	0.05	0.05	0.04	0.02	0.01	0.01	0.01	0.04	0.14
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640[A] 120[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	7.4	8.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	>5.5/6.0/6.5/9.5$_{VAR}$[B]	$_{s9}^{C}$	n/v	6.5	5.5	8.5	10.5	**4[B]**	16	11	9.5	8	11.5	12	12	-	-	7	10	11	-	7	7	14.5
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	583	619	607	-	612	671	700	520	693	290	283	501	527	508	529	537	539	590	588	724	443,000
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	304	227	320	122	111	219	240	237	229	227	220	265	270	321	-
Nitrate	mg/L	550[A] 13[B]	n/v	n/v	0.36	0.32	0.01	-	0.03	0.02	0.37	0.19	0.48	0.33	0.35	0.04	0.01	0.01	0.01	0.18	0.01	0.01	0.01	0.04	0.16
Nitrate (as N)	mg/L	124[A] 3.0[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20$_{nT}$[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.009
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	7.8	8.2	8.1	-	8	7.9	7.6	**8.7[C]**	7.6	7.5	7.7	8.4	8.2	8.5	8.2	**9[C]**	**9[C]**	8.4	8.3	7.9	7.8
Phosphorus, Total	mg/L	n/v	0.030$_{ft4}$[E]	n/v	0.03	**0.05[E]**	**0.06[E]**	-	**0.26[E]**	0.01	**0.04[E]**	0.02	0.01	**0.04[E]**	0.03	0.01	**0.05[E]**	0.03	**0.18[E]**	**0.04[E]**	0.03	0.03	0.01	**0.07[E]**	**0.04[E]**
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.003
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	-	35	3	-	210	1	2	1	1	6	7	4	20	3	150	10	8	6	1	55	8
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	3	8	8	8	8	8	8	75	8	3	3	8	-	-	8	8	8	-	8	-	3
Sulfate	mg/L	n/v	n/v	128-429$_{F}$ $_{s2}$	171	189	177	-	147	153	170	130	180	65	72	130	110	121	120	140	140	150	150	172	95.8
BC MECC Sulfate Guideline (s2)					s2	s2	s2	s2	s2	s2	s2	429	s2	309	309	429	429	429	429	429	429	s2	s2	s2	s2
Temperature, Lab	deg C	n/v	n/v	n/v	14	22	17	-	0.1	1	2	23	1	0	8	15	-	-	19	14	6	-	1	1	4
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	1	0.9	0.62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.74
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	7.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals																									
Aluminum	µg/L	5/100$_{VAR1}$[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**280[B]**
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5[B]	100[C] 5[E]	n/v	-	-	-	-	**16[BE]**	4	**12[BE]**	**6.1[BE]**	3.3	**9.1[BE]**	**7.4[BE]**	**5.1[BE]**	**9.2[BE]**	**11[BE]**	**14[BE]**	<0.3	**6.3[BE]**	**7.6[BE]**	**6.9[BE]**	<0.5	0
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	11/1,100$_{s3}$[C]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Cadmium	µg/L	5.8$_{STB}$[A] 0.36$_{LTG}$[B]	0.2[C] 0.5$_{s12}$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.2
CWQG Cadmium Guideline (STB)					5.82	5.82	5.82	5.82	5.82	5.82	6.5	4.83	6.84	2.57	2.33	4.65	5.11	5.04	4.87	4.83	4.68	5.65	5.76	6.86	5.82
CWQG Cadmium Guideline (LTG)					0.36	0.36	0.36	0.36	0.36	0.36	0.37	0.31	0.37	0.19	0.17	0.3	0.33	0.32	0.32	0.31	0.3	0.36	0.36	0.37	0.36
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.79
Cobalt	µg/L	n/v	0.9[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	***<1.7***
Copper	µg/L	4*[B]	5[C] 5$_{s13}$[E]	n/v	**34[BCE]**	**28[BCE]**	**8[BCE]**	-	**150[BCE]**	**9.8[BCE]**	**16[BCE]**	**11[BCE]**	**13[BCE]**	**11[BCE]**	**39[BCE]**	**<15**	**15[BCE]**	**19[BCE]**	**100[BCE]**	**12[BCE]**	**13[BCE]**	**16[BCE]**	**8.4[BCE]**	**47[BCE]**	**24[BCE]**
CCME Copper Guideline					4	4	4	4	4	4	4	4	4	2.8	2.6	4	4	4	4	4	4	4	4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300[B]	300[C]	n/v	**810[BC]**	**990[BC]**	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**390[BC]**
Lead	µg/L	7#[B]	25$_{s14}$[C] 5$_{s15}$[E]	n/v	<2	<5	<4.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<4.3
CCME Lead Guideline					7	7	7	7	7	7	7	7	7	4.1	3.6	7	7	7	7	7	7	7	7	7	7
PWQO Lead Guideline (s14)					25	25	25	25	25	25	25	25	25	20	20	25	25	25	25	25	25	25	25	25	25
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	14,881$_{EQ3}$[A] 430$_{EQ4}$[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100
CCME Manganese Guideline (EQ3)					14881	14881	14881	14881	14881	14881	14881	13672	14881	7926.2	7295.2	13248	14357.1	14199.4	13777.7	13672	13301.1	14881	14881	14881	14881
CCME Manganese Guideline (EQ4)					560	430	430	560	430	560	710	270	710	530	470	270	430	270	430	270	270	270	430	610	560
Mercury	µg/L	0.026[B]	0.2[C]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73[B]	40[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.2
Nickel	µg/L	150**[B]	25[C]	n/v	<26	19	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**33[C]**
CCME Nickel Guideline					150	150	150	150	150	150	150	150	150	111.2	103.5	150	150	150	150	150	150	150	150	150	150
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	302$_{EQ1}$[A] 76$_{EQ2}$[B]	30[C] 20[E]	n/v	<15	8.7	<1.1	-	**67[CE]**	7.8	<17	5	10	10	19	<8	6	6	**45[CE]**	<5	15	8	<1	**41[CE]**	**23[E]**
CCME Zinc Guideline (EQ1)					142.2	142.2	142.2	142.2	142.2	142.2	142.2	131	142.2	78.1	72.2	127.1	137.2	135.8	131.9	131	127.6	142.2	142.2	142.2	142.2
CCME Zinc Guideline (EQ2)					81.7	59	64	75.3	67.6	76	106.4	32.9	111.7	48.6	37.8	40.7	52.2	40.4	49.9	25.8	25	48.7	53.8	87.8	81.7

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006400302
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					19006400302																		
Sample Date					30-May-95	29-Jun-95	30-Jul-95	30-Aug-95	24-Sep-95	30-Oct-95	26-Nov-95	28-Dec-95	25-Feb-96	3-Jun-03	8-Jul-03	21-Oct-03	11-Nov-03	26-May-04	22-Jun-04	27-Jul-04	19-Oct-04	26-Apr-05	8-Jun-05	4-Oct-05
Sample ID					19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302	19006400302
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302	HIST_19006400302
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{x16}^{C}$	n/v	110	121	130	140	139	130	132	41	150	64.7	116	109	118	126	130	126	108	135	132	113
Ammonium	mg/L	n/v	n/v	n/v	0.02	0.09	0.03	0.09	0.32	0.01	0.07	0.01	0.01	0.029	0.089	0.037	0.026	0.046	0.242	0.036	0.076	0.083	0.097	0.047
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640[A] 120[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	21	61.3	56.4	56.6	58.5	51.1	47.3	49.5	48.7	47.8	54.9
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	28.8	29.4	28.3	24	31.7	31.4	26.2
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	7.6	8.3	8.3	8.9	7.3	7.9	7.6
Dissolved Oxygen	mg/L	>5.5/6.0/6.5/9.5$_{VAR}$[B]	$_{s9}^{C}$	n/v	11	8	11	8.5	11.6	7	9	7.5	**5[B]**	10.39	9.9	12.52	15.05	10.95	8.41	10.09	12.74	13.18	7.76	10.63
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	494,000	467,000	511,000	544,000	543,000	593,000	642,000	106,000	693,000	540,000	821,000	951,000	957,000	845,000	869,000	873,000	964,000	900,000	853,000	955,000
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	535	817	968	1,026	855	857	909	950	970	739	971
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	240	240	240	250	210	260	280	51	-	221	316	345	383	352	367	365	356	385	363	344
Nitrate	mg/L	550[A] 13[B]	n/v	n/v	0.01	0.01	0.01	0.01	0.81	0.01	0.01	0.1	0.21	0.09	<0.007	1.38	0.949	0.376	0.124	0.278	0.75	0.835	0.119	0.47
Nitrate (as N)	mg/L	124[A] 3.0[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20$_{nT}$[B]	n/v	n/v	0.001	0.002	0.001	0.003	0.07	0.002	0.003	0.003	0.001	0.013	0.005	0.043	0.023	0.01	0.01	0.041	0.024	0.03	0.006	0.031
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	-	-	-	-	-	-	-	-	-	7.4	8.24	**8.65[C]**	8.13	8.03	7.99	8.33	8.18	7.34	8.19	8.28
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	8.1	8.2	**8.8[C]**	8.3	8.2	8.1	7.9	7.5	7.6	7.83	8.23	8.47	8.36	8.26	8.05	8.4	8.47	8.07	8.12	8.32
Phosphorus, Total	mg/L	n/v	0.030$_{fd}$[E]	n/v	**0.05[E]**	**0.07[E]**	**0.07[E]**	**0.23[E]**	**0.42[E]**	0.03	**0.04[E]**	0.008	-	**0.061[E]**	**0.087[E]**	**0.061[E]**	**0.05[E]**	**0.037[E]**	**0.068[E]**	**0.051[E]**	**0.056[E]**	0.019	0.02	0.023
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.01	0.04	0.02	0.14	0.34	0.004	0.006	0.002	0.01	0.0214	0.0034	0.0041	<0.0015	<0.0007	0.0216	<0.0005	<0.002	<0.0011	<0.0005	<0.0022
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	1.18	1.08	0.76	2.78	3	1.72	0.14
Residue,Particulate	mg/L	n/v	n/v	n/v	3.3	3.4	6.8	7	2.6	2.2	7.5	3	4	9	7.1	11.7	10	14.1	8.1	19.2	5.8	3.3	<1.2	<1.5
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	351	542	691	873	747	627	688	687	665	662	675
Stream Condition	none	n/v	n/v	n/v	3	8	8	8	8	8	4	4	4	-	-	-	-	-	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	128-429$_{s2}$[F]	109	-	104	103	79.9	147	155	5.5	180	-	-	-	-	-	-	-	-	-	-	-
BC MECC Sulfate Guideline (s2)					429	429	429	429	429	s2	s2	218	s2	429	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2
Temperature, Lab	deg C	n/v	n/v	n/v	13	23	24	17	10	3	1	1	1	14.2	21.3	6.7	0.5	13.4	18.7	20.9	6.5	3.6	16.6	15.7
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.53	0.59	0.72	0.97	14,482	0.57	0.92	0.35	-	0.86	1.05	1.46	1.22	0.73	0.95	0.81	1.07	0.57	0.56	0.6
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	360	549	703	883	761	635	707	693	668	684	677
Turbidity, Lab	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	8.18	3.91	10.7	7.67	8.29	5.52	10.8	6.44	2.62	0.63	1.29
Metals																								
Aluminum	µg/L	5/100$_{VAR1}$[B]	n/v	n/v	53	**110[B]**	55	**130[B]**	70	64	**320[B]**	90	55	**220[B]**	12	20	-	**116[B]**	**139[B]**	41.9	23.3	-	18.7	10.5
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5[B]	100[C] 5[E]	n/v	**5.2[BE]**	**10[BE]**	**12[BE]**	**9.3[BE]**	**6.4[BE]**	**6[BE]**	4.8	-	5	-	-	-	-	-	-	-	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	13.4	21	25.4	-	17.5	17.9	18.8	17.7	-	19	17.4
Beryllium	µg/L	n/v	11/1,100$_{s3}$[C]	n/v	-	-	-	-	-	-	-	-	-	0.0227	0.00761	0.014	-	0.0137	0.0154	0.0253	0.0173	-	0.0203	-0.00435
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	11	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Cadmium	µg/L	5.8$_{STB}$[A] 0.36$_{LTG}$[B]	0.2[C] 0.5$_{s12}$[E]	n/v	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	**<0.2**	<0.2	**0.717[BCE]**	-0.0441	**0.366[C]**	-	0.000343	-0.0248	**0.832[BCE]**	0.124	-	**0.411[BC]**	-0.341
CWQG Cadmium Guideline (STB)					5.11	5.11	5.11	5.32	4.46	5.54	5.97	1.06	5.82	4.7	6.76	7.39	7.7	7.54	7.7	7.7	7.63	7.7	7.7	7.36
CWQG Cadmium Guideline (LTG)					0.33	0.33	0.33	0.34	0.29	0.35	0.37	0.09	0.36	0.31	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	63,000	63,000	64,000	67,000	57,000	71,000	77,000	15,000	-	68,000	76,200	83,800	94,600	85,000	87,600	85,000	84,400	91,300	85,900	79,000
Chromium	µg/L	n/v	n/v	n/v	<0.2	<0.2	<0.2	<0.2	<0.23	<0.2	2.9	1	1	0.735	-0.29	-0.475	-	0.873	0.607	-0.981	0.876	-	-0.116	-0.576
Cobalt	µg/L	n/v	0.9[E]	n/v	***<1.6***	***<2***	**4.5[E]**	**3.3[E]**	***<1.2***	**3.9[E]**	**4.8[E]**	<0.5	**3[E]**	**1.17[E]**	**4.16[E]**	**25.3[E]**	-	**2.07[E]**	**2.03[E]**	**5.01[E]**	**13.5[E]**	-	**3.45[E]**	**12.5[E]**
Copper	µg/L	4[+B]	5[C] 5$_{s13}$[E]	n/v	**9.4[BCE]**	**19[BCE]**	**8.2[BCE]**	**9.5[BCE]**	**8[BCE]**	**9.7[BCE]**	**19[BCE]**	**4[S]**	**16[BCE]**	**6.58[BCE]**	**8.04[BCE]**	**22.1[BCE]**	-	**8.42[BCE]**	**7.93[BCE]**	**10.3[BCE]**	**12.2[BCE]**	-	**7.75[BCE]**	**5.96[BCE]**
CCME Copper Guideline					4	4	4	4	4	4	4	2	4	4	4	4	4	4	4	4	4	4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300[B]	300[C]	n/v	82	200	98	190	93	86	**480[BC]**	200	160	**373[BC]**	61.7	40.2	-	169	153	88.9	39.5	-	28.2	24.2
Lead	µg/L	7#[B]	25$_{s14}$[C] 5$_{s15}$[E]	n/v	<3.9	<3.7	<3.9	<2	<4.4	<3.9	<3.1	**<2**	**<8**	-8.1	0.603	-4.39	-	2.45	-7.7	-0.949	-3.57	-	1.21	-1.74
CCME Lead Guideline					7	7	7	7	7	7	7	1	7	7	7	7	7	7	7	7	7	7	7	7
PWQO Lead Guideline (s14)					25	25	25	25	25	25	25	20	25	20	25	25	25	25	25	25	25	25	25	25
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	3	5	5	5	5	5	5	5	5	5	5	5	5
Magnesium	µg/L	n/v	n/v	n/v	20,000	20,000	20,000	20,000	16,000	21,000	22,000	3,400	-	12,400	30,600	32,900	35,700	34,100	36,100	37,200	35,300	38,100	36,000	35,600
Manganese	µg/L	14,881$_{EQ3}$[A] 430$_{EQ4}$[B]	n/v	n/v	81	130	100	83	23	23	49	13	180	42.3	112	15.2	-	63.5	49.1	78.7	13.8	-	102	10.2
CCME Manganese Guideline (EQ3)					14357.1	14357.1	14357.1	14881	12768.8	14881	14881	3685.4	14881	13354.2	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881
CCME Manganese Guideline (EQ4)					430	430	270	430	430	430	560	430	640	560	460	290	460	460	460	290	290	460	460	460
Mercury	µg/L	0.026[B]	0.2[C]	n/v	-	-	-	-	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Molybdenum	µg/L	73[B]	40[E]	n/v	1.3	1.6	2.1	1.9	1.7	4.8	5	<0.2	4	2.86	0.00371	3.96	-	0.0331	1.34	2.03	5.7	-	2.92	4.68
Nickel	µg/L	150**[B]	25[C]	n/v	25	**26[C]**	21	25	22	**40[C]**	**45[C]**	<1	**45[C]**	5.55	12.8	22.8	-	11	12.4	12.6	19.3	-	14.2	15.5
CCME Nickel Guideline					150	150	150	150	150	150	150	25	150	150	150	150	150	150	150	150	150	150	150	150
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	2,680	4,820	11,600	12,700	4,330	4,490	5,240	11,200	5,870	5,020	10,700
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	20,400	48,200	68,200	68,200	44,400	39,800	42,100	63,500	42,900	39,300	64,600
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	258	335	398	-	321	333	368	314	-	390	373
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	6.59	-0.621	-0.812	-	2.8	3.34	0.293	-0.281	-	-1.03	-0.0443
Vanadium	µg/L	n/v	6[E]	n/v	-	-	-	-	-	-	-	-	-	0.492	-0.684	-0.699	-	0.026	2.1	0.975	-0.176	-	-0.262	0.136
Zinc	µg/L	302$_{EQ1}$[A] 76$_{EQ2}$[B]	30[C] 20[E]	n/v	<4.9	9.9	<4.1	10	6.9	11	**24[E]**	9	**25[E]**	10.3	3.68	11.2	-	5.9	6.75	6.58	8.48	-	4.65	1.38
CCME Zinc Guideline (EQ1)					137.2	137.2	137.2	141.9	122.7	142.2	142.2	37.8	142.2	128.1	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2
CCME Zinc Guideline (EQ2)					56.6	52.2	32	50	46	61.1	77.1	21.3	96.1	65.2	66.1	59.1	71.3	70.3	89.9	67.3	63.8	88	82.4	65.5

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006400402
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																								
Sample Date					25-Apr-68	26-Aug-68	8-Dec-68	17-Feb-69	21-May-69	24-Jun-69	3-Aug-69	29-Aug-69	16-Aug-71	11-Sep-71	16-Oct-71	11-Dec-71	15-Jan-72	12-Feb-72	11-Mar-72	15-Apr-72	15-May-72	17-Jun-72	15-Jul-72	19-Aug-72	16-Sep-72
Sample ID					19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$^{C}_{\ll 16}$	n/v	-	28	42	49	34	35	22	14	-	-	-	-	-	-	-	-	-	-	-	-
Ammonium	mg/L	n/v	n/v	n/v	0.14	0.12	0.15	0.22	0.06	0.1	0.08	0.31	0.05	0.05	0.03	0.04	0.37	0.54	0.96	1	0.08	0.06	0.03	0.06	0.25
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	1.6	3.4	3.4	5	2.5	2	1.2	9	0.8	2	0.6	1.4	3	3	4	9	1	1.6	1	3	1.8
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	65	-	-	-	-	-	-	-	-	-	55
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	2	6	7	9	4	6	3	7	-	-	5	8	-	-	-	-	3	<1	-	11	4
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}{}^{B}$	$^{C}_{\geq 9}$	n/v	7.5	-	**5^{B}**	**4.5^{B}**	6	**2.4^{B}**	**3^{B}**	**0^{B}**	6	**4^{B}**	8	8	**3^{B}**	**1^{B}**	**1^{B}**	**2^{B}**	9	8	**5^{B}**	7	7
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	126	517	494	534	247	305	275	653	457	335	333	427	500	628	649	725	119	235	315	581	381
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	192	162	236	101	124	97	187	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.28	0.01	0.01	-	0.04	0.01	-	0.005	0.02	0.01	0.01	0.08	0.02	0.01	0.04	0.01	0.09	0.01	0.03	0.01	0.01
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate + Nitrite (as N)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	$0.20_{t1}{}^{B}$	n/v	n/v	0.01	0.01	0.02	0.02	0.02	0.01	0.01	0.01	0.03	0.01	0.01	0.01	0.02	0.006	0.04	0.008	0.01	0.01	0.03	0.01	0.01
Nitrite (as N)	mg/L	0.060^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen (Total)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen Ammonia/Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	6.9	7.4	6.6	7.6	7.4	7.6	6.5	**5.9^{BC}**	8	6.9	7.2	-	6.8	6.6	**6.4^{BC}**	**6.4^{BC}**	7.1	7.5	7	7.7	7.5
Phosphate (as P)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total	mg/L	n/v	$0.030_{t4}{}^{E}$	n/v	**0.17^{E}**	**0.26^{E}**	**0.11^{E}**	**0.22^{E}**	**0.09^{E}**	**0.12^{E}**	**0.15^{E}**	**0.18^{E}**	-	-	**0.08^{E}**	**0.06^{E}**	**0.96^{E}**	**0.14^{E}**	**0.31^{E}**	**0.2^{E}**	**0.07^{E}**	0.01	**0.13^{E}**	**0.18^{E}**	-
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.15	0.02	0.01	0.04	0.01	0.02	0.01	0.03	-	-	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.04	0.09	-
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	18	29	12	10	20	10	5	10	10	10	5	10	10	10	10	5	20	15	15	5	20
Residue-Filterable	mg/L	n/v	n/v	n/v	70	385	372	350	160	230	175	390	360	440	285	320	370	470	510	615	80	245	255	445	300
Specific Conductance	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}{}_{t2}$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC MECC Sulfate Guideline (s2)					s2	429	309	429	309	309	309	429	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2
Temperature, Lab	deg C	n/v	n/v	n/v	5.3	17	0	0	10	15	23	24	20	17	8	0	0	0	0	0	8	17	20	18	13
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.63	0.86	0.83	1.1	2.2	0.76	0.95	1.6	0.82	0.96	0.95	0.72	1.1	1.3	1.8	1.6	0.6	0.17	2	0.87	1.2
Total Residue	mg/L	n/v	n/v	n/v	88	414	384	360	180	240	180	400	370	450	290	330	380	480	520	620	100	260	270	450	320
Total Suspended Solids	mg/L	$^{B}_{5N}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Field	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	39	23	4	7.5	15	1	8	4	6	25	8	6	6	8	12	10	15	12	12	8	8
Metals																									
Aluminum	µg/L	$5/100_{VAR1}{}^{B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	5	5	100	100	100	100	100	100	5	5	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	-	0	-	**20**	-	-	**10**	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	$1{,}100_{s3}{}^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Bismuth	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	µg/L	$7.1_{STB}{}^{A}$ $0.37_{LTG}{}^{B}$	0.2^{C} $0.5_{t12}{}^{E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					7.08	4.07	3.43	5.02	2.12	2.61	2.03	3.96	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08
CWQG Cadmium Guideline (LTG)					0.37	0.27	0.24	0.32	0.16	0.19	0.15	0.27	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	4^{+B}	5^{C} $5_{s13}{}^{E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Copper Guideline					4	4	3.6	4	2.4	2.8	2.3	4	4	4	4	4	4	4	4	4	4	4	4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	-	**1,800^{BC}**	**950^{BC}**	**1,100^{BC}**	**1,000^{BC}**	**900^{BC}**	**1,300^{BC}**	**1,000^{BC}**	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	µg/L	$7\#^{B}$	$25_{s14}{}^{C}$ $5_{s15}{}^{E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Lead Guideline					7	7	5.9	7	3.2	4.2	3.1	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PWQO Lead Guideline (s14)					20	10	20	20	10	10	10	5	20	20	20	20	20	20	20	20	20	20	20	20	20
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Lithium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$14{,}881_{EQ3}{}^{A}$ $710_{EQ4}{}^{B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					14881	11802.7	10167.1	14146.8	6714.8	8040.2	6480.8	11532.4	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881
CCME Manganese Guideline (EQ4)					1000	730	770	640	610	530	560	690	460	1000	860	860	1000	1000	1000	1000	940	710	940	610	710
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	150^{++B}	25^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Nickel Guideline					150	150	137.9	150	96.3	112.6	93.4	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tin	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium	µg/L	33^{A} 15^{B}	$5_{s}{}^{E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	$341_{EQ1}{}^{A}$ $128_{EQ2}{}^{B}$	30^{C} 20^{E}	n/v	-	-	-	-	-	-	-	-	-	-	**70^{CE}**	-	-	-	-	-	-	-	-	-	**40^{CE}**
CCME Zinc Guideline (EQ1)					142.2	113.9	98.9	135.3	66.7	79.1	64.5	111.4	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2
CCME Zinc Guideline (EQ2)					288.8	114.7	187.5	118.5	62.4	64.4	125.2	380	117.8	288.8	226.2	192.2	313.4	368.9	434.2	434.2	245.4	177.1	266.2	150.5	177.1
Zirconium	µg/L	n/v	$4_{s}{}^{E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Table
Summary of Surface Water Analytical Data - 19006400402
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																								
Sample Date					14-Oct-72	26-Nov-72	19-Dec-72	28-Jan-73	18-Feb-73	18-Mar-73	15-Apr-73	20-May-73	17-Jun-73	22-Jul-73	19-Aug-73	23-Sep-73	21-Oct-73	25-Nov-73	27-Dec-73	27-Jan-74	17-Feb-74	24-Mar-74	28-Apr-74	30-Jun-74	28-Jul-74
Sample ID					19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402
					02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02
General Chemistry																									
Alkalinity, Total (as CaCO3)	mg/L	n/v	$^{C}_{\leq 16}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ammonium	mg/L	n/v	n/v	n/v	0.04	0.02	0.16	0.38	0.56	0.67	0.13	0.02	0.07	0.05	0.06	0.06	0.01	0.05	0.79	0.38	0.43	0.77	0.33	0.07	0.01
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	0.6	1.8	2	0.8	2.5	4.5	2	2	1.6	1.2	1.6	1.8	1.8	1.2	3	2.5	12	2.5	3	1	1
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	-	11	12	11	16	11	6	5	6	8	8	8	5	8	24	16	14	15	7	7	21
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}{}^{B}$	$^{C}_{\geq 9}$	n/v	11	9	**5^{B}**	6	6	7	9	9	7	6	6	7	10	8	**2^{B}**	**2^{B}**	**3^{B}**	**2^{B}**	7	6	6
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	-	510	540	444	510	433	280	205	353	510	455	510	305	425	700	730	840	940	321	385	610
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.01	0.03	0.12	0.18	0.25	0.51	0.12	0.05	0.01	0.01	0.01	0.06	0.01	0.11	0.21	0.01	0.01	0.01	0.51	0.02	0.21
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate + Nitrite (as N)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	$0.20_{t1}{}^{B}$	n/v	n/v	0.01	0.01	0.01	0.02	0.01	0.03	0.01	0.004	0.006	0.008	0.005	0.03	0.01	0.01	0.03	0.004	0.005	0.004	0.02	0.01	0.003
Nitrite (as N)	mg/L	0.060^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen (Total)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen Ammonia/Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.3	7.2	**5.8^{BC}**	7.1	7.3	7.1	6.9	7.1	7.4	7.3	7.1	7.5	7.2	-	7.3	6.9	6.8	7.4	6.8	-	7.4
Phosphate (as P)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total	mg/L	n/v	$0.030_{t4}{}^{E}$	n/v	-	**0.14^{E}**	**0.16^{E}**	**0.14^{E}**	**0.14^{E}**	**0.15^{E}**	**0.09^{E}**	**0.07^{E}**	**0.11^{E}**	**0.11^{E}**	**0.13^{E}**	**0.15^{E}**	**0.09^{E}**	**0.09^{E}**	**0.45^{E}**	**0.26^{E}**	**0.29^{E}**	**0.42^{E}**	**0.12^{E}**	**0.11^{E}**	**0.19^{E}**
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	-	0.05	0.05	0.08	0.08	0.05	0.01	0.01	0.04	0.06	0.05	0.07	0.02	0.04	0.32	0.07	0.06	0.05	0.02	0.05	0.16
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	10	10	5	10	10	20	15	10	10	10	10	10	10	20	10	10	10	10	10	10	10
Residue-Filterable	mg/L	n/v	n/v	n/v	200	390	435	290	370	330	205	160	280	370	320	390	220	290	520	520	590	760	209	250	480
Specific Conductance	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	-	5	4	4	4	6	6	6	5	589	589	89	75	5	4	4	4	4	3	57	85
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}{}_{t2}$	-	180	192	96	120	128	70	50	110	170	160	13	94	-	210	260	350	380	97	130	195
BC MECC Sulfate Guideline (s2)					s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2
Temperature, Lab	deg C	n/v	n/v	n/v	8	1	0	0	0	0	4	11	17	21	20	8	7	0	0	0	0	0	1	18	22
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.91	0.71	0.95	1.2	1.2	1.5	0.88	0.61	0.64	0.71	0.81	0.91	0.92	0.79	1.3	0.92	0.99	1.51	1.1	0.6	0.66
Total Residue	mg/L	n/v	n/v	n/v	210	400	440	300	380	350	220	170	290	380	330	400	230	310	530	530	600	770	219	260	490
Total Suspended Solids	mg/L	$^{B}_{5N}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Field	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	8	10	20	12	11	19	12	1.4	4.8	3.8	3.3	4.4	4.1	7.2	8.3	8.1	8.1	5.7	17	3.2	4.8
Metals																									
Aluminum	µg/L	$5/100_{VAR1}{}^{B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	5	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	***<10***	**50**	***<10***	**40**	***<10***	***<70***	**10**	**30**	***<10***	***<10***	***<10***	**30**	-	**50**	**120^{BCE}**	-	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	$1{,}100_{s3}{}^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Bismuth	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	µg/L	$7.1_{STB}{}^{A}$ $0.37_{LTG}{}^{B}$	0.2^{C} $0.5_{t12}{}^{E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08
CWQG Cadmium Guideline (LTG)					0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	<10	-	<10	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	4^{+B}	5^{C} $5_{s13}{}^{E}$	n/v	-	**<50**	**<30**	**<50**	**<50**	**<50**	**<50**	**<30**	**<30**	**<30**	**<50**	**<50**	**<30**	-	**<30**	**<10**	**10BCE**	**<30**	**90BCE**	-	**40BCE**
CCME Copper Guideline					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	-	**1,000^{BC}**	**1,500^{BC}**	**1,400^{BC}**	**1,300^{BC}**	-	**900^{BC}**	**1,200^{BC}**	**650^{BC}**	-	**450^{BC}**	**800^{BC}**	**950^{BC}**	-	250	**1,500^{BC}**	**1,500^{BC}**	**1,000^{BC}**	**2,000^{BC}**	**500^{BC}**	**600^{BC}**
Lead	µg/L	$7\#^{B}$	$25_{s14}{}^{C}$ $5_{s15}{}^{E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	**<30**	-	-	-	-	-	-	-
CCME Lead Guideline					7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PWQO Lead Guideline (s14)					20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Lithium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$14{,}881_{EQ3}{}^{A}$ $710_{EQ4}{}^{B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	190	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881
CCME Manganese Guideline (EQ4)					860	860	880	940	860	940	1000	940	860	860	940	710	860	860	860	1000	1000	860	1000	860	860
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	150^{**B}	25^{C}	n/v	-	<70	**60^{C}**	**40^{C}**	<70	<70	<70	<40	<40	<40	<70	<70	<40	-	**50^{C}**	20	**40^{C}**	<40	**70^{C}**	-	<40
CCME Nickel Guideline					150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tin	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium	µg/L	33^{A} 15^{B}	$5_{s}{}^{E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	$341_{EQ1}{}^{A}$ $128_{EQ2}{}^{B}$	30^{C} 20^{E}	n/v	-	**170^{CE}**	**<260**	10	**70^{CE}**	**130^{CE}**	**360^{ABCE}**	**170^{CE}**	**230^{BCE}**	**50^{CE}**	<50	**70^{CE}**	<30	-	<30	**110^{CE}**	**60^{CE}**	**50^{CE}**	**180^{CE}**	**30^{E}**	10
CCME Zinc Guideline (EQ1)					142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2
CCME Zinc Guideline (EQ2)					208.5	226.2	708	245.4	208.5	245.4	288.8	245.4	192.2	208.5	245.4	177.1	226.2	192.2	208.5	288.8	313.4	192.2	313.4	192.2	192.2
Zirconium	µg/L	n/v	$4_{s}{}^{E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006400402
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																							
Sample Date					25-Aug-74	22-Sep-74	3-Nov-74	1-Dec-74	29-Dec-74	26-Jan-75	16-Feb-75	23-Mar-75	27-Apr-75	25-May-75	22-Jun-75	27-Jul-75	31-Aug-75	28-Sep-75	26-Oct-75	30-Nov-75	28-Dec-75	25-Jan-76	22-Feb-76	21-Mar-76	25-Apr-76
Sample ID					19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02
General Chemistry																									
Alkalinity, Total (as CaCO3)	mg/L	n/v	$^{C}_{\leq 16}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ammonium	mg/L	n/v	n/v	n/v	0.01	0.02	0.01	0.01	0.24	0.31	0.75	0.48	0.35	0.06	0.02	0.04	0.03	0.02	0.01	0.04	0.08	-	0.38	0.52	0.07
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	3.5	2	2	2.5	1.6	14	1.6	2.2	1.8	2.2	1.4	0.6	1	1	1.6	1.4	0.8	-	1	1.6	1.6
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	20	5	5	25	10	12	16	12	9	6	5	11	6	5	3	10	-	-	15.5	24	3.4
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}{}^{B}$	$^{C}_{\geq 9}$	n/v	7	9	9	8	**2**[B]	**1**[B]	**3**[B]	**2**[B]	8	6	6	**5**[B]	6	7	6	9	8	**2**[B]	**3**[B]	**4**[B]	10
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	590	330	260	700	670	900	650	780	285	300	270	700	92	460	415	410	470	640	650	840	130
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.15	0.01	0.02	0.05	0.08	0.02	0.02	0.01	0.41	0.03	0.09	0.01	0.01	0.01	0.01	0.13	0.1	-	0.29	0.23	0.06
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate + Nitrite (as N)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	$0.20_{t1}{}^{B}$	n/v	n/v	0.02	0.01	0.01	0.01	0.08	0.009	0.04	0.004	0.02	0.01	0.01	0.01	0.002	0.006	0.007	0.009	0.008	-	0.02	0.19	0.01
Nitrite (as N)	mg/L	0.060^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen (Total)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen Ammonia/Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.8	7.4	6.6	8	7	7	7.1	-	7.3	7.2	-	8.2	6.6	7.7	6.8	7	7.1	7.5	7.8	7.5	7.5
Phosphate (as P)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total	mg/L	n/v	$0.030_{t4}{}^{E}$	n/v	**0.3**[E]	**0.07**[E]	**0.05**[E]	0.01	**0.17**[E]	**0.09**[E]	**0.22**[E]	**0.24**[E]	**0.08**[E]	**0.1**[E]	**0.08**[E]	**0.11**[E]	**0.05**[E]	**0.06**[E]	**0.06**[E]	**0.04**[E]	**0.06**[E]	-	**0.17**[E]	**0.15**[E]	**0.04**[E]
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.1	0.02	0.01	0.004	0.02	0.007	0.06	0.01	0.01	0.04	0.02	0.07	0.01	0.02	0.01	0.02	0.02	-	0.07	0.04	0.008
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	10	15	15	15	15	25	13	16	25	12	11	5	7	9	11	5	8	-	9	9.3	19
Residue-Filterable	mg/L	n/v	n/v	n/v	560	80	-	525	515	745	467	624	185	98	176	515	67	384	336	323	361	-	-	-	-
Specific Conductance	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	75	8	7	4	4	4	4	4	3	9	6	7	9	9	9	4	4	4	4	4	3
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}{}_{t2}$	210	120	80	250	280	300	200	-	90	76	-	275	**575**[F]	180	165	130	-	270	-	-	31
BC MECC Sulfate Guideline (s2)					s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2
Temperature, Lab	deg C	n/v	n/v	n/v	20	8	4	0	0	0	0	0	1	20	20	20	17	11	7	0	0	0	0	0	1
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	1	0.86	0.68	0.56	0.68	0.59	1.4	0.98	1.1	0.72	0.88	0.47	0.3	0.8	0.66	0.71	0.75	-	1.01	1.07	0.58
Total Residue	mg/L	n/v	n/v	n/v	570	95	-	540	530	770	480	640	210	210	187	520	74	393	347	328	369	-	-	678	104
Total Suspended Solids	mg/L	$^{B}_{5N}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Field	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	10	4.6	2.9	1.5	5.9	4.3	4.1	8.1	12	6.1	5.4	3.9	1.9	5.6	3.8	5	3.8	-	8.5	9	20
Metals																									
Aluminum	µg/L	$5/100_{VAR1}{}^{B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	**20**	***<10***	-	-	***<10***	**10**	-	-	3	-	**10**	***<20***	***<10***	0	***<10***	-	4	3	3	4
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	$1{,}100_{s3}{}^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Bismuth	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	µg/L	$7.1_{STB}{}^{A}$ $0.37_{LTG}{}^{B}$	0.2^{C} $0.5_{t12}{}^{E}$	n/v	-	-	-	-	-	-	-	**<20**	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08
CWQG Cadmium Guideline (LTG)					0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	4^{+B}	5^{C} $5_{s13}{}^{E}$	n/v	**80BCE**	**20BCE**	**<30**	**140BCE**	-	**40BCE**	**<30**	**<50**	-	**<10**	-	**60BCE**	**<10**	**<30**	**20BCE**	**10BCE**	-	**30BCE**	**<10**	**<20**	**40BCE**
CCME Copper Guideline					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	**2,000**[BC]	**900**[BC]	**900**[BC]	100	**750**[BC]	**950**[BC]	**1,200**[BC]	-	**1,250**[BC]	100	-	250	230	**510**[BC]	**800**[BC]	**730**[BC]	**750**[BC]	**1,300**[BC]	**1,000**[BC]	**1,200**[BC]	**1,000**[BC]
Lead	µg/L	$7\#^{B}$	$25_{s14}{}^{C}$ $5_{s15}{}^{E}$	n/v	-	-	-	-	-	-	-	**40**[BCE]	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Lead Guideline					7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PWQO Lead Guideline (s14)					20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Lithium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$14{,}881_{EQ3}{}^{A}$ $710_{EQ4}{}^{B}$	n/v	n/v	-	-	-	-	-	-	-	560	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881
CCME Manganese Guideline (EQ4)					610	860	1000	460	940	940	940	860	860	860	860	460	1000	610	1000	940	940	710	610	710	710
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	150^{**B}	25^{C}	n/v	<40	**40**[C]	<40	**70**[C]	-	<40	**40**[C]	<70	-	<20	-	**30**[C]	20	<20	10	<10	-	**110**[C]	<20	20	<20
CCME Nickel Guideline					150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tin	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium	µg/L	33^{A} 15^{B}	$5_{s}{}^{E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	$341_{EQ1}{}^{A}$ $128_{EQ2}{}^{B}$	30^{C} 20^{E}	n/v	**30**[E]	<10	**90**[CE]	**340**[ABCE]	-	**80**[CE]	10	**90**[CE]	**120**[CE]	**30**[E]	-	**30**[E]	**40**[CE]	**40**[CE]	**70**[CE]	**100**[CE]	-	**150**[CE]	**50**[CE]	**80**[CE]	**200**[BCE]
CCME Zinc Guideline (EQ1)					142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2
CCME Zinc Guideline (EQ2)					138.7	192.2	368.9	117.8	266.2	266.2	245.4	192.2	208.5	226.2	192.2	100.1	368.9	150.5	313.4	266.2	245.4	177.1	138.7	177.1	177.1
Zirconium	µg/L	n/v	$4_{s}{}^{E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006400402
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																								
Sample Date					24-May-76	30-Jun-76	27-Jul-76	29-Aug-76	30-Sep-76	31-Oct-76	28-Nov-76	28-Dec-76	30-Jan-77	4-Mar-77	30-Mar-77	24-Apr-77	30-May-77	26-Jun-77	24-Jul-77	21-Aug-77	25-Sep-77	20-Oct-77	27-Nov-77	28-Dec-77	29-Jan-78
Sample ID					19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$^{C}_{\leq 16}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ammonium	mg/L	n/v	n/v	n/v	0.02	-	0.04	0.05	0.04	0.01	0.26	0.37	0.54	0.51	0.28	0.11	0.06	0.03	0.05	0.02	0.02	0.05	0.04	0.18	0.65
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	1.2	-	0.6	0.6	2	1.2	1	1.8	1.2	1	1	1	1.6	1.4	1.2	-	1	1.4	1.4	2.6	1.2
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	5.3	-	45	7.4	8.3	8.7	16	16	20	22	20	3.7	9.7	7.7	14.5	13	9.8	7	11.5	14.5	17
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$^{C}_{\geq 9}$	n/v	10	7	**4**^{B}	7	7	11	8	**2**^{B}	**3**^{B}	**3**^{B}	**5**^{B}	7	**4**^{B}	6	**5**^{B}	**5**^{B}	**5**^{B}	**5**^{B}	**5**^{B}	**3**^{B}	**2**^{B}
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	230	-	530	750	870	560	720	790	1,000	345	850	145	435	395	680	750	450	486	510	775	810
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.09	-	0.005	0.005	0.005	0.12	0.09	0.13	0.18	0.005	0.52	0.14	0.005	0.01	0.006	0.005	0.02	0.01	0.09	0.14	0.02
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate + Nitrite (as N)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{t1} ^{B}	n/v	n/v	0.01	-	0.002	0.002	0.003	0.006	0.005	0.01	0.009	0.001	0.01	0.01	0.004	0.01	0.004	0.004	0.01	0.008	0.01	0.01	0.02
Nitrite (as N)	mg/L	0.060^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen (Total)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen Ammonia/Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.82	7.72	7.82	7.77	7.39	7.46	7.4	7.06	-	7.17	-	7.13	-	-	7.86	7.2	7.24	7.26	7	6.96
Phosphate (as P)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total	mg/L	n/v	0.030_{t4} ^{E}	n/v	**0.04**^{E}	-	**0.05**^{E}	**0.04**^{E}	0.03	**0.06**^{E}	**0.12**^{E}	**0.12**^{E}	**0.14**^{E}	**0.2**^{E}	**0.08**^{E}	**0.05**^{E}	**0.09**^{E}	**0.08**^{E}	**0.1**^{E}	**0.06**^{E}	**0.08**^{E}	**0.06**^{E}	**0.05**^{E}	**0.09**^{E}	**0.13**^{E}
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.006	-	0.02	0.02	0.01	0.02	0.08	0.06	0.05	0.04	0.02	0.01	0.02	0.04	0.06	0.03	0.03	0.02	0.01	0.01	0.05
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	12	-	5	5.1	5.9	8.5	11	12	12	14	8.2	20	11	10	3.5	5.4	9.2	7.3	6.9	9.7	11
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Specific Conductance	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	6	8	8	8	9	6	4	4	4	4	4	3	9	9	8	59	79	9	4	4	4
Sulfate	mg/L	n/v	n/v	128-429$^{F}_{t2}$	60	90	160	250	385	19.5	250	-	395	**700**^{F}	324	31	140	130	-	280	177	190	177	-	305
BC MECC Sulfate Guideline (s2)					s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2
Temperature, Lab	deg C	n/v	n/v	n/v	6	23	19	17	8	1	0	0	0	0	0	5	18	19	22	16	12	4	0	0	0
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.66	-	0.38	0.42	0.76	0.68	0.7	1.02	1.02	1.05	0.94	0.84	0.82	0.86	0.78	0.46	1.06	1.2	0.78	0.82	1.26
Total Residue	mg/L	n/v	n/v	n/v	162	-	385	571	730	422	537	626	749	238	620	114	348	267	527	592	399	408	432	589	624
Total Suspended Solids	mg/L	$^{B}_{5N}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Field	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	5.7	-	3	1.9	3.6	7	9	15	16	12	4.6	12	5.3	5.6	3	3.5	5	5.4	7	7.5	6.8
Metals																									
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	2	1	3	3	2	3	4	5	4	**6**	4	2	4	5	-	5	***<10***	-	**40**	4	4
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	$1{,}100_{t3}$ ^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Bismuth	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	µg/L	7.1_{STB} ^{A} 0.37_{LTG} ^{B}	0.2^{C} 0.5_{t12} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08
CWQG Cadmium Guideline (LTG)					0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	4^{+B}	5^{C} 5_{s13} ^{E}	n/v	**20BCE**	**30BCE**	**20BCE**	**20BCE**	**60BCE**	**20BCE**	**<10**	**10BCE**	**<10**	**10BCE**	**10BCE**	**30BCE**	**20BCE**	**20BCE**	-	**<10**	**<10**	**10BCE**	**<10**	**20BCE**	**<10**
CCME Copper Guideline					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	**710**^{BC}	260	160	80	**500**^{BC}	**580**^{BC}	**820**^{BC}	**960**^{BC}	**920**^{BC}	**1,040**^{BC}	**500**^{BC}	**1,060**^{BC}	**570**^{BC}	**1,000**^{BC}	-	**310**^{BC}	**900**^{BC}	**1,100**^{BC}	**840**^{BC}	**1,020**^{BC}	**940**^{BC}
Lead	µg/L	$7\#^{B}$	25_{t14} ^{C} 5_{s15} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Lead Guideline					7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PWQO Lead Guideline (s14)					20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Lithium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$14{,}881_{EQ3}$ ^{A} 710_{EQ4} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	590	-	290	120	130	120	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881
CCME Manganese Guideline (EQ4)					610	610	610	610	860	860	860	940	860	940	860	940	860	860	860	610	860	860	860	940	1000
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	150^{++B}	25^{C}	n/v	<20	10	10	20	<10	<10	<10	<10	<10	20	10	<10	**40**^{C}	<20	-	<20	<20	<20	**30**^{C}	<20	<20
CCME Nickel Guideline					150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tin	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium	µg/L	33^{A} 15^{B}	5_{s} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	341_{EQ1} ^{A} 128_{EQ2} ^{B}	30^{C} 20^{E}	n/v	**30**^{E}	<10	<10	<10	**60**^{CE}	**40**^{CE}	**70**^{CE}	-	**30**^{E}	**40**^{CE}	**80**^{CE}	**50**^{CE}	**40**^{CE}	**40**^{CE}	-	<20	**70**^{CE}	**40**^{CE}	**150**^{CE}	**180**^{CE}	**60**^{CE}
CCME Zinc Guideline (EQ1)					142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2
CCME Zinc Guideline (EQ2)					136.5	148.1	136.5	142.1	193.7	183	192.2	253.5	192.2	231.8	192.2	239.5	192.2	192.2	192.2	132.1	226.2	218.9	215.4	266.2	275.1
Zirconium	µg/L	n/v	4_{s} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006400402
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																									
Sample Date					1-Mar-78	25-Mar-78	30-Apr-78	22-May-78	25-Jun-78	30-Jul-78	27-Aug-78	24-Sep-78	29-Oct-78	26-Nov-78	27-Dec-78	27-Jan-79	25-Feb-79	31-Mar-79	6-May-79	3-Jun-79	2-Jul-79	3-Aug-79	3-Sep-79	8-Oct-79	4-Nov-79
Sample ID					19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02
General Chemistry																									
Alkalinity, Total (as CaCO3)	mg/L	n/v	$^{C}_{\leq 16}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ammonium	mg/L	n/v	n/v	n/v	0.57	0.91	0.08	0.004	0.02	0.02	0.04	0.03	0.01	0.06	-	0.31	0.39	0.41	0.15	0.02	0.03	0.06	0.04	0.01	0.01
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	1.6	1.4	1.5	1	1	1.2	0.5	0.6	1.6	1	-	0.2	3.6	1	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	18.5	18	9.4	8.1	5.3	6.9	8.7	3.5	6.5	11	-	23.5	17	20	4.05	5.35	4.9	10	4.55	2.95	6.5
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$^{C}_{\geq 9}$	n/v	**2**^{B}	**0**^{B}	7	**3**^{B}	**4**^{B}	**3**^{B}	**4**^{B}	7	8	**2**^{B}	**3**^{B}	**2**^{B}	**3**^{B}	**2**^{B}	7	8	-	8	**3**^{B}	9	6
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	970	1,025	365	285	260	290	350	360	360	490	-	870	300	790	162	280	280	139	650	315	308
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.005	0.005	0.55	0.25	0.08	0.06	0.005	0.02	0.14	0.31	-	0.43	0.002	0.28	0.14	0.16	0.07	0.006	0.002	0.04	0.12
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate + Nitrite (as N)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{t1} ^{B}	n/v	n/v	0.005	0.004	0.01	0.09	0.01	0.01	0.006	0.008	0.01	0.009	-	0.01	0.003	0.03	0.01	0.01	0.01	0.004	0.003	0.009	0.009
Nitrite (as N)	mg/L	0.060^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen (Total)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen Ammonia/Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	6.85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphate (as P)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total	mg/L	n/v	0.030_{t4} ^{E}	n/v	**0.16**^{E}	**0.21**^{E}	**0.08**^{E}	**0.05**^{E}	**0.04**^{E}	**0.08**^{E}	**0.07**^{E}	**0.04**^{E}	**0.04**^{E}	**0.04**^{E}	-	**0.09**^{E}	**0.13**^{E}	**0.1**^{E}	**0.04**^{E}	**0.06**^{E}	0.01	**0.07**^{E}	**0.04**^{E}	0.03	0.03
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.04	0.03	0.01	0.01	0.02	0.04	0.03	0.01	0.01	0.02	-	0.03	0.03	0.02	0.01	0.009	0.01	0.04	0.008	0.005	0.008
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	11	11	22	10	7.6	7.9	3	6.4	7	7	-	9	9	6	19	15	17	2	4	6	5
Residue-Filterable	mg/L	n/v	n/v	n/v	-	818	237	185	169	189	228	234	234	393	-	662	195	540	105	182	182	90	497	205	200
Specific Conductance	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	4	4	4	6	9	9	8	98	9	4	4	4	4	4	6	6	9	89	57	9	9
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}$ $_{t2}$	**460**^{F}	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC MECC Sulfate Guideline (s2)					s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2
Temperature, Lab	deg C	n/v	n/v	n/v	0	0	0	11	17	19	18	13	3	0	0	1	0	0	2	16	18	22	17	6	3
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	1.26	1.6	1.06	0.77	0.8	0.92	0.86	0.88	0.76	0.74	-	1.02	1.1	1.1	0.77	0.88	0.33	0.75	0.54	0.98	0.75
Total Residue	mg/L	n/v	n/v	n/v	782	829	259	195	177	197	231	240	241	400	-	671	204	546	124	197	199	92	501	211	205
Total Suspended Solids	mg/L	$^{B}_{5N}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Field	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	12	9.7	14	4.4	5.5	4.5	1.9	5.3	5.5	7	-	6.1	8	4	11	13	5.6	2.2	3.8	5	5
Metals																									
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	-	**660**^{B}	-	**860**^{B}	**620**^{B}	**530**^{B}	-	**520**^{B}	**480**^{B}	**600**^{B}	**2,000**^{B}	**750**^{B}	**600**^{B}	**380**^{B}	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	**6**	4	-	4	3	5	-	2	3	3	**6**	2	4	<1	1	<1	2	**20**	1	<1	2
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	$1{,}100_{t3}$ ^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Bismuth	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	µg/L	7.1_{STB} ^{A} 0.37_{LTG} ^{B}	0.2^{C} 0.5_{t12} ^{E}	n/v	-	**<5**	-	**<5**	**<5**	**<5**	-	**<10**	**<5**	**5**^{BCE}	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**
CWQG Cadmium Guideline (STB)					7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08
CWQG Cadmium Guideline (LTG)					0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	<20	-	<20	<40	<40	-	<20	<20	20	150	<20	<20	20	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	***<20***	-	***<20***	***<20***	***<20***	-	***<40***	***<20***	***<20***	***<20***	**20**^{E}	***<20***	***<20***	***<20***	***<20***	***<20***	***<20***	***<20***	***<20***	***<20***
Copper	µg/L	4^{+B}	5^{C} 5_{t13} ^{E}	n/v	**20BCE**	**<10**	-	**40BCE**	**<10**	**20BCE**	-	**<20**	**<10**	**40BCE**	**320BCE**	**70BCE**	**240BCE**	**10BCE**	**10BCE**	**20BCE**	**<10**	**20BCE**	**<10**	**<10**	**<10**
CCME Copper Guideline					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	**1,500**^{BC}	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	µg/L	$7\#^{B}$	25_{t14} ^{C} 5_{t15} ^{E}	n/v	-	**<30**	-	**<30**	**<30**	**<30**	-	**<50**	**<30**	**<30**	**<30**	**<30**	**<30**	**<30**	**<30**	**<30**	**<30**	**<30**	**<30**	**<30**	**<30**
CCME Lead Guideline					7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PWQO Lead Guideline (s14)					20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Lithium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$14{,}881_{EQ3}$ ^{A} 710_{EQ4} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881
CCME Manganese Guideline (EQ4)					1000	860	860	860	860	860	860	860	860	860	860	860	860	860	860	860	860	860	860	860	860
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	150^{**B}	25^{C}	n/v	<20	<20	-	<20	<20	<20	-	<60	<20	20	<20	<20	<20	<20	10	10	<20	**50**^{C}	<20	<20	<20
CCME Nickel Guideline					150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tin	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium	µg/L	33^{A} 15^{B}	5_{a}^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	341_{EQ1} ^{A} 128_{EQ2} ^{B}	30^{C} 20^{E}	n/v	20	20	-	**50**^{CE}	20	20	-	<20	**60**^{CE}	**60**^{CE}	**240**^{BCE}	**80**^{CE}	**60**^{CE}	**50**^{CE}	<10	10	<10	<10	<10	<10	**30**^{E}
CCME Zinc Guideline (EQ1)					142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2
CCME Zinc Guideline (EQ2)					300.9	192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2
Zirconium	µg/L	n/v	4_{a}^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006400402
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																								
Sample Date					2-Dec-79	5-Jan-80	23-Mar-80	2-Jun-80	9-Jun-80	16-Jun-80	23-Jun-80	1-Jul-80	7-Jul-80	14-Jul-80	21-Jul-80	28-Jul-80	5-Aug-80	11-Aug-80	18-Aug-80	25-Aug-80	14-Oct-80	18-Dec-80	16-Feb-81	11-Mar-81	2-Jun-81
Sample ID					19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$^{C}_{\leq 16}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48
Ammonium	mg/L	n/v	n/v	n/v	0.04	0.12	0.35	0.09	0.07	0.08	0.15	0.14	0.17	0.05	0.18	0.08	0.15	0.18	0.17	0.18	0.05	0.05	0.28	0.24	0.04
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	1.8	-	1.6	1.2	2.6	1.6	1.6	0.8	1.2	1.6	1.6	1	1.8	0.6	0.7	2.4	0.8	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	7.15	12.5	17	7.15	7.1	7.2	8.05	10.5	3.05	4.15	5.25	6.7	8	5.7	24	6.85	8	13.5	19.5	22	-
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}{}^{B}$	$^{C}_{\geq 9}$	n/v	11	-	**0**^{B}	9.6	8.6	9	8.3	7.8	8	6.6	6.4	5.6	5.6	**5.2**^{B}	6.1	6	11.7	-	**0.9**^{B}	**0.8**^{B}	10.7
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	406	560	1,160	395	500	420	500	650	295	335	430	600	850	800	600	600	440	475	760	760	310
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.34	0.42	0.002	0.02	0.06	0.01	0.005	0.005	0.1	0.002	0.002	0.006	0.006	0.01	0.005	0.06	0.14	0.62	0.08	0.34	0.2
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.17
Nitrate + Nitrite (as N)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	$0.20_{t1}{}^{B}$	n/v	n/v	0.01	0.01	0.003	0.01	0.007	0.007	0.005	0.005	0.01	0.008	0.008	0.009	0.004	0.006	0.005	0.008	0.009	0.15	**0.35**^{B}	0.05	0.02
Nitrite (as N)	mg/L	0.060^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen (Total)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen Ammonia/Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.52
Phosphate (as P)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total	mg/L	n/v	$0.030_{t4}{}^{E}$	n/v	**0.06**^{E}	**0.1**^{E}	**0.22**^{E}	**0.07**^{E}	**0.05**^{E}	**0.06**^{E}	**0.07**^{E}	**0.05**^{E}	**0.06**^{E}	**0.05**^{E}	**0.05**^{E}	**0.06**^{E}	**0.07**^{E}	**0.05**^{E}	**0.08**^{E}	**0.04**^{E}	**0.05**^{E}	**0.12**^{E}	**0.18**^{E}	**0.07**^{E}	**0.06**^{E}
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.02	0.05	0.02	0.003	0.006	0.003	0.005	0.003	0.007	0.009	0.01	0.02	0.02	0.001	0.04	0.002	0.01	0.05	0.09	0.02	0.01
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	22	8	11	23	12	13	18	11	20	17	9	6	8	9	3	9	17	12	10	8	9
Residue-Filterable	mg/L	n/v	n/v	n/v	264	428	977	257	415	273	407	514	192	218	280	461	653	658	445	500	339	385	575	561	202
Specific Conductance	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	4	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}{}_{t2}$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	86
BC MECC Sulfate Guideline (s2)					s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2
Temperature, Lab	deg C	n/v	n/v	n/v	0	0	0	16.2	11.8	14	17	17.6	16.1	20.8	22.8	20.2	21.3	20	16.8	21.5	0.5	-	0	0	8.5
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.65	0.7	1.25	0.88	0.82	0.96	0.96	0.75	1.32	0.98	1.13	0.73	0.8	1	0.84	1.27	0.82	0.83	0.9	0.82	0.78
Total Residue	mg/L	n/v	n/v	n/v	286	436	988	280	427	286	425	525	112	235	289	467	661	667	448	509	356	397	585	569	-
Total Suspended Solids	mg/L	$^{B}_{5N}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Field	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	5	9.2	7.6	15	8	5.6	6.7	5.3	9.3	5.3	4.2	2.9	3.8	2.3	0.57	3.8	4.8	9.7	7.3	3.7	-
Metals																									
Aluminum	µg/L	$5/100_{VAR1}{}^{B}$	n/v	n/v	-	-	-	-	**860**^{B}	**820**^{B}	**860**^{B}	**340**^{B}	**1,600**^{B}	**1,000**^{B}	**270**^{B}	**260**^{B}	**190**^{B}	**200**^{B}	40	**300**^{B}	**510**^{B}	-	**470**^{B}	**290**^{B}	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	2	**8**	2	-	1	1	<1	<1	1	2	2	2	2	1	**10**	1	2	-	5	4	-
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	$1{,}100_{t3}{}^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Bismuth	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	µg/L	$7.1_{STB}{}^{A}$ $0.37_{LTG}{}^{B}$	0.2^{C} $0.5_{t12}{}^{E}$	n/v	**<5**	**<5**	**<5**	-	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**2**^{BCE}	**0.3**^{C}	<0.2	**<1**	-	-	-	-	-
CWQG Cadmium Guideline (STB)					7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08
CWQG Cadmium Guideline (LTG)					0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	<20	-	<20	<20	<20	<20	20	<20	<20	<2	7	2	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	***<20***	***<20***	***<20***	-	***<20***	***<20***	***<20***	***<20***	***<20***	***<20***	***<20***	***<20***	***<20***	**3**^{E}	**<2**	**<2**	-	-	-	-	-
Copper	µg/L	4^{+B}	5^{C} $5_{s13}{}^{E}$	n/v	**10BCE**	**30BCE**	**20BCE**	-	**30BCE**	**20BCE**	**<10**	**<10**	**<10**	**10BCE**	**20BCE**	**<10**	**7BCE**	4	**9BCE**	**10BCE**	**9BCE**	-	**8BCE**	**10BCE**	-
CCME Copper Guideline					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**790**^{BC}
Lead	µg/L	$7\#^{B}$	$25_{s14}{}^{C}$ $5_{s15}{}^{E}$	n/v	**<30**	**<30**	**<30**	-	**<30**	**<30**	**<30**	**<30**	**<30**	**<30**	**<30**	**<30**	**<6**	5	<3	<3	5	-	<2	<3	-
CCME Lead Guideline					7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PWQO Lead Guideline (s14)					20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Lithium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$14{,}881_{EQ3}{}^{A}$ $710_{EQ4}{}^{B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881
CCME Manganese Guideline (EQ4)					860	860	860	860	860	860	860	860	860	860	860	860	860	860	860	860	860	860	860	860	710
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	150^{**B}	25^{C}	n/v	<50	<20	<20	-	<20	<20	<20	<20	<20	<20	<20	<20	9	4	20	6	6	-	10	20	-
CCME Nickel Guideline					150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tin	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium	µg/L	33^{A} 15^{B}	$5_{s}{}^{E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	$341_{EQ1}{}^{A}$ $128_{EQ2}{}^{B}$	30^{C} 20^{E}	n/v	**70**^{CE}	**30**^{E}	**30**^{E}	-	**100**^{CE}	**70**^{CE}	**40**^{CE}	**30**^{E}	**100**^{CE}	**50**^{CE}	**40**^{CE}	**80**^{CE}	10	**270**^{BCE}	8	**290**^{BCE}	**520**^{ABCE}	-	**90**^{CE}	**80**^{CE}	-
CCME Zinc Guideline (EQ1)					142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2
CCME Zinc Guideline (EQ2)					192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2	192.2	174.3
Zirconium	µg/L	n/v	$4_{s}{}^{E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006400402
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																							
Sample Date					11-Jun-81	18-Jun-81	25-Jun-81	29-Jun-81	9-Jul-81	16-Jul-81	23-Jul-81	4-Aug-81	13-Aug-81	20-Aug-81	27-Aug-81	2-Oct-81	5-Nov-81	2-Dec-81	7-Jan-82	2-Feb-82	24-Feb-82	5-May-82	8-Jun-82	8-Jul-82	3-Aug-82
Sample ID					19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402	HIST_19006400402
General Chemistry																									
Alkalinity, Total (as CaCO3)	mg/L	n/v	$^{C}_{\leq 16}$	n/v	58	60	52	46	68	78	79	85	110	104	109	101	-	72	50	49	69	23.8	40.7	57.6	86.6
Ammonium	mg/L	n/v	n/v	n/v	0.008	0.02	0.004	0.002	0.006	0.05	0.006	0.004	0.01	0.06	0.008	0.04	0.01	0.05	0.09	0.14	0.4	-	-	-	-
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$^{C}_{\geq 9}$	n/v	8.8	7.3	9	8.9	5.8	**4.7**^{B}	**5.2**^{B}	8.5	6.5	8.2	7.8	8.4	9.8	9.35	6.4	**3**^{B}	**1.4**^{B}	10	7.45	**5**^{B}	6.4
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	345	440	385	360	460	480	580	900	880	1,040	1,020	1,180	-	750	1,010	1,090	1,050	133	243	563	634
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.22	0.28	0.11	0.13	0.18	0.005	0.16	0.17	0.04	0.005	0.05	0.005	0.3	0.45	0.79	0.08	0.19	0.29	0.09	0.04	0.03
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	0.27	0.29	0.12	0.13	0.24	0.08	0.17	0.17	0.09	0.005	0.06	0.01	0.31	0.48	0.85	0.16	0.21	-	-	-	-
Nitrate + Nitrite (as N)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{t1} ^{B}	n/v	n/v	0.04	0.005	0.006	0.007	0.06	0.08	0.003	0.003	0.04	0.002	0.01	0.008	0.01	0.03	0.06	0.07	0.01	-	-	-	-
Nitrite (as N)	mg/L	0.060^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen (Total)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen Ammonia/Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.58	7.44	7.46	7.31	7.46	7.44	7.39	7.5	7.54	7.63	7.52	7.72	-	7.67	6.59	7.11	6.57	6.68	7.15	7.54	7.53
Phosphate (as P)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total	mg/L	n/v	0.030_{t4} ^{E}	n/v	**0.07**^{E}	**0.08**^{E}	**0.06**^{E}	**0.06**^{E}	**0.11**^{E}	**0.12**^{E}	**0.11**^{E}	**0.07**^{E}	**0.08**^{E}	**0.07**^{E}	**0.08**^{E}	**0.05**^{E}	-	**0.08**^{E}	**0.21**^{E}	**0.18**^{E}	-	**0.04**^{E}	**0.13**^{E}	**0.09**^{E}	**0.09**^{E}
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.03	0.03	0.02	0.01	0.07	0.06	0.05	0.03	0.05	0.03	0.05	0.03	0.02	0.04	0.05	0.03	0.09	-	-	-	-
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	11	21	11	11	3	5	6	8.6	12.5	7	8.7	-	-	8.2	62.4	8.8	10.3	-	-	-	-
Residue-Filterable	mg/L	n/v	n/v	n/v	224	305	250	234	355	378	413	724	659	810	817	-	9	527	808	894	836	-	-	-	-
Specific Conductance	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	8	8	8	8	8	8	8	8	8	8	-	-	-	-	-	-	-	-	-	8	8
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}$ $_{t2}$	109	135	113	120	114	152	189	366	330	**433**^{F}	**448**^{F}	**483**^{F}	153	297	**500**^{F}	**528**^{F}	**475**^{F}	27.8	67	228	215
BC MECC Sulfate Guideline (s2)					s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2
Temperature, Lab	deg C	n/v	n/v	n/v	12	15.5	10.5	12	23.5	20.5	19	20	19	17	16.5	6	4	3.5	0.5	0.5	1	7	18	18.5	18.5
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.78	0.72	0.7	0.72	0.65	0.85	0.7	0.7	0.6	0.45	0.38	0.3	0.78	0.75	1.15	1	-	0.68	1.4	0.78	0.83
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids	mg/L	$^{B}_{5N}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Field	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18.8	10.1	5.8	4.7
Metals																									
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	**480**^{B}	**500**^{B}	**590**^{B}	**340**^{B}	**560**^{B}	20	**260**^{B}	**350**^{B}	**250**^{B}	**310**^{B}	**450**^{B}	**130**^{B}	**420**^{B}	**430**^{B}	**6,100**^{B}	**350**^{B}	**470**^{B}	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	5	100	5	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	<1	5
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	$1{,}100_{s3}$ ^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Bismuth	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	µg/L	7.1_{STB} ^{A} 0.37_{LTG} ^{B}	0.2^{C} 0.5_{t12} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08
CWQG Cadmium Guideline (LTG)					0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	4^{+B}	5^{C} 5_{s13} ^{E}	n/v	**6BCE**	**6BCE**	**7BCE**	**6BCE**	**7BCE**	5	**8BCE**	**10BCE**	**10BCE**	**10BCE**	**6BCE**	**6BCE**	-	**5B**	**30BCE**	**10BCE**	**20BCE**	**8BCE**	**7BCE**	**20BCE**	**10BCE**
CCME Copper Guideline					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	**800**^{BC}	**750**^{BC}	**780**^{BC}	**900**^{BC}	**900**^{BC}	**800**^{BC}	**500**^{BC}	**380**^{BC}	260	**340**^{BC}	290	210	-	**640**^{BC}	**2,650**^{BC}	**610**^{BC}	**810**^{BC}	**1,050**^{BC}	**870**^{BC}	**450**^{BC}	**430**^{BC}
Lead	µg/L	$7\#^{B}$	25_{s14} ^{C} 5_{s15} ^{E}	n/v	<3	**10**^{BE}	**7**^{E}	4	**10**^{BE}	<3	**30**^{BCE}	**10**^{BE}	4	<3	<3	**30**^{BCE}	-	**10**^{BE}	**10**^{BE}	<3	<3	<3	3	<3	**50**^{BCE}
CCME Lead Guideline					7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PWQO Lead Guideline (s14)					20	20	20	20	20	20	20	25	25	25	25	25	20	20	20	20	20	10	10	20	25
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Lithium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$14{,}881_{EQ3}$ ^{A} 710_{EQ4} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881
CCME Manganese Guideline (EQ4)					710	860	860	860	860	860	860	710	710	710	710	610	860	710	1000	940	1000	1000	940	710	710
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	150^{**B}	25^{C}	n/v	5	7	5	3	3	3	8	6	6	6	8	2	-	8	20	10	10	2	**60**^{C}	10	4
CCME Nickel Guideline					150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tin	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium	µg/L	33^{A} 15^{B}	5_{s} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	341_{EQ1} ^{A} 128_{EQ2} ^{B}	30^{C} 20^{E}	n/v	10	10	10	10	10	10	10	10	10	10	20	10	-	20	**160**^{ACE}	**5**^{CE}	**40**^{CE}	20	10	**40**^{CE}	20
CCME Zinc Guideline (EQ1)					142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2
CCME Zinc Guideline (EQ2)					166	186	183	206.8	183	186	193.7	177.1	171.5	159.3	174.3	148.1	192.2	154.2	371.9	243.4	378	345.6	235.6	171.5	172.9
Zirconium	µg/L	n/v	4_{s} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006400402
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																								
Sample Date					30-Aug-82	14-Oct-82	4-Nov-82	1-Dec-82	10-Jan-83	2-Feb-83	2-Mar-83	8-Apr-83	3-May-83	2-Jun-83	19006400402 4-Jul-83	10-Aug-83	2-Sep-83	29-Sep-83	2-Nov-83	5-Jan-84	6-Feb-84	2-Mar-84	3-Apr-84	8-May-84	1-Jun-84
Sample ID					19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$^{C}_{\leq 16}$	n/v	95.4	48.8	52.7	64.8	79	45.6	7.4	123.7	21.7	35.2	51.5	91.4	53.4	54.9	50	59.1	143.9	136.9	51.7	44.7	51.8
Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}{}^{B}$	$^{C}_{\geq 9}$	n/v	8.1	-	12.3	9.4	-	7	-	-	10.6	-	-	-	-	-	10	-	-	20	9.4	9.8	-
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	1,020	412	448	486	766	1,012	1,119	715	162	235	376	925	809	421	456	869	811	793	725	659	397
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.005	0.21	0.19	0.26	0.005	0.005	0.005	1.26	0.39	0.36	0.07	0.14	0.01	0.13	0.23	0.3	0.2	0.24	0.46	0.3	0.17
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate + Nitrite (as N)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	$0.20_{31}{}^{B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite (as N)	mg/L	0.060^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen (Total)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen Ammonia/Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.64	8.35	7.22	6.9	6.92	6.9	**6.39^{BC}**	7.22	6.9	7.02	7.14	7.65	7.14	7.23	7.47	6.73	7.92	7.87	6.7	7.16	7.21
Phosphate (as P)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total	mg/L	n/v	$0.030_{\leq 4}{}^{E}$	n/v	**0.07^{E}**	**0.06^{E}**	**0.04^{E}**	**0.04^{E}**	0.02	**0.23^{E}**	**0.46^{E}**	**0.1^{E}**	**0.06^{E}**	0.03	**0.7^{E}**	**0.06^{E}**	**0.13^{E}**	**0.08^{E}**	**0.06^{E}**	**0.05^{E}**	**0.24^{E}**	0.02	**0.1^{E}**	**0.05^{E}**	**0.06^{E}**
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Specific Conductance	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}_{\leq 2}$	**453.2^{F}**	134.5	136.3	148.2	306.4	**483.1^{F}**	**496.25^{F}**	106.05	44.5	74.4	128.4	415.5	393.5	146	164	319.5	212.2	234.2	**593.6^{F}**	53.11	133.6
BC MECC Sulfate Guideline (s2)					s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2
Temperature, Lab	deg C	n/v	n/v	n/v	13.5	9	7	1	2	1	-	-	2	-	-	-	-	-	3	-	-	0.5	5.5	12.3	-
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.54	0.94	0.71	0.73	1.65	0.77	1.21	0.91	-	0.65	0.87	0.3	0.82	0.86	0.79	0.92	1.92	0.65	0.8	0.9	0.8
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids	mg/L	$^{B}_{5N}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Field	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	3.1	5.4	4.4	5.8	4	11.8	8.1	4.2	6.6	5.2	6.1	3.6	3.8	8.1	6.8	7.7	38	5.5	13.5	13.4	66
Metals																									
Aluminum	µg/L	$5/100_{VAR1}{}^{B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	5	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	4	3	3	3	3	4	3	5	3	2	<1	5	1	3	3	3	4	**8**	4	2	2
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	$1{,}100_{\leq 3}{}^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Bismuth	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	µg/L	$7.1_{STB}{}^{A}$ $0.37_{LTG}{}^{B}$	0.2^{C} $0.5_{\leq 12}{}^{E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08
CWQG Cadmium Guideline (LTG)					0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	4^{*B}	5^{C} $5_{\leq 13}{}^{E}$	n/v	**10BCE**	**5B**	**10BCE**	**20BCE**	**10BCE**	**10BCE**	**10BCE**	**160BCE**	**30BCE**	**20BCE**	2	**80BCE**	**5B**	**6BCE**	**10BCE**	**10BCE**	**7BCE**	**10BCE**	**30BCE**	**10BCE**	**10BCE**
CCME Copper Guideline					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	150	**770^{BC}**	**550^{BC}**	**550^{BC}**	**680^{BC}**	**800^{BC}**	**640^{BC}**	**450^{BC}**	**1,020^{BC}**	**570^{BC}**	**570^{BC}**	220	**370^{BC}**	**1,120^{BC}**	270	**750^{BC}**	**3,100^{BC}**	90	**780^{BC}**	**900^{BC}**	**860^{BC}**
Lead	µg/L	$7\#^{B}$	$25_{\leq 14}{}^{C}$ $5_{\leq 15}{}^{E}$	n/v	**20^{BE}**	3	**10^{BE}**	**10^{BE}**	<3	<3	<3	**140^{BCE}**	**10^{BE}**	<3	<3	<3	<3	<3	**10^{BE}**	**9^{BE}**	<3	3	<3	<3	**20^{BE}**
CCME Lead Guideline					7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PWQO Lead Guideline (s14)					25	20	20	20	20	20	5	25	10	10	20	25	20	20	20	20	25	25	20	20	20
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Lithium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$14{,}881_{EQ3}{}^{A}$ $710_{EQ4}{}^{B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881
CCME Manganese Guideline (EQ4)					710	460	860	1000	1000	1000	1000	860	1000	940	940	710	940	860	860	1000	610	610	1000	940	860
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	150^{**B}	25^{C}	n/v	5	10	7	10	8	<1	10	**30^{C}**	6	7	<2	3	2	20	9	6	**110^{C}**	20	10	10	9
CCME Nickel Guideline					150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tin	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium	µg/L	33^{A} 15^{B}	$5_{\leq 8}{}^{E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	$341_{EQ1}{}^{A}$ $128_{EQ2}{}^{B}$	30^{C} 20^{E}	n/v	10	10	**100^{CE}**	**40^{CE}**	**40^{CE}**	20	**30^{E}**	**40^{CE}**	**40^{CE}**	**50^{CE}**	3	**180^{BCE}**	20	20	**50^{CE}**	**90^{CE}**	**40^{CE}**	8	**60^{CE}**	20	20
CCME Zinc Guideline (EQ1)					142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2
CCME Zinc Guideline (EQ2)					158	88.6	222.5	288.8	284.2	288.8	437.7	222.5	288.8	261.9	237.5	156.7	237.5	220.7	181.5	331.8	125.8	131	340	233.7	224.4
Zirconium	µg/L	n/v	$4_{\leq}{}^{E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006400402
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																								
Sample Date																								
Sample ID																	19006400402							
Laboratory Work Order	Units	CCME	PWQO	BC MECC	6-Jul-84 19006400402 HIST_190064004 02	1-Aug-84 19006400402 HIST_190064004 02	3-Dec-84 19006400402 HIST_190064004 02	2-Jan-85 19006400402 HIST_190064004 02	1-Feb-85 19006400402 HIST_190064004 02	1-Mar-85 19006400402 HIST_190064004 02	1-May-85 19006400402 HIST_190064004 02	4-Jun-85 19006400402 HIST_190064004 02	3-Jul-85 19006400402 HIST_190064004 02	1-Aug-85 19006400402 HIST_190064004 02	3-Sep-85 19006400402 HIST_190064004 02	30-Sep-85 19006400402 HIST_190064004 02	1-Nov-85 19006400402 HIST_190064004 02	4-Dec-85 19006400402 HIST_190064004 02	31-Dec-85 19006400402 HIST_190064004 02	3-Feb-86 19006400402 HIST_190064004 02	3-Mar-86 19006400402 HIST_190064004 02	30-Apr-86 19006400402 HIST_190064004 02	3-Jun-86 19006400402 HIST_190064004 02	30-Jun-86 19006400402 HIST_190064004 02	8-Aug-86 19006400402 HIST_190064004 02
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$^{C}_{\leq 16}$	n/v	61	68.5	-	70.6	51.5	46.8	34.1	43.6	70.4	58.8	79.8	67.7	51.3	83	66.7	50.1	54.3	30.1	51.4	64.4	67
Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$^{C}_{\geq 9}$	n/v	-	-	10.4	6	**2**^{B}	8.5	12	12.2	15.4	8	-	-	-	-	**3**^{B}	-	**3**^{B}	8	8.9	6.7	8.4
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	354	442	-	862	1,290	1,640	145	417	890	547	1,085	1,480	599	757	1,159	1,410	1,500	193	525	903	886
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.12	0.03	-	0.43	0.3	0.47	0.24	0.27	0.08	0.1	0.11	0.23	0.22	0.45	0.56	0.57	0.57	0.18	0.22	0.21	0.005
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate + Nitrite (as N)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{t1} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite (as N)	mg/L	0.060^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen (Total)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen Ammonia/Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.25	7.4	-	6.98	6.54	**8.9**^{C}	7.41	7.65	7.78	7.54	7.69	7.5	7.39	7.86	7.42	7.08	7.24	7.41	7.56	8.05	7.81
Phosphate (as P)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total	mg/L	n/v	0.030_{t4} ^{E}	n/v	**0.05**^{E}	**0.04**^{E}	-	**0.09**^{E}	**0.06**^{E}	**0.07**^{E}	**0.05**^{E}	**0.05**^{E}	0.02	0.01	0.02	0.03	**0.04**^{E}	0.03	0.03	**0.05**^{E}	**0.04**^{E}	0.03	**0.07**^{E}	**0.06**^{E}	0.02
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Specific Conductance	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	-	-	-	4	4	4	3	-	-	8	-	-	-	-	4	4	-	3	-	-	-
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}$ $_{t2}$	85.56	138.9	-	356.05	**638.9**^{F}	**641.25**^{F}	25.6	140.8	151	197.95	**463.1**^{F}	**813**^{F}	245	271	**582**^{F}	**775**^{F}	**793**^{F}	50.75	189	427	416
BC MECC Sulfate Guideline (s2)					s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2
Temperature, Lab	deg C	n/v	n/v	n/v	-	-	1	1	1	1	0.5	9	21	15.5	13	8	2.5	-	0.5	0.5	0.5	6	13	18.5	18.5
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.87	0.9	-	1.25	1.34	2.15	0.85	0.85	0.85	0.32	0.5	0.54	0.83	1.16	1.05	1.01	1.43	0.79	0.95	0.67	0.51
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids	mg/L	$^{B}_{5N}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Field	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	12.5	7.9	-	14.6	11.9	12.6	14.9	13.8	3.9	8.3	7.4	16.1	11.5	5.6	3.9	4.7	3.7	13.4	14.7	17	2.3
Metals																									
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	5	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	3	2	2	<1	3	2	4	3	2	2	1	2	2	3	2	2	3	<1	-	2	1
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	$1{,}100_{s3}$ ^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Bismuth	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	µg/L	7.1_{STB} ^{A} 0.37_{LTG} ^{B}	0.2^{C} 0.5_{t12} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08
CWQG Cadmium Guideline (LTG)					0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	4^{+B}	5^{C} 5_{s13} ^{E}	n/v	**10BCE**	**10BCE**	**30BCE**	**40BCE**	**20BCE**	**50BCE**	**50BCE**	**20BCE**	**10BCE**	**40BCE**	**30BCE**	**<10**	**50BCE**	**70BCE**	<1	-	-	-	**20BCE**	**10BCE**	**10BCE**
CCME Copper Guideline					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	**950**^{BC}	**840**^{BC}	-	**1,480**^{BC}	**610**^{BC}	280	**1,110**^{BC}	**1,020**^{BC}	180	**820**^{BC}	**320**^{BC}	<10	**920**^{BC}	**1,400**^{BC}	<1	-	-	-	**1,000**^{BC}	**370**^{BC}	170
Lead	µg/L	$7\#^{B}$	25_{s14} ^{C} 5_{s15} ^{E}	n/v	5	**100**^{BCE}	**<30**	**<30**	**<30**	**<30**	**<30**	**<30**	**<30**	**<30**	**<30**	**<30**	**<30**	**<30**	<3	-	-	-	3	<3	<3
CCME Lead Guideline					7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PWQO Lead Guideline (s14)					20	20	20	20	20	20	10	20	20	20	20	20	20	25	20	20	20	10	20	20	20
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Lithium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$14{,}881_{EQ3}$ ^{A} 710_{EQ4} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881
CCME Manganese Guideline (EQ4)					860	860	860	1000	1000	290	860	710	610	710	710	710	860	610	860	940	860	860	710	460	610
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	150^{**B}	25^{C}	n/v	10	10	10	20	10	<10	10	10	<10	10	<10	<10	<10	<10	<2	-	-	-	20	10	5
CCME Nickel Guideline					150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tin	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium	µg/L	33^{A} 15^{B}	5_{s} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	341_{EQ1} ^{A} 128_{EQ2} ^{B}	30^{C} 20^{E}	n/v	**30**^{E}	**50**^{CE}	**40**^{CE}	**140**^{CE}	**50**^{CE}	20	**30**^{E}	**50**^{CE}	20	**60**^{CE}	20	**50**^{CE}	**30**^{E}	**60**^{CE}	<1	-	-	-	**70**^{CE}	**30**^{E}	20
CCME Zinc Guideline (EQ1)					142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2
CCME Zinc Guideline (EQ2)					217.2	192.2	192.2	270.6	387.3	56.6	190.6	156.7	141	171.5	151.7	177.1	193.7	132.1	189.1	249.4	218.9	190.6	168.7	113.1	137.6
Zirconium	µg/L	n/v	4_{s} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006400402
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																								
Sample Date					8-Sep-86	15-Oct-86	29-Dec-86	2-Feb-87	2-Mar-87	1-Apr-87	1-May-87	1-Jun-87	2-Jul-87	31-Jul-87	1-Sep-87	18-May-88	20-Jun-88	20-Jul-88	22-Sep-88	28-Oct-88	22-Nov-88	20-Feb-89	27-Mar-89	23-Apr-89	28-May-89
Sample ID					19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\leq 16}^{C}$	n/v	39.4	27.9	82.4	83.6	55.2	23.6	32.2	51.8	54.2	94.9	66.9	32	67	62	69	53	38	79	63	53	40
Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	0.57	0.05	0.1	0.21	0.02	0.04	0.08	0.03	0.03	0.03	0.02	0.03	0.51	0.56	0.21	0.09
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$_{\geq 9}^{C}$	n/v	-	9.4	6	-	**5**^{B}	9	-	6.3	-	7.4	8.4	-	9.5	8	8	11.5	14	**2**^{B}	**4**^{B}	**4.5**^{B}	**5**^{B}
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	531	491	1,041	1,199	1,490	1,131	436	593	701	702	802	261	865	1,060	695	570	398	1,360	1,880	606	368
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.11	0.25	0.7	0.72	0.5	1.03	0.31	0.26	0.12	0.15	0.18	0.21	0.16	0.06	0.28	0.26	0.27	0.88	1.27	0.74	0.25
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate + Nitrite (as N)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{T1} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite (as N)	mg/L	0.060^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen (Total)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen Ammonia/Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.44	7.07	7.6	7.6	7.16	6.92	7.32	7.58	7.42	7.75	7.69	6.9	7.5	7.2	7.2	7.2	6.9	6.9	6.9	6.6	7
Phosphate (as P)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total	mg/L	n/v	0.030_{t4} ^{E}	n/v	0.03	0.03	**0.04**^{E}	0.02	0.02	0.01	**0.04**^{E}	**0.04**^{E}	**0.08**^{E}	0.03	0.02	0.03	0.02	0.01	**0.04**^{E}	**0.04**^{E}	0.03	0.02	0.03	**0.08**^{E}	0.03
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Specific Conductance	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	86	8	68	8	8	4	4	8	3
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}$ $_{t2}$	-	189	**470.3**^{F}	**570**^{F}	**637**^{F}	**708**^{F}	165	237	314	242	344	-	372	**548**^{F}	293	228	137	**694**^{F}	**1,080**^{F}	226	136
BC MECC Sulfate Guideline (s2)					s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2	s2
Temperature, Lab	deg C	n/v	n/v	n/v	-	2	0.5	0.5	0.5	0.5	-	14	-	19	14	-	20.5	20	11	2.5	0.5	1	1	1	13
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.86	0.74	1.01	1.07	1.16	1.12	0.76	0.82	1.07	0.56	0.83	0.65	0.67	0.64	0.82	0.78	0.69	1.3	1.3	0.8	0.74
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids	mg/L	$_{5N}$ ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Field	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	11.6	16.7	5.6	3.8	7.7	5.5	14.3	9.6	11.9	5.6	4.6	9.3	5.2	2	11	12	13	5.7	10	23	11
Metals																									
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	<1	4	2	**10**	5	2	2	<1	2	2	1	-	-	-	-	-	-	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	$1{,}100_{s3}$ ^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Bismuth	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	µg/L	7.1_{STB} ^{A} 0.37_{LTG} ^{B}	0.2^{C} 0.5_{t12} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08	7.08
CWQG Cadmium Guideline (LTG)					0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	4^{*B}	5^{C} 5_{s13} ^{E}	n/v	**10BCE**	-	-	-	**10BCE**	**30BCE**	-	-	-	**10BCE**	**10BCE**	**10BCE**	**<11**	**<6**	**20BCE**	**16BCE**	**21BCE**	**16BCE**	**36BCE**	**60BCE**	**25BCE**
CCME Copper Guideline					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	**910**^{BC}	-	-	-	**700**^{BC}	**1,100**^{BC}	-	-	-	**570**^{BC}	**520**^{BC}	**920**^{BC}	**400**^{BC}	290	**1,100**^{BC}	**1,300**^{BC}	**1,600**^{BC}	**920**^{BC}	**780**^{BC}	**2,800**^{BC}	**1,000**^{BC}
Lead	µg/L	$7\#^{B}$	25_{t14} ^{C} 5_{s15} ^{E}	n/v	**90**^{BCE}	-	-	-	**<30**	**<30**	-	-	-	4	<3	<5	**<12**	**<12**	**<12**	<3	**<12**	**<12**	**<12**	**<12**	<2
CCME Lead Guideline					7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PWQO Lead Guideline (s14)					10	10	25	25	20	10	10	20	20	25	20	10	20	20	20	20	10	20	20	20	10
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Lithium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$14{,}881_{EQ3}$ ^{A} 710_{EQ4} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881
CCME Manganese Guideline (EQ4)					860	940	710	710	940	1000	860	710	860	610	710	1000	710	860	860	860	1000	1000	1000	1000	940
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	150^{**B}	25^{C}	n/v	8	-	-	-	<10	**60**^{C}	-	-	-	10	10	<9	<21	<8	<14	<15	<17	**36**^{C}	**51**^{C}	**52**^{C}	12
CCME Nickel Guideline					150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tin	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium	µg/L	33^{A} 15^{B}	5_{s} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	341_{EQ1} ^{A} 128_{EQ2} ^{B}	30^{C} 20^{E}	n/v	**60**^{CE}	-	-	-	**30**^{E}	**310**^{BCE}	-	-	-	10	**30**^{E}	**80**^{CE}	**30**^{E}	**38**^{CE}	**81**^{CE}	**57**^{CE}	**73,000**^{ABCE}	**200**^{CE}	**930**^{ABCE}	**350**^{ACE}	**100**^{CE}
CCME Zinc Guideline (EQ1)					142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2
CCME Zinc Guideline (EQ2)					186	251.5	163.3	163.3	233.7	284.2	205.1	166	189.1	144.5	151.7	288.8	177.1	226.2	226.2	226.2	288.8	288.8	288.8	368.9	266.2
Zirconium	µg/L	n/v	4_{s} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006400402
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																								
Sample Date					3-Jul-89	7-Aug-89	4-Sep-89	3-Nov-91	5-Jan-92	29-Mar-92	12-Aug-93	4-Mar-94	17-Apr-94	9-May-94	29-May-94	5-Jul-94	20-Jul-94	28-Aug-94	28-Sep-94	26-Oct-94	27-Nov-94	18-Dec-94	19-Feb-95	30-Apr-95	30-May-95
Sample ID					19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$^{C}_{\leq 16}$	n/v	52	66	-	34	57.5	53.2	87	55	36	32	50	60	54	60	78	40	54	63	74	25	40
Ammonium	mg/L	n/v	n/v	n/v	0.03	0.03	-	0.03	0.16	0.63	0.03	1.85	0.2	0.13	0.05	0.07	0.13	0.03	0.03	0.05	0.05	0.15	0.34	0.1	0.04
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	28.8	14.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$^{C}_{\geq 9}$	n/v	**3**^{B}	7	7	**4**^{B}	6	**4**^{B}	7.9	**4.5**^{B}	11	9.5	9	-	-	6	7.5	10	-	6	**3**^{B}	12.5	10.5
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	587	911	-	482	1,172	1,820	729	1,390	432	260	382	533	549	638	580	477	562	616	1,295	273,000	315,000
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	-	-	-	1,065	358	703	190	115	176	257	276	318	286	222	275	110	761	130	160
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.19	0.17	-	0.24	0.48	0.41	0.06	1.6	0.44	0.32	0.08	0.01	0.15	0.11	0.2	0.24	0.35	0.38	0.1	0.19	0.12
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate + Nitrite (as N)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{t1} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02	0.01
Nitrite (as N)	mg/L	0.060^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen (Total)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen Ammonia/Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.3	7.3	-	7.1	6.8	6.8	7.5	6.7	7.2	7.1	7.4	7.5	7.2	7.4	7.5	7.2	7.3	7	6.9	6.9	7.3
Phosphate (as P)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total	mg/L	n/v	0.030_{t4} ^{E}	n/v	0.03	0.03	-	0.02	**0.04**^{E}	**0.11**^{E}	0.03	**0.08**^{E}	**0.06**^{E}	**0.05**^{E}	**0.05**^{E}	**0.04**^{E}	**0.06**^{E}	**0.04**^{E}	**0.07**^{E}	0.03	0.03	**0.06**^{E}	**0.08**^{E}	0.03	0.03
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01	0.006
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	6	8	-	5	8	6	5	8	15	15	10	6	6	8	10	7	10	20	10	16	3.6
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Specific Conductance	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	8	8	8	8	8	8	5	8	3	3	8	-	-	5	5	8	-	8	-	3	3
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}$ $_{t2}$	273	**464**^{F}	-	181	**576**^{F}	**1,070**^{F}	280	**720**^{F}	160	83	130	190	220	250	200	200	220	240	**717**^{F}	92.8	99.4
BC MECC Sulfate Guideline (s2)					s2	s2	s2	s2	s2	s2	s2	s2	429	309	309	s2	s2	s2	s2	429	s2	309	s2	309	309
Temperature, Lab	deg C	n/v	n/v	n/v	21	16	-	2	1	1	21.5	1	1	10	14	-	-	19	12	7	-	1	1	3	13
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.74	0.66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.75	0.72
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids	mg/L	$^{B}_{5N}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Field	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals																									
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**980**^{B}	**650**^{B}
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	-	-	1	2	<0.4	2.8	2	2.6	2.3	2.4	2.2	2.3	1.2	<0.2	1.7	2.4	1.9	<0.3	0	2.1
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	$1{,}100_{s3}$ ^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Bismuth	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	µg/L	7.1_{STB} ^{A} 0.37_{LTG} ^{B}	0.2^{C} 0.5_{t12} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**<0.65**	<0.2
CWQG Cadmium Guideline (STB)					7.08	7.08	7.08	7.08	7.08	7.7	7.67	7.7	4.03	2.42	3.73	5.48	5.89	6.8	6.1	4.72	5.87	2.31	7.7	2.74	3.38
CWQG Cadmium Guideline (LTG)					0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.27	0.18	0.25	0.35	0.37	0.37	0.37	0.31	0.37	0.17	0.37	0.2	0.23
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40,000	52,000
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.4	2.7
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	***<1***	<0.57
Copper	µg/L	4^{+B}	5^{C} 5_{s13} ^{E}	n/v	**12BCE**	**12BCE**	-	**8.4BCE**	**6.3BCE**	**12BCE**	**6.2BCE**	**5B**	**15BCE**	**9.2BCE**	**<6.3**	3.4	**6BCE**	**<5**	**5B**	**5B**	**7BCE**	**16BCE**	**31BCE**	**9.4BCE**	**7BCE**
CCME Copper Guideline					4	4	4	4	4	4	4	4	4	2.7	3.8	4	4	4	4	4	4	2.6	4	3	3.5
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	**680**^{BC}	**640**^{BC}	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**910**^{BC}	**610**^{BC}
Lead	µg/L	$7\#^{B}$	25_{s14} ^{C} 5_{s15} ^{E}	n/v	<2.5	<3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2.9
CCME Lead Guideline					7	7	7	7	7	7	7	7	7	3.8	6.5	7	7	7	7	7	7	3.6	7	4.4	5.8
PWQO Lead Guideline (s14)					20	20	20	10	20	20	25	20	10	10	20	20	20	20	20	10	20	20	20	10	10
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Lithium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6,300	6,400
Manganese	µg/L	$14{,}881_{EQ3}$ ^{A} 710_{EQ4} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	53
CCME Manganese Guideline (EQ3)					14881	14881	14881	14881	14881	14881	14881	14881	11694.7	7525.5	10934.6	14881	14881	14881	14881	13407.2	14881	7237.4	14881	8380.8	10056.8
CCME Manganese Guideline (EQ4)					860	860	860	940	1000	1400	710	1400	730	650	730	640	760	860	640	760	760	650	1400	730	700
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.4	<0.72
Nickel	µg/L	150^{**B}	25^{C}	n/v	16	**29**^{C}	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.5	5.2
CCME Nickel Guideline					150	150	150	150	150	150	150	150	150	106.3	146.9	150	150	150	150	150	150	102.8	150	116.7	136.6
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tin	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium	µg/L	33^{A} 15^{B}	5_{s} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	341_{EQ1} ^{A} 128_{EQ2} ^{B}	30^{C} 20^{E}	n/v	**38**^{CE}	**45**^{CE}	-	**63**^{CE}	**940**^{ABCE}	**330**^{CE}	**24**^{E}	**40**^{CE}	**34**^{CE}	**27**^{E}	<21	8	18	16	**27**^{E}	**36**^{CE}	**59**^{CE}	**47**^{CE}	**240**^{CE}	**49**^{CE}	**26**^{E}
CCME Zinc Guideline (EQ1)					142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	112.9	74.3	106	142.2	142.2	142.2	142.2	128.6	142.2	71.6	142.2	82.3	97.9
CCME Zinc Guideline (EQ2)					208.5	208.5	192.2	290.2	278.9	947.7	190.8	693.8	133.7	90.2	105.7	139.4	190.4	185	154.2	155	174.9	93.8	635.4	119.2	104.7
Zirconium	µg/L	n/v	4_{s} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006400402
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																								
Sample Date					29-Jun-95	30-Jul-95	30-Aug-95	24-Sep-95	30-Oct-95	26-Nov-95	28-Dec-95	25-Feb-96	29-Apr-03	3-Jun-03	19006400402 8-Jul-03	12-Aug-03	21-Oct-03	21-Apr-04	26-May-04	22-Jun-04	27-Jul-04	22-Sep-04	19-Oct-04	26-Apr-05	8-Jun-05
Sample ID					19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$^{C}_{\leq 16}$	n/v	41	90	150	53	43	55	68	87	31.7	123	44.8	63.3	63.6	26.6	51	56.4	87.7	96.2	54.8	47.6	72.5
Ammonium	mg/L	n/v	n/v	n/v	0.1	0.61	0.07	0.03	0.03	0.07	0.48	0.79	0.036	0.052	0.068	0.036	0.019	0.03	0.013	0.04	0.026	0.512	0.013	0.016	0.03
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	-	-	-	-	-	-	-	-	10.4	53.7	8.6	23.4	24.5	5.3	16.2	11.9	27.3	34.4	17.9	12.4	-
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	5	11.1	12	19.9	22.7	12.2	10.8	18
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	16.5	19.2	21.2	18.7	15.7	23.3	17.9	14.3
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$^{C}_{\geq 9}$	n/v	6.5	7	8	13.2	12	**5**^{B}	**2.5**^{B}	10	13.46	10.16	**5.1**^{B}	**5.02**^{B}	11.27	14.15	10.4	9.08	9.74	13.26	10.18	12.6	6.23
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	621,000	1,199,000	876,000	2,270,000	622,000	789,000	1,180,000	1,450,000	347,000	848,000	531,000	794,000	712,000	229,000	592,000	864,000	994,000	1,120,000	752,000	381,000	1,250,000
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	348	844	525	818	745	248	596	851	1,031	1,110	776	411	1,067
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	350	700	480	1,500	320	390	640	-	141	350	239	346	266	110	270	421	474	500	330	154	546
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.31	0.1	0.01	0.01	0.49	0.43	0.81	0.02	0.368	0.269	0.126	0.137	0.608	0.299	0.212	0.298	<0.005	<0.017	0.418	0.389	<0.008
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate + Nitrite (as N)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{t1} ^{B}	n/v	n/v	0.1	0.01	0.002	0.001	0.01	0.06	**0.26**^{B}	0.005	0.02	0.008	0.023	0.021	0.028	0.013	0.018	0.024	0.006	0.011	0.024	0.02	<0.004
Nitrite (as N)	mg/L	0.060^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen (Total)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen Ammonia/Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	7.07	8.16	7.19	7.16	7.66	7.76	7.37	7.71	7.78	8.18	7.73	7.62	7.89
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.1	6.9	7.8	7.7	7.1	6.9	6.7	6.8	7.32	8.27	7.64	7.62	7.65	7.63	7.73	7.54	7.98	7.92	7.68	7.59	7.74
Phosphate (as P)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total	mg/L	n/v	0.030_{s4} ^{E}	n/v	**0.06**^{E}	**0.23**^{E}	**0.13**^{E}	0.03	0.03	**0.04**^{E}	**0.05**^{E}	-	**0.039**^{E}	0.015	**0.071**^{E}	**0.075**^{E}	**0.053**^{E}	**0.074**^{E}	**0.035**^{E}	**0.072**^{E}	**0.042**^{E}	**0.115**^{E}	**0.09**^{E}	**0.036**^{E}	**0.086**^{E}
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.02	0.05	0.07	0.004	0.01	0.007	0.01	0.02	0.0039	<0.002	0.0272	0.0412	0.004	0.0063	0.0035	0.0287	<0.0024	0.0714	0.0031	0.0035	0.0084
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	1.32	0.42	1.08	0.6	1.94	2.3	1.46	0.94
Residue,Particulate	mg/L	n/v	n/v	n/v	3.1	2.9	4	2.5	6.4	10	10	13	18.1	<0.8	6.8	3.1	5.9	115	8.2	5.1	<1.8	9	7.3	12.5	5
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	226	677	345	516	463	149	385	727	807	889	489	248	1,030
Specific Conductance	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	8	5	5	5	8	4	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}$ $_{t2}$	-	**589**^{F}	304	**1,430**^{F}	255	342	**608**^{F}	**823**^{F}	-	-	-	-	-	-	-	-	-	-	-	-	-
BC MECC Sulfate Guideline (s2)					s2	s2	s2	s2	s2	s2	s2	s2	309	s2	429	s2	s2	309	s2	s2	s2	s2	s2	309	s2
Temperature, Lab	deg C	n/v	n/v	n/v	22	22	17	10.5	20	1	1	1	2.6	15.3	20.7	20.4	4.6	1.7	11.7	18.3	20.8	15.9	6.2	3.1	19.1
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.98	22,522	0.9	0.5	0.91	0.92	1.21	-	0.77	0.55	1.21	1.2	1.07	0.75	0.72	0.94	0.83	1.26	1.08	0.99	0.79
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	244	678	352	519	469	264	393	732	809	898	496	260	1,030
Total Suspended Solids	mg/L	$^{B}_{5N}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Field	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	17.4	1.88	5.7	2.74	6.36	65	6.92	10.1	2.89	9.54	8.7	12.8	5.15
Metals																									
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	**300**^{B}	**470**^{B}	67	72	**730**^{B}	**530**^{B}	**480**^{B}	**400**^{B}	**392**^{B}	25.4	**274**^{B}	**148**^{B}	**195**^{B}	**649**^{B}	**219**^{B}	**189**^{B}	95.1	**136**^{B}	**211**^{B}	-	95.5
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	2.1	4.7	3.6	<0.2	<0.4	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	10.4	19.1	13.4	16.2	13.8	9.55	9.31	12.6	14.9	26.5	11.7	-	17.6
Beryllium	µg/L	n/v	$1,100_{s3}$ ^{C}	n/v	-	-	-	-	-	-	-	-	0.0247	0.0149	0.037	0.0227	0.0291	0.0257	0.0226	0.0392	0.0317	0.0234	0.0185	-	0.0447
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Bismuth	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	µg/L	7.1_{STB} ^{A} 0.37_{LTG} ^{B}	0.2^{C} 0.5_{t12} ^{E}	n/v	**<0.86**	**<0.7**	<0.2	**<1**	**2.7**^{BCE}	**1.6**^{BCE}	**8**^{ABCE}	**<0.8**	-0.0172		**1.12**^{BCE}	**0.398**^{BC}	0.144	**0.76**^{BCE}	**0.632**^{BCE}	-0.57	-0.18	**0.536**^{BCE}	-0.0173	0.0208	-	-0.00289
CWQG Cadmium Guideline (STB)					7.5	7.7	7.7	7.7	6.84	7.7	7.7	7.08	2.98	7.5	5.09	7.41	5.67	2.31	5.76	7.7	7.7	7.7	7.06	3.25	7.7
CWQG Cadmium Guideline (LTG)					0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.21	0.37	0.33	0.37	0.36	0.17	0.36	0.37	0.37	0.37	0.37	0.23	0.37
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	130,000	260,000	160,000	590,000	110,000	140,000	230,000	-	44,500	84,700	87,200	117,000	84,100	36,200	91,200	156,000	165,000	165,000	114,000	42,900	195,000
Chromium	µg/L	n/v	n/v	n/v	1.2	7.3	<0.2	<0.53	1.5	2.5	4.8	3.6	0.674	0.254	0.113	0.957	-0.493	0.432	1.05	0.817	0.525	1.09	0.509	-	0.0622
Cobalt	µg/L	n/v	0.9^{E}	n/v	<0.57	**2.8**^{E}	***<1.2***	<0.5	***<0.91***	***<1.3***	**3.5**^{E}	***<1.5***	**1.39**^{E}	**2.29**^{E}	**1.13**^{E}	**2.44**^{E}	**6.97**^{E}	-0.17	0.471	0.575	0.855	**5.42**^{E}	**2.47**^{E}	-	0.496
Copper	µg/L	4^{+B}	5^{C} 5_{s13} ^{E}	n/v	**4.9B**	**37BCE**	**6.9BCE**	<0.98	**7.2BCE**	**12BCE**	**9BCE**	**6.5BCE**	**8.66BCE**	**11BCE**	**7.06BCE**	**5.59BCE**	**7.57BCE**	**7.02BCE**	**6.63BCE**	**7.15BCE**	**4.82B**	**5.34BCE**	**4.95B**	-	**4.02B**
CCME Copper Guideline					4	4	4	4	4	4	4	4	3.2	4	4	4	4	2.6	4	4	4	4	4	3.4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	**500**^{BC}	**1,500**^{BC}	170	150	**760**^{BC}	**750**^{BC}	**760**^{BC}	**1,200**^{BC}	**521**^{BC}	42	**577**^{BC}	**405**^{BC}	**446**^{BC}	**655**^{BC}	**331**^{BC}	**318**^{BC}	207	223	**404**^{BC}	-	268
Lead	µg/L	$7\#^{B}$	25_{s14} ^{C} 5_{s15} ^{E}	n/v	<2	**<5.4**	<2	**<5.1**	<2	<2.6	<2	<2	0.819	-7.2	1.18	**5.71**^{E}	-5.61	-19.3	**5.15**^{E}	-1.08	**11.3**^{BE}	3	-0.637	-	-2.78
CCME Lead Guideline					7	7	7	7	7	7	7	7	4.9	7	7	7	7	3.6	7	7	7	7	7	5.5	7
PWQO Lead Guideline (s14)					20	25	25	20	20	20	20	25	10	25	20	20	20	10	20	20	25	25	20	20	20
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Lithium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	µg/L	n/v	n/v	n/v	6,700	12,000	20,000	15,000	11,000	11,000	15,000	-	7,160	33,600	5,280	13,400	13,700	4,820	10,400	7,580	15,000	21,600	11,200	11,300	14,100
Manganese	µg/L	$14,881_{EQ3}$ ^{A} 710_{EQ4} ^{B}	n/v	n/v	230	1,200	140	150	78	110	480	220	71.6	27.7	105	54.6	35.3	50.2	41.6	78.2	66.6	71.4	38.4	-	216
CCME Manganese Guideline (EQ3)					14881	14881	14881	14881	14881	14881	14881	14881	9000.3	14881	14304.6	14881	14881	7237.4	14881	14881	14881	14881	14881	9724.9	14881
CCME Manganese Guideline (EQ4)					940	1400	650	720	940	1000	1200	1000	660	460	640	710	640	530	560	770	650	650	710	600	650
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Molybdenum	µg/L	73^{B}	40^{E}	n/v	1.1	1.8	1.3	4.8	1.7	5.7	9.8	22	0.689	2.86	0.813	5.3	4.31	0.601	3.68	2.23	5.44	3.97	2.71	-	8.57
Nickel	µg/L	150^{++B}	25^{C}	n/v	<4.8	7.2	8.1	6.4	7.5	11	**29**^{C}	11	2.8	14.9	0.53	6.37	6.58	3.36	0.996	4.07	2.27	8.6	5.41	-	3.53
CCME Nickel Guideline					150	150	150	150	150	150	150	150	124.1	150	150	150	150	102.8	150	150	150	150	150	132.7	150
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	1,600	4,840	2,020	4,290	5,260	1,390	2,400	3,480	3,600	7,350	4,050	1,810	5,380
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	9,840	40,500	16,300	31,900	35,400	5,760	19,400	20,000	34,300	51,800	28,700	13,600	66,900
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	146	353	334	314	240	73.1	264	495	428	571	269	-	526
Tin	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	12.5	-0.271	7.5	2.97	3.66	17.1	5.46	4.45	1.03	1.69	4.49	-	0.36
Uranium	µg/L	33^{A} 15^{B}	5_{s} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	1.17	-0.224	-0.0747	0.796	-1.26	1.53	-0.38	0.342	1.23	-0.00107	0.591	-	-0.335
Zinc	µg/L	341_{EQ1} ^{A} 128_{EQ2} ^{B}	30^{C} 20^{E}	n/v	**58**^{CE}	**97**^{CE}	11	**200**^{CE}	**160**^{CE}	**100**^{CE}	**330**^{CE}	**130**^{CE}	18.9	5.21	12.9	9.24	19.4	**20.9**^{E}	12.5	11.6	13.2	13.7	13.5	-	6.57
CCME Zinc Guideline (EQ1)					142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	88.1	142.2	136.7	142.2	142.2	71.6	142.2	142.2	142.2	142.2	142.2	94.8	142.2
CCME Zinc Guideline (EQ2)					258.7	587.1	197.2	629.5	237.7	337.4	634.8	313.4	91.4	99.7	116.1	167.5	127.4	53.2	121.9	225.4	167.6	172.7	165.8	78	209.4
Zirconium	µg/L	n/v	4_{s} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006400402
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																							
Sample Date					16-Aug-05	13-Sep-05	4-Oct-05	5-Nov-07	27-May-08	23-Jun-08	29-Jul-08	25-Aug-08	23-Sep-08	20-Oct-08	25-May-09	15-Jun-09	1-Sep-09	21-Sep-09	26-Oct-09	23-Nov-09	3-May-10	25-May-10	21-Jun-10	30-Aug-10	27-Sep-10
Sample ID					19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$^{C}_{\leq 16}$	n/v	72.8	82.9	76.2	57.9	42.2	67.4	85.2	90.5	85.4	81.8	45.6	63.4	67.7	104	67.7	58.1	57.8	74	72.9	75.4	45
Ammonium	mg/L	n/v	n/v	n/v	0.04	0.011	<0.002	0.033	<0.004	0.06	0.053	0.016	0.018	<0.033	0.011	0.023	<0.009	0.031	0.075	0.067	0.051	0.093	0.082	0.052	0.041
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	30.9	17.8	23.2	18.9	13.9	20	20.2	24	22.8	22.6	13.3	20.6	27.5	39.8	19.6	17.4	21.6	23	20.8	32	8
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	16.5	19.1	18	12	9.9	14.8	18.1	20.4	19.4	18.4	8.5	13.7	12.7	23.7	14.8	12.8	12.6	16.8	17	15.8	9.8
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	8.1	8.8	10.1	28.5	23.4	20.6	-	19.5	22.2	17.3	19.8	16.4	15	8.9	19.8	21.8	16	17.8	19.2	7.3	33.2
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$^{C}_{\geq 9}$	n/v	8.48	8.44	10.34	10.97	**1.54**^{B}	**5.49**^{B}	**5.34**^{B}	7.81	8.53	10.01	-	8.67	14.63	10.62	13.62	12.82	10.52	11.86	8.37	13.3	10.01
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	0	1,020,000	1,370,000	691,000	492,000	851,000	645,000	863,000	626,000	1,090,000	392,000	809,000	1,360,000	1,360,000	717,000	668,000	660,000	730,000	796,000	0	349,000
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	1,551	1,056	1,389	409	357	757	656	746	479	432	284	687	1,100	1,062	411	380	493	676	704	1,345	243
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	654	434	547	277	207	350	282	353	252	463	143	317	563	518	324	295	281	308	338	803	167
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	<0.005	<0.005	<0.005	0.644	0.093	0.169	0.177	0.138	0.362	0.954	0.21	0.343	0.387	0.269	0.63	0.606	0.301	-	0.101	0.617	0.727
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate + Nitrite (as N)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{t1} ^{B}	n/v	n/v	<0.002	<0.002	<0.003	0.019	0.023	0.033	0.018	0.008	0.015	0.038	0.012	0.016	0.013	0.009	0.028	0.022	0.015	0.007	0.013	0.06	0.023
Nitrite (as N)	mg/L	0.060^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen (Total)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen Ammonia/Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.78	7.75	7.72	7.11	6.77	7.12	7.19	7.46	7.38	7.5	6.85	7.06	7.25	7.09	7.75	6.69	6.69	8.09	7.14	**8.81**^{C}	6.71
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.94	7.96	7.9	7.84	7.28	7.67	7.82	8.03	7.78	7.97	7.61	7.72	7.81	7.94	7.83	7.65	7.69	8.13	7.9	**8.66**^{C}	7.58
Phosphate (as P)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total	mg/L	n/v	0.030_{t4} ^{E}	n/v	**0.033**^{E}	**0.035**^{E}	**0.127**^{E}	**0.032**^{E}	**0.039**^{E}	**0.057**^{E}	**0.08**^{E}	**0.064**^{E}	**0.053**^{E}	**0.05**^{E}	0.025	**0.038**^{E}	<0.008	**0.051**^{E}	0.029	0.03	**0.044**^{E}	**0.076**^{E}	**0.041**^{E}	**0.07**^{E}	**0.054**^{E}
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.0086	0.0131	0.0047	0.0082	<0.0015	0.0195	0.0356	0.0084	0.0145	0.0183	0.0038	0.0098	0.0049	0.0113	0.0101	0.0084	0.0096	0.0057	0.0068	0.0076	0.0178
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	0.94	0.84	0.56	1.84	0.38	0.72	1.3	1.18	1.5	1.44	0.68	0.36	1.46	0.92	1.82	1.72	0.56	<0.04	0.88	<0.08	2.72
Residue,Particulate	mg/L	n/v	n/v	n/v	<1.3	<1.2	13.6	4.5	5.9	6.3	8.9	5.6	8.3	6.8	-	-	6.6	5.6	5.8	4	15.2	8	6.6	7.1	9.8
Residue-Filterable	mg/L	n/v	n/v	n/v	1,320	820	1,150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Specific Conductance	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	-	-	-	0.8	0.8	0.8	0.8	0.8	0.8	0.8	8	8	8	8	8	8	8	8	8	8	8
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}$ $_{t2}$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC MECC Sulfate Guideline (s2)					s2	s2	s2	s2	429	s2	s2	s2	s2	s2	309	s2	s2	s2	s2	s2	s2	s2	s2	s2	309
Temperature, Lab	deg C	n/v	n/v	n/v	20.7	21.1	15.8	3	9.8	18.9	19.8	18.4	12.2	7.6	10.7	16.6	14.4	14.5	2.2	1.8	11.3	21.9	19.7	19.9	9.1
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.46	0.42	0.85	1.08	0.77	0.86	1.06	1	0.98	0.97	0.73	0.7	3.6	0.64	0.84	0.9	0.76	0.93	0.75	0.73	1.36
Total Residue	mg/L	n/v	n/v	n/v	1,330	821	1,160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids	mg/L	$^{B}_{5N}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Field	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	0.64	1.34	8.12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals																									
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	10.1	31.6	**106**^{B}	**247**^{B}	**231**^{B}	**202**^{B}	**227**^{B}	**117**^{B}	**213**^{B}	**154**^{B}	**249**^{B}	**191**^{B}	**128**^{B}	82.9	**220**^{B}	**196**^{B}	**330**^{B}	**152**^{B}	**132**^{B}	52.6	**369**^{B}
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	20.9	16.1	19.4	12.1	10.1	15.7	15	15.5	14	17.3	9.7	15	23.4	25.7	14.2	10.8	10.1	11.3	14.5	26	11.6
Beryllium	µg/L	n/v	$1{,}100_{t3}$ ^{C}	n/v	0.0144	0.0272	0.000933	-0.0224	-0.0137	-0.00266	-0.0272	-0.0195	-0.0108	-0.0306	0.0168	0.00791	0.00612	0.00763	0.016	0.005	0.014	0.027	0.024	-0.203	-0.039
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Bismuth	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	µg/L	7.1_{STB} ^{A} 0.37_{LTG} ^{B}	0.2^{C} 0.5_{t12} ^{E}	n/v	-0.5	0.0963	-0.196	**0.908**^{BCE}	**1.27**^{BCE}	**0.517**^{BCE}	**1.03**^{BCE}	**1.13**^{BCE}	**0.867**^{BCE}	**0.801**^{BCE}	0.0776	**0.849**^{BCE}	**0.597**^{BCE}	**0.884**^{BCE}	-0.622	-1.08	-1.49	-0.517	-6.29	-1.83	**2.13**^{BCE}
CWQG Cadmium Guideline (STB)					7.7	7.7	7.7	5.91	4.4	7.5	6.02	7.56	5.37	7.7	3.02	6.78	7.7	7.7	6.93	6.3	6	6.58	7.23	7.7	3.53
CWQG Cadmium Guideline (LTG)					0.37	0.37	0.37	0.37	0.29	0.37	0.37	0.37	0.34	0.37	0.21	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.24
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	242,000	153,000	207,000	85,900	66,200	119,000	84,200	107,000	67,500	154,000	43,800	108,000	207,000	175,000	105,000	95,800	91,100	100,000	114,000	289,000	48,500
Chromium	µg/L	n/v	n/v	n/v	0.352	0.198	-0.265	0.71	1.14	0.577	1.93	0.427	0.879	1.55	0.75	1.32	0.886	2.91	-1.44	-1.23	-0.362	-1.2	-1.12	0.05	0.531
Cobalt	µg/L	n/v	0.9^{E}	n/v	0.231	-0.283	0.162	**5.08**^{E}	0.567	**2.15**^{E}	**1.92**^{E}	**5.1**^{E}	**8.02**^{E}	**9.36**^{E}	0.76	**1.8**^{E}	**2.44**^{E}	**6.3**^{E}	**5.76**^{E}	**3.88**^{E}	**1.92**^{E}	**1.63**^{E}	**1.03**^{E}	0.341	**1.37**^{E}
Copper	µg/L	4^{+B}	5^{C} 5_{t13} ^{E}	n/v	2.89	**4.06B**	3.23	**6.36BCE**	**5.67BCE**	**4.28B**	**10.3BCE**	**4.02B**	**4.63B**	**4.05B**	**6.28BCE**	**5.87BCE**	**5.12BCE**	**5.16BCE**	**10.2BCE**	**9.88BCE**	**8.91BCE**	**8.55BCE**	**6.36BCE**	**4.58B**	**8.24BCE**
CCME Copper Guideline					4	4	4	4	4	4	4	4	4	4	3.2	4	4	4	4	4	4	4	4	4	3.7
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	22.3	41.4	144	**470**^{BC}	**416**^{BC}	**479**^{BC}	**657**^{BC}	**362**^{BC}	**480**^{BC}	**391**^{BC}	**397**^{BC}	**365**^{BC}	290	153	**461**^{BC}	**402**^{BC}	**561**^{BC}	**317**^{BC}	258	98	**651**^{BC}
Lead	µg/L	$7\#^{B}$	25_{t14} ^{C} 5_{t15} ^{E}	n/v	0.111	**5.85**^{E}	-2.83	-1.52	1.23	-1.81	1.1	-0.0014	-1.01	**6.83**^{E}	1.74	0.831	-16.8	-4.11	0.997	1.87	-1.5	0.342	-10.7	**12**^{BE}	2.24
CCME Lead Guideline					7	7	7	7	7	7	7	7	7	7	5	7	7	7	7	7	7	7	7	7	6.1
PWQO Lead Guideline (s14)					20	25	20	20	20	20	25	25	25	25	20	20	20	25	20	20	20	20	20	20	20
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Lithium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	µg/L	n/v	n/v	n/v	11,900	12,700	7,220	15,200	10,100	12,600	17,500	21,100	20,200	19,100	8,270	11,400	11,200	19,700	14,900	13,500	12,900	14,100	12,900	19,700	11,100
Manganese	µg/L	$14{,}881_{EQ3}$ ^{A} 710_{EQ4} ^{B}	n/v	n/v	26.1	34.9	58.6	31.2	42.9	91.5	82.5	54.7	40	61.6	39.6	69.1	54.4	61.3	57.9	41.7	71.2	118	147	102	67.7
CCME Manganese Guideline (EQ3)					14881	14881	14881	14881	12608.5	14881	14881	14881	14881	14881	9112.3	14881	14881	14881	14881	14881	14881	14881	14881	14881	10442.1
CCME Manganese Guideline (EQ4)					650	650	650	560	760	710	560	460	560	650	570	610	650	650	610	640	640	460	610	320	600
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	<0.02	<0.02	<0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	13.1	6.77	10.9	2.3	0.866	4.81	2.7	2.1	3.29	4.54	1.8	2.21	3.88	5.65	2.85	1.89	3.45	2.42	1.66	5.23	3.9
Nickel	µg/L	150^{**B}	25^{C}	n/v	1.79	2.15	1.18	5.69	3.93	3.51	5.04	6.6	7.75	6.77	3.15	3.3	2.81	5.07	6.53	4.73	4.39	3.97	3.2	10.8	5.73
CCME Nickel Guideline					150	150	150	150	150	150	150	150	150	150	125.4	150	150	150	150	150	150	150	150	150	141.1
Potassium	µg/L	n/v	n/v	n/v	6,300	4,270	6,720	-	-	-	-	-	-	-	-	-	-	-	-	-	2,990	3,710	3,840	10,500	2,220
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	99,400	64,300	104,000	-	-	-	-	-	-	-	-	-	-	-	-	-	25,000	29,800	36,300	64,500	10,800
Strontium	µg/L	n/v	n/v	n/v	579	378	510	241	148	236	219	265	215	349	117	263	450	509	239	208	197	216	238	543	114
Tin	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-0.456	0.214	5.21	6.65	7.27	7.21	8.55	4.57	7.93	6.04	8.1	6.57	4.93	3.46	6.68	4.62	12.2	5.07	4.12	-0.149	8.82
Uranium	µg/L	33^{A} 15^{B}	5_{s} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	1.04	0.146	0.455	0.684	1.83	-0.0304	2.05	1.05	1.83	1.29	0.968	0.275	-0.00976	2.92	0.784	0.961	1.56	1.68	0.732	0.906	4.23
Zinc	µg/L	341_{EQ1} ^{A} 128_{EQ2} ^{B}	30^{C} 20^{E}	n/v	2.14	4.8	**23.5**^{E}	17.3	12.8	11.6	16.7	8.37	10.7	18.4	12.2	10.1	18.4	12.3	19.5	**22.3**^{E}	16.1	9.03	10.4	8.77	**21.2**^{E}
CCME Zinc Guideline (EQ1)					142.2	142.2	142.2	142.2	121.3	142.2	142.2	142.2	142.2	142.2	89.1	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	101.4
CCME Zinc Guideline (EQ2)					168.3	116.1	160.3	133.6	147.9	168.3	117.3	123.8	116.1	160.2	74.5	134.3	207.5	140.1	135.1	148.8	121.6	96.7	131.2	109.1	108.6
Zirconium	µg/L	n/v	4_{s} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006400402
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location / Sample Date / Sample ID / Laboratory Work Order	Units	CCME	PWQO	BC MECC	1-Nov-10 19006400402 HIST_19006400402	30-May-11 19006400402 HIST_19006400402	27-Jun-11 19006400402 HIST_19006400402	25-Jul-11 19006400402 HIST_19006400402	29-Aug-11 19006400402 HIST_19006400402	26-Sep-11 19006400402 HIST_19006400402	31-Oct-11 19006400402 HIST_19006400402	23-Apr-12 19006400402 HIST_19006400402	29-May-12 19006400402 HIST_19006400402	25-Jun-12 19006400402 HIST_19006400402	30-Jul-12 19006400402 HIST_19006400402	27-Aug-12 19006400402 HIST_19006400402	24-Sep-12 19006400402 HIST_19006400402	29-Oct-12 19006400402 HIST_19006400402	27-May-13 19006400402 HIST_19006400402	24-Jun-13 19006400402 HIST_19006400402	26-Aug-13 19006400402 HIST_19006400402	30-Sep-13 19006400402 HIST_19006400402	2-Jun-14 19006400402 HIST_19006400402	30-Jun-14 19006400402 HIST_19006400402	25-Aug-14 19006400402 HIST_19006400402
General Chemistry																									
Alkalinity, Total (as CaCO3)	mg/L	n/v	$^{C}_{\leq 16}$	n/v	54.2	60	87.8	103	116	96.1	59.9	37.6	65.8	80.6	104	123	72.6	47.9	46.5	72	76.7	74.8	50.4	52.7	-
Ammonium	mg/L	n/v	n/v	n/v	0.026	0.027	0.062	0.029	0.02	<0.002	0.069	0.028	0.075	0.078	0.024	0.154	0.055	0.018	0.021	0.039	0.071	0.055	0.03	0.066	0.069
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	18.1	20.7	27.4	30.6	58	49.8	25.4	14.9	19.1	29.8	29.6	46.6	20.7	14	17.1	24.3	26.5	20.1	17.7	20.5	20.5
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	12.5	14.2	20.8	25.6	27.1	22.2	14	8.2	15.1	43.9	-	30.7	16.5	10.7	9.6	16.7	18.2	17.1	14.3	19	15.8
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	27.5	21.4	16.8	13	7.9	6.7	19.3	22.4	25.5	11.2	-	13.7	30.5	43.5	21	21	22.8	26	17.5	18.6	27
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$^{C}_{\geq 9}$	n/v	11.26	9.73	7.71	6.79	8	12.02	11.27	11.72	6.3	6.01	6.61	7.73	7.43	8.38	10.08	7.28	6.2	8.61	8.38	7.41	**3.06^{B}**
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	714,000	548,000	769,000	1,220,000	0	1,390,000	1,010,000	364,000	457,000	872,000	1,220,000	995,000	727,000	443,000	380,000	618,000	728,000	535,000	371,000	132,000	-
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	413	416	609	935	1,377	1,087	615	231	366	687	1,134	901	525	277	269	546	644	399	317	454	385
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	324	241	340	569	755	644	441	156	193	382	-	428	-	-	152	276	310	214	135	189	192
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.787	0.231	0.433	<0.037	<0.019	<0.049	1.46	0.33	0.166	0.077	<0.023	0.375	0.898	0.542	0.229	0.2	0.373	0.4	0.17	<0.048	0.254
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate + Nitrite (as N)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{t1} ^{B}	n/v	n/v	0.022	0.012	0.018	0.005	0.006	<0.003	0.042	0.015	0.013	0.014	0.005	0.068	0.033	0.011	0.012	0.012	0.017	0.012	0.011	0.005	0.038
Nitrite (as N)	mg/L	0.060^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen (Total)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.17	1.24	0.86	0.71	1.08
Nitrogen Ammonia/Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	6.57	6.89	7.05	7.27	7.13	7.69	7.06	**6.02^{BC}**	6.73	6.67	6.99	7.33	6.78	7.38	6.72	6.64	6.95	6.7	**6.49^{BC}**	6.75	6.93
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.7	7.88	8.14	8.16	8.22	8.27	7.82	7.38	7.75	7.84	8.07	7.99	7.54	7.57	7.35	7.72	7.73	7.85	7.81	7.72	-
Phosphate (as P)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total	mg/L	n/v	0.030_{t4} ^{E}	n/v	**0.047^{E}**	**0.043^{E}**	**0.049^{E}**	**0.077^{E}**	**0.1^{E}**	**0.052^{E}**	**0.055^{E}**	**0.034^{E}**	**0.063^{E}**	**0.062^{E}**	**0.056^{E}**	**0.039^{E}**	-	<0.002	0.026	**0.031^{E}**	**0.053^{E}**	**0.044^{E}**	0.03	**0.033^{E}**	**0.039^{E}**
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.0184	0.0052	0.0163	0.0262	0.0617	0.0179	0.0167	-	0.026	<0.0015	0.0109	0.0393	0.0216	0.0088	<0.0019	0.0086	0.0253	0.0051	0.0088	0.0058	0.0261
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	1.4	0.4	0.88	0.52	1.04	<0.04	2.22	1.24	0.94	2.16	-	3.6	1.84	2.12	0.72	0.56	2	1.96	0.5	0.64	2.42
Residue,Particulate	mg/L	n/v	n/v	n/v	6.3	11.3	5.9	4.8	2.7	<1.7	14.6	10.9	5.4	6.3	3	5.8	6.8	7.3	3.8	6.1	5.7	8.2	10.3	13	11.6
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Specific Conductance	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}_{t2}$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC MECC Sulfate Guideline (s2)					s2	429	s2	s2	s2	s2	s2	309	429	s2	s2	s2	s2	s2	309	s2	s2	429	309	429	429
Temperature, Lab	deg C	n/v	n/v	n/v	3.4	13.2	19	21.9	18.6	13.9	3.8	5.3	16.4	20.2	20.7	19.9	10.4	5.7	10.1	20.2	19.3	13.1	18.5	23.2	19.4
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.87	0.78	0.88	0.82	0.58	0.57	1.12	0.83	1.02	1.09	0.7	1.29	-	0.81	0.65	0.96	1.03	0.92	0.79	0.69	0.85
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids	mg/L	$^{B}_{5N}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Field	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals																									
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	**268^{B}**	**258^{B}**	97.4	46.8	32	39.5	**240^{B}**	**269^{B}**	**189^{B}**	**121^{B}**	28.7	99.4	**260^{B}**	**479^{B}**	**219^{B}**	**207^{B}**	**202^{B}**	**232^{B}**	**265^{B}**	**163^{B}**	**370^{B}**
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	10.9	10.8	12.1	22.8	19.9	14.5	12.5	9.59	11.6	19	30	23.5	17.3	14.5	9.97	14	17.1	14.8	11.8	16.9	14.1
Beryllium	µg/L	n/v	$1{,}100_{t3}$ ^{C}	n/v	-0.06	0.019	-0.027	0.02	0.032	0.037	0.057	0.04	0.01	0.086	-0.00914	0.05	0.168	0.145	0.00874	0.00579	-0.0123	-0.00341	0.0235	0.122	0.0474
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Bismuth	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-4.09	-	-0.275	0.113	-0.513	0.278	-0.674	-0.912	-2.71	-1.32	-0.125
Cadmium	µg/L	7.1_{STB} ^{A} 0.37_{LTG} ^{B}	0.2^{C} 0.5_{t12} ^{E}	n/v	**0.716^{BCE}**	**0.291^{C}**	-0.363	0.074	**0.473^{BC}**	**0.38^{BC}**	**0.602^{BCE}**	**0.274^{C}**	**0.905^{BCE}**	**1.63^{BCE}**	**2.73^{BCE}**	**1.11^{BCE}**	-1.73	-0.215	**1.04^{BCE}**	**1.84^{BCE}**	**2.11^{BCE}**	**1.67^{BCE}**	**1.05^{BCE}**	**1.2^{BCE}**	**1.86^{BCE}**
CWQG Cadmium Guideline (STB)					6.93	5.13	7.28	7.7	7.7	7.7	7.7	3.3	4.09	7.7	7.08	7.7	7.08	7.08	3.21	5.89	6.63	4.55	2.85	4.01	4.07
CWQG Cadmium Guideline (LTG)					0.37	0.33	0.37	0.37	0.37	0.37	0.37	0.23	0.27	0.37	0.37	0.37	0.37	0.37	0.22	0.37	0.37	0.3	0.2	0.27	0.27
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	105,000	73,400	106,000	199,000	262,000	211,000	151,000	45,500	56,800	125,000	179,000	129,000	106,000	58,300	46,400	88,100	97,400	59,600	36,100	53,000	53,400
Chromium	µg/L	n/v	n/v	n/v	-0.077	-0.392	-0.521	-0.826	-0.09	-1.1	0.366	-0.046	0.196	-1.35	0.604	-0.752	-0.354	1.4	1.38	1.5	1.37	1.24	2.78	0.77	1.98
Cobalt	µg/L	n/v	0.9^{E}	n/v	**3.35^{E}**	**1.39^{E}**	**1.9^{E}**	**1.45^{E}**	0.305	**3.35^{E}**	**4.44^{E}**	**1.22^{E}**	0.849	**1.69^{E}**	0.82	**1.74^{E}**	**4.08^{E}**	**4.03^{E}**	**1.41^{E}**	**1.52^{E}**	**4.38^{E}**	**8.38^{E}**	**1.38^{E}**	**1.3^{E}**	**2.73^{E}**
Copper	µg/L	4^{*B}	5^{C} 5_{s13} ^{E}	n/v	**7.49BCE**	**7BCE**	**5.49BCE**	**4.32B**	3.56	**4.12B**	**6.41BCE**	**7.67BCE**	**6.67BCE**	**6.2BCE**	3.93	**5.67BCE**	**5.23BCE**	**8.55BCE**	**6.19BCE**	**5.88BCE**	**4.86B**	**5.54BCE**	**6.09BCE**	**5.33BCE**	**6.34BCE**
CCME Copper Guideline					4	4	4	4	4	4	4	3.5	4	4	4	4	4	4	3.4	4	4	4	3.1	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	**493^{BC}**	**477^{BC}**	206	115	37.5	87.6	**356^{BC}**	**348^{BC}**	**424^{BC}**	243	114	213	**667^{BC}**	**783^{BC}**	**317^{BC}**	**361^{BC}**	**413^{BC}**	**523^{BC}**	**460^{BC}**	267	**516^{BC}**
Lead	µg/L	$7\#^{B}$	25_{s14} ^{C} 5_{s15} ^{E}	n/v	3.84	1.8	2.33	-0.223	0.567	4.77	-0.472	3.2	1.54	1.81	0.711	**5.14^{E}**	-7.67	-9.59	-3.31	-5.11	-0.362	-3.87	-6.28	-2.46	-6.15
CCME Lead Guideline					7	7	7	7	7	7	7	5.6	7	7	7	7	7	7	5.4	7	7	7	4.7	7	7
PWQO Lead Guideline (s14)					20	20	25	25	25	25	20	10	20	20	25	25	20	20	20	20	20	20	20	20	20
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Lithium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	6.66	-	6.96	-5.74	3.48	7.2	8.91	2.42	2.64	1.15	1.97
Magnesium	µg/L	n/v	n/v	n/v	15,000	14,100	18,300	17,600	24,400	28,400	15,600	10,400	12,500	17,000	18,500	25,700	14,300	11,400	8,810	13,600	16,200	15,800	10,900	13,700	14,300
Manganese	µg/L	$14{,}881_{EQ3}$ ^{A} 710_{EQ4} ^{B}	n/v	n/v	34.7	53.5	132	218	47.6	29	27	30.6	76	187	82.4	45.3	56.5	30.6	32.2	95	73.2	62.6	56	87	62.7
CCME Manganese Guideline (EQ3)					14881	14409.6	14881	14881	14881	14881	14881	9835.7	11856.6	14881	14881	14881	14881	14881	9613.9	14881	14881	12982.1	8663.1	11640.6	11802.7
CCME Manganese Guideline (EQ4)					610	560	460	480	520	480	650	700	540	610	460	650	710	710	700	560	610	560	500	540	730
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	2.55	0.573	3.05	2.65	3.92	7.39	2.02	-0.827	-0.204	1.37	3.73	1.78	4.87	2.17	1.67	2.16	2.56	2.99	1.76	1.4	2.46
Nickel	µg/L	150^{**B}	25^{C}	n/v	7.43	4.74	4.39	3.68	4.98	8.33	5.41	3.9	4.51	5.51	2.11	8.34	2.73	-4.64	4.12	5.94	5.12	6.49	3.9	3.39	4.92
CCME Nickel Guideline					150	150	150	150	150	150	150	134	150	150	150	150	150	150	131.4	150	150	150	120.1	150	150
Potassium	µg/L	n/v	n/v	n/v	4,840	2,840	4,310	6,580	10,300	10,600	7,740	1,750	2,290	5,120	6,670	6,960	4,970	3,100	1,540	2,510	3,740	3,420	1,610	1,970	2,180
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-3.65	-	0.0381	-0.634	0.0411	**0.419^{BC}**	**1.62^{BC}**	**1.4^{BC}**	**0.175^{C}**	**0.275^{BC}**	**0.775^{BC}**
Sodium	µg/L	n/v	n/v	n/v	26,500	21,300	29,800	36,200	64,500	69,100	40,400	12,800	18,600	34,900	42,200	44,600	24,700	16,200	14,500	22,200	27,200	23,200	13,600	15,700	17,900
Strontium	µg/L	n/v	n/v	n/v	236	181	274	473	528	536	330	110	154	301	474	337	268	141	119	208	247	183	119	487	153
Tin	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-2.3	-	-11.2	23.6	-2.56	-7.22	-5.95	-3.48	-2.95	-7.92	-6.34
Titanium	µg/L	n/v	n/v	n/v	6.86	5.65	2.68	1.78	0.284	0.554	7.33	5.43	3.39	3.97	0.931	2.85	5.01	7.24	7.08	7.76	7.29	7.81	8.94	5.77	12.5
Uranium	µg/L	33^{A} 15^{B}	5_{s} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	3.39	-	3.11	-0.064	-0.655	-0.184	-0.849	0.43	-2.69	-2.41	-2.94
Vanadium	µg/L	n/v	6^{E}	n/v	3.17	2.56	3.23	2.67	2.29	3.1	0.741	1.29	2.55	2.71	0.942	1.94	1.1	1.01	0.719	0.896	0.803	0.869	1.17	1.07	1.15
Zinc	µg/L	341_{EQ1} ^{A} 128_{EQ2} ^{B}	30^{C} 20^{E}	n/v	**23.1^{E}**	12.9	6.59	5.4	4.99	6.15	**21.8^{E}**	**20.1^{E}**	11.5	9.56	12.6	17.6	**30.9^{CE}**	**34.6^{CE}**	**21.1^{E}**	**20.6^{E}**	**21.4^{E}**	**22^{E}**	18.2	13.7	**28.3^{E}**
CCME Zinc Guideline (EQ1)					142.2	137.7	142.2	142.2	142.2	142.2	142.2	95.8	114.4	142.2	142.2	142.2	142.2	142.2	93.8	142.2	142.2	124.7	85	112.4	113.9
CCME Zinc Guideline (EQ2)					171.2	101.1	102.9	148.9	152	117.6	180.6	102.5	97.7	124.9	111.3	133.3	207.4	233.1	99.9	130	148.7	100	57.1	86.5	132.2
Zirconium	µg/L	n/v	4_{s} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	0.108	-	0.0736	0.214	0.328	0.415	0.344	0.474	0.489	0.415	0.681

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006400402
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location													19006400402									
Sample Date					29-Sep-14	3-Nov-14	25-May-15	20-Jul-15	31-Aug-15	29-Sep-15	26-Oct-15	30-May-16	28-Jun-16	26-Jul-16	26-Sep-16	31-Oct-16	29-May-17	10-Jul-17	31-Jul-17	28-Aug-17	25-Sep-17	30-Oct-17	11-Jun-18	26-Jun-18	30-Jul-18
Sample ID					19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02
General Chemistry																									
Alkalinity, Total (as CaCO3)	mg/L	n/v	$^{C}_{\ll 16}$	n/v	61.2	52.8	47.5	78.3	80	101	57.3	32.4	83.9	60.2	>57.7	52	50.5	63.7	101	74.5	95.4	40.5	45.2	61.9	111
Ammonium	mg/L	n/v	n/v	n/v	0.027	0.071	0.05	0.078	0.047	0.048	0.147	0.097	0.128	0.101	0.032	0.028	<0.005	0.025	0.114	0.039	0.133	0.041	0.03	0.03	0.03
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	16.2	11.5	13.9	18.9	24.3	29.8	13.5	2.2	18.8	23.9	19.9	2.7	15.8	19	46.6	25.5	34.4	12.5	10.7	17.3	38.1
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	14	11.8	12	19.7	19.4	25.3	14.6	7.4	15.7	17.4	13.4	13.1	12.9	17.5	24.7	19.1	22.1	10.1	10.3	14.8	27
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	23.6	21.4	18	14.7	13.1	9.2	17.8	29.6	21.6	25.8	25.2	23	17.1	19.6	12.4	18.2	10.9	29.2	22.8	20.8	13.7
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$^{C}_{\geq 9}$	n/v	8.22	12.5	10.68	7.59	6.13	7.9	11.72	7.3	**4.91**^{B}	**3.69**^{B}	-	11.98	7.44	6.02	8.76	6.94	8.24	10.21	7.87	6.51	7.86
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	511,000	436,000	306,000	838,000	939,000	925,000	436,000	223,000	472,000	597,000	569,000	448,000	379,000	532,000	746,000	690,000	925,000	409,000	372,000	517,000	859,000
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	387	239	233	762	808	726	252	179	415	545	-	254	320	479	725	570	858	253	311	455	792
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	219	194	129	394	434	386	174	96.4	202	241	270	190	179	236	295	297	420	179	155	221	378
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.229	0.474	<0.02	<0.02	0.617	0.213	1.28	0.248	0.394	0.709	0.577	0.273	0.33	0.448	0.454	0.436	0.541	0.29	0.26	0.3	<0.03
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate + Nitrite (as N)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{t1} ^{B}	n/v	n/v	0.014	0.021	0.01	0.009	0.028	0.011	0.044	0.027	0.065	0.067	0.039	0.01	0.017	0.024	0.045	0.019	0.022	0.014	0.01	0.01	<0
Nitrite (as N)	mg/L	0.060^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen (Total)	mg/L	n/v	n/v	n/v	0.94	1.01	0.51	0.52	0.98	0.64	2.06	1.03	1	1.36	1.33	0.8	0.77	0.91	1.08	1.03	1.09	0.95	0.98	0.8	0.64
Nitrogen Ammonia/Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	**5.97**^{BC}	**5.73**^{BC}	**6.38**^{BC}	**6.16**^{BC}	**6.26**^{BC}	**6.13**^{BC}	**5.54**^{BC}	6.86	7.12	7.01	-	7.09	7.26	7.01	7.5	6.91	7.12	**8.91**^{C}	**6.03**^{BC}	7.3	8.16
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.94	7.85	7.55	7.84	8.15	8.11	7.76	7.56	7.16	7.77	7.65	7.71	7.72	7.94	8.13	7.97	7.96	7.49	7.54	7.82	8.14
Phosphate (as P)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total	mg/L	n/v	0.030_{t4} ^{E}	n/v	**0.031**^{E}	0.02	0.024	**0.039**^{E}	**0.053**^{E}	**0.049**^{E}	**0.041**^{E}	**0.053**^{E}	**0.07**^{E}	**0.091**^{E}	**0.041**^{E}	0.024	0.03	**0.05**^{E}	**0.036**^{E}	**0.05**^{E}	**0.054**^{E}	**0.042**^{E}	**0.0398**^{E}	**0.0531**^{E}	**0.134**^{E}
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.0101	0.0082	0.0088	0.0094	0.0283	0.025	0.0225	0.0271	0.0477	0.0532	0.0227	0.0134	0.0109	0.0154	0.0086	0.0269	0.0133	0.0098	0	0.01	0.03
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	1.56	1.72	0.4	0.76	1.22	1.02	2.24	1.34	1.22	1.84	1.9	1.6	0.64	0.88	0.7	2.04	1.18	2.04	0.78	1	1.6
Residue,Particulate	mg/L	n/v	n/v	n/v	7.8	2.6	8.6	7.3	9	7.9	8.2	24.4	26.6	26.4	10.8	6.2	12.4	8.1	3.8	10.5	4.9	10.3	10.9	16.5	9.8
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Specific Conductance	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	8	8	8	8	8	8	8	8	8	8	-	8	8	8	8	8	8	8	8	8	8
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}$ $_{t2}$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC MECC Sulfate Guideline (s2)					429	429	309	s2	s2	s2	309	309	429	429	s2	429	309	429	s2	s2	s2	309	309	429	s2
Temperature, Lab	deg C	n/v	n/v	n/v	14	0.9	12.9	21.4	18.9	14.9	3.2	15.2	19.6	22.2	-	2.9	16.1	19.7	22.1	16	19	4.3	16.3	19	20.3
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.71	0.61	0.44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids	mg/L	$^{B}_{5N}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Field	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	10.5	7.7	3.7	10.1	4.3	8.8	12.4	12.9	8.8
Turbidity, Lab	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals																									
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	**286**^{B}	**199**^{B}	**287**^{B}	**157**^{B}	**275**^{B}	**175**^{B}	-	**685**^{B}	**1,230**^{B}	**971**^{B}	**426**^{B}	-	**366**^{B}	**259**^{B}	-	**318**^{B}	53.6	**385**^{B}	**356**^{B}	**353**^{B}	**142**^{B}
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	12.9	9.49	9.07	16.9	19.9	19.6	-	10.7	18.8	21.9	14.6	-	10.5	16.1	23	15.9	18.1	11.3	8.93	13.9	21
Beryllium	µg/L	n/v	$1{,}100_{s3}$ ^{C}	n/v	-0.00952	0.0884	0.0864	-0.0639	-0.0418	0.0493	-	0.0415	0.329	0.263	0.0671	-	-	0.0268	-	0.0505	0.235	0.113	0.02	0.04	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Bismuth	µg/L	n/v	n/v	n/v	-0.927	-1.39	-1.14	-0.753	-5.21	-3.19	-	0.343	0.497	-1.79	-1.32	-	-0.0601	1.04	-0.82	-0.0613	-8.2	1.76	0.61	-4.26	0.77
Cadmium	µg/L	7.1_{STB} ^{A} 0.37_{LTG} ^{B}	0.2^{C} 0.5_{t12} ^{E}	n/v	**1.85**^{BCE}	**1.81**^{BCE}	**0.454**^{BC}	0.171	**0.404**^{BC}	**1.48**^{BCE}	-	**0.774**^{BCE}	**1.21**^{BCE}	**0.5**^{BC}	**0.228**^{C}	-	-0.248	**1.34**^{BCE}	**0.547**^{BCE}	**1.21**^{BCE}	**0.246**^{C}	**0.355**^{C}	**0.58**^{BCE}	**0.3**^{C}	**1.78**^{BCE}
CWQG Cadmium Guideline (STB)					4.65	4.12	2.72	7.7	7.7	7.7	3.68	2.02	4.29	5.13	5.76	4.03	3.79	5.02	6.3	6.34	7.7	3.79	3.28	4.7	7.7
CWQG Cadmium Guideline (LTG)					0.3	0.27	0.2	0.37	0.37	0.37	0.25	0.15	0.28	0.33	0.36	0.27	0.26	0.32	0.37	0.37	0.37	0.26	0.23	0.31	0.37
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	66,500	59,200	35,800	133,000	147,000	121,000	-	30,900	58,400	73,600	83,400	-	54,500	72,400	80,800	88,400	133,000	55,800	48,500	67,700	117,000
Chromium	µg/L	n/v	n/v	n/v	2.13	0.573	0.0872	0.681	0.534	0.39	-	2.1	4.13	2.07	-0.0656	-	-	-1.95	-	-1.02	-1.35	0.0133	1.26	0.99	-0.41
Cobalt	µg/L	n/v	0.9^{E}	n/v	**4.46**^{E}	**4.91**^{E}	**1.07**^{E}	**1.16**^{E}	**3.86**^{E}	**8.62**^{E}	-	**1.23**^{E}	**3.5**^{E}	**3.85**^{E}	**5.05**^{E}	-	**2.32**^{E}	**2.5**^{E}	**6.47**^{E}	**3.13**^{E}	**3.43**^{E}	**1.19**^{E}	**1.11**^{E}	**1.5**^{E}	**3.03**^{E}
Copper	µg/L	4^{+B}	5^{C} 5_{s13} ^{E}	n/v	**7.97BCE**	**5.45BCE**	**5.36BCE**	**5.57BCE**	**4.53B**	**4.34B**	-	**9.55BCE**	**9.28BCE**	**7.06BCE**	**4.86B**	-	**7.63BCE**	**6.42BCE**	3.86	**4.39B**	**8.83BCE**	**9.28BCE**	**5.06BCE**	**5.47BCE**	3.75
CCME Copper Guideline					4	4	2.9	4	4	4	3.8	2.3	4	4	4	4	3.9	4	4	4	4	3.9	3.4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	**472**^{BC}	**376**^{BC}	**466**^{BC}	264	**372**^{BC}	237	-	**1,060**^{BC}	**2,120**^{BC}	**1,650**^{BC}	**861**^{BC}	-	**535**^{BC}	**528**^{BC}	133	**480**^{BC}	220	**766**^{BC}	**600**^{BC}	**661**^{BC}	163
Lead	µg/L	$7\#^{B}$	25_{s14} ^{C} 5_{s15} ^{E}	n/v	-5.77	-6.11	-	-5.15	-6.35	-11.8	-	-3.93	-4.08	-1.52	0.832	-	-1.06	-2.79	-4.61	-5.14	-8.35	0.717	-4.15	-2.07	3.94
CCME Lead Guideline					7	7	4.4	7	7	7	6.4	3	7	7	7	7	6.7	7	7	7	7	6.7	5.6	7	7
PWQO Lead Guideline (s14)					20	20	20	20	20	25	20	10	25	20	20	20	20	20	25	20	25	10	20	20	25
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Lithium	µg/L	n/v	n/v	n/v	1.08	3.18	1.9	8.16	3.03	2.71	-	1.73	1.74	6.24	2.8	-	9.76	9.02	8.79	14.3	46.4	22.9	2.65	-0.83	-1.47
Magnesium	µg/L	n/v	n/v	n/v	12,900	11,200	9,560	15,000	16,300	20,300	-	4,670	13,700	14,000	15,100	-	10,300	13,400	22,700	18,400	21,400	9,670	8,220	12,600	20,800
Manganese	µg/L	$14{,}881_{EQ3}$ ^{A} 710_{EQ4} ^{B}	n/v	n/v	40.5	22.9	33.1	82.3	101	92.4	-	69.3	184	156	56.1	-	49.5	104	28.4	53.6	54.1	35.6	64.1	82.4	157
CCME Manganese Guideline (EQ3)					13248	11910.5	8324.1	14881	14881	14881	10825.4	6445.6	12340.7	14409.6	14881	11694.7	11098.1	14146.8	14881	14881	14881	11098.1	9780.3	13354.2	14881
CCME Manganese Guideline (EQ4)					560	540	570	610	480	460	520	490	830	560	640	540	540	560	430	560	650	730	600	560	460
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	1.93	2.1	1.89	2.87	4.12	4.65	-	0.627	2.16	3.54	3.78	-	1.44	3.89	7.4	1.88	6.05	1.43	1.01	1.5	3.95
Nickel	µg/L	150^{++B}	25^{C}	n/v	5.67	5.05	3.79	2.71	2.55	3.44	-	1.05	4.22	2.98	4.56	-	3.28	3.66	3.66	3.61	3.52	1.74	1.12	2.84	2.79
CCME Nickel Guideline					150	150	116	150	150	150	145.6	93	150	150	150	150	148.8	150	150	150	150	148.8	133.4	150	150
Potassium	µg/L	n/v	n/v	n/v	2,590	2,310	1,230	3,700	5,120	5,660	-	1,400	2,480	3,490	3,810	-	1,690	2,840	6,080	3,530	6,320	2,190	1,660	2,260	5,280
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	**0.659**^{BC}	-0.125	-2.85	-5.55	-7.53	-8.07	-	-0.999	-2.17	-2.76	-2.84	-	-1.86	**1.48**^{BC}	-4.33	-4.64	-3.65	-1.61	-0.61	-1.02	-1.56
Sodium	µg/L	n/v	n/v	n/v	17,600	14,600	11,400	23,300	29,900	36,200	-	7,210	18,800	26,000	24,900	-	13,600	20,900	48,600	26,000	40,200	12,000	11,500	17,500	40,500
Strontium	µg/L	n/v	n/v	n/v	168	136	94.3	285	329	307	-	76.2	156	209	210	-	126	201	328	255	365	139	115	167	321
Tin	µg/L	n/v	n/v	n/v	-1.5	-	-1.34	-7.51	5.68	-	-	-	-	-	-12.1	-	-17.4	-	-3.28	-16.6	-62.1	-	-4.14	9.83	-
Titanium	µg/L	n/v	n/v	n/v	9.42	5.08	9.12	6.07	11.3	7.4	-	17.6	24.4	23.3	11.7	-	10.2	8.42	3.79	9.75	3.86	9.51	11.2	11	4.76
Uranium	µg/L	33^{A} 15^{B}	5_{s} ^{E}	n/v	-2.35	-2.85	-1.12	-	-5.4	-3.86	-	-2.56	**8.31**^{E}	**6.87**^{E}	4.85	-	4.35	4.51	3.84	**5.01**^{E}	**8.37**^{E}	**8.8**^{E}	**5.62**^{E}	**5.63**^{E}	-0.2
Vanadium	µg/L	n/v	6^{E}	n/v	0.745	0.417	0.613	1.08	1.03	1.13	-	1.67	3.5	3.33	1.28	-	1.13	1.53	1.21	1.03	0.577	0.802	1.12	1.38	0.92
Zinc	µg/L	341_{EQ1} ^{A} 128_{EQ2} ^{B}	30^{C} 20^{E}	n/v	**30.8**^{CE}	16.6	16.9	**33.8**^{CE}	**32.2**^{CE}	**32.9**^{CE}	-	**33.3**^{CE}	**47.7**^{CE}	**42.9**^{CE}	**31.3**^{CE}	-	**26.6**^{E}	**24.8**^{E}	19.6	**29.8**^{E}	**21.9**^{E}	**22.8**^{E}	**22.4**^{E}	12.1	**23.9**^{E}
CCME Zinc Guideline (EQ1)					127.1	114.9	81.8	142.2	142.2	142.2	105	64.2	118.8	137.7	142.2	112.9	107.5	135.3	142.2	142.2	142.2	107.5	95.3	128.1	142.2
CCME Zinc Guideline (EQ2)					91.4	84.4	68.3	143.3	116.5	93.6	76.1	62.7	154.4	119.1	144.9	95.4	79.5	91.1	80.4	107.4	122.5	118.6	90.1	96.7	104.9
Zirconium	µg/L	n/v	4_{s} ^{E}	n/v	0.466	0.225	0.409	0.222	0.298	0.0857	-	1.15	1.36	1.21	0.473	-	0.392	0.53	0.0714	0.016	-0.195	0.382	0.52	0.52	0.39

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006400402
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																				
Sample Date					20-Aug-18	24-Sep-18	29-Oct-18	24-Jun-19	29-Jul-19	19-Aug-19	23-Sep-19	28-Oct-19	19006400402 3-Nov-20	26-Apr-21	25-May-21	5-Jul-21	3-Aug-21	7-Sep-21	27-Sep-21	25-Oct-21	16-Nov-21
Sample ID					19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402	19006400402
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02	HIST_190064004 02
General Chemistry																					
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\leq 16}^{C}$	n/v	111	67.7	46.5	55.9	106	86	94	55.3	58.8	47.4	47.8	64.9	110	118	82.4	69.3	72.5
Ammonium	mg/L	n/v	n/v	n/v	<0.01	0.02	<0.01	0.04	0.068	0.061	0.059	0.049	0.072	-	-	-	-	-	-	-	-
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	34.9	28.2	14.4	17.2	60.4	39.8	34.9	13	15.4	14.8	10.1	15.9	38	30.2	21.2	26.9	18.8
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	27.2	15.3	10	14.4	26	22	24.4	12	14.3	11	10.8	16.7	29	30.3	22.6	17.7	17.1
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	13	5.6	23.6	17.3	11.3	8.5	10.3	29.2	21.5	16.6	24.8	26.1	10	10.6	24.3	25.5	23
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$_{\geq 9}^{C}$	n/v	7.59	10.45	12	7.4	10.2	9.12	5.9	10.21	12.09	11.95	8.09	6.78	7.05	6.93	8.48	10.86	12.6
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	749,000	2,010,000	415,000	516,000	908,000	1,200,000	1,100,000	288,000	555,000	-	-	-	-	-	-	-	-
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	674	1,518	224	464	842	1,082	908	129	583	344	259	381	1,020	1,070	511	563	580
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	287	1,200	178	-	278	454	481	115	219	141	101	158	431	468	207	230	264
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	<0.02	0.24	0.26	0.275	1.39	0.259	1.02	0.345	0.648	0.33	-	0.24	0.05	0.06	0.12	0.54	0.41
Nitrate (as N)	mg/L	124^{A} 3.0^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate + Nitrite (as N)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	0.34	0.19	0.27	0.05	0.07	0.13	0.56	0.42
Nitrite	mg/L	$0.20_{\leq 1}$ ^{B}	n/v	n/v	<0	0.02	0.01	0.031	0.096	0.018	0.025	0.017	0.02	-	-	-	-	-	-	-	-
Nitrite (as N)	mg/L	0.060^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	0.013	0.018	0.034	0.004	0.004	0.012	0.023	0.008
Nitrogen (Total)	mg/L	n/v	n/v	n/v	0.47	0.45	0.83	0.99	2.02	1.09	1.59	1.3	1.43	0.99	1.11	1.32	0.66	0.6	1.02	1.7	1.29
Nitrogen Ammonia/Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	0.049	0.07	0.07	0.05	0.03	0.05	0.05	0.04
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	8.04	7.95	7.42	7.61	**8.8^{C}**	8.47	8.3	**8.82^{C}**	7.67	7.33	6.93	7.11	7.27	6.73	7.12	7.57	7.01
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	8.08	7.97	7.49	7.62	8.3	8.07	7.9	7.66	7.64	7.71	7.6	7.7	7.95	7.92	7.55	7.43	7.61
Phosphate (as P)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	0.014	0.0165	0.039	0.016	0.041	0.023	0.025	0.015
Phosphorus, Total	mg/L	n/v	$0.030_{\leq 4}$ ^{E}	n/v	**0.0735^{E}**	**0.0702^{E}**	0.023	-	**0.0531^{E}**	**0.0523^{E}**	**0.0644^{E}**	**0.0478^{E}**	**0.0307^{E}**	**0.0356^{E}**	**0.0563^{E}**	**0.0954^{E}**	**0.0478^{E}**	**0.0879^{E}**	**0.0617^{E}**	**0.0379^{E}**	**0.0374^{E}**
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.02	<0	0	0.0113	0.0082	0.0064	0.0293	0.0253	0.0096	-	-	-	-	-	-	-	-
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	1.74	0.58	2	0.78	0.76	0.74	1.28	2.32	1.84	0.892	0.913	1.45	0.62	1.87	2.41	2	1.6
Residue,Particulate	mg/L	n/v	n/v	n/v	6	13.4	5.2	15.6	10.6	8.5	8.4	7.6	6.5	-	-	-	-	-	-	-	-
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Specific Conductance	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	200	202	332	881	1,290	502	310	326
Stream Condition	none	n/v	n/v	n/v	8	8	8	8	8	8	8	8	8	-	-	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}$ $_{\leq 2}$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC MECC Sulfate Guideline (s2)					s2	s2	309	s2	s2	s2	s2	309	429	309	309	309	s2	s2	429	429	s2
Temperature, Lab	deg C	n/v	n/v	n/v	20.8	12.1	0.3	18.4	20.6	18.7	16.5	4.2	1.2	2.9	13.7	18.9	17.9	15.2	9.9	4.8	0.4
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids	mg/L	$_{\leq N}$ ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	10.4	22.5	16.3	5.67	11.6	13.2	8.65	8.1
Turbidity, Field	NTU	n/v	n/v	n/v	5.7	8.5	4.3	-	-	-	-	-	6.6	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	9.9	19.4	16.4	4	11.8	13.7	8.3	7.8
Metals																					
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	**109^{B}**	**194^{B}**	**241^{B}**	-	**154^{B}**	**220^{B}**	**234^{B}**	**407^{B}**	**306^{B}**	**445^{B}**	**511^{B}**	**416^{B}**	**134^{B}**	**218^{B}**	**394^{B}**	**305^{B}**	**285^{B}**
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	µg/L	n/v	n/v	n/v	20.2	46	10.1	-	19.1	28.3	23.8	11.1	12.4	10.7	12.2	15.4	23.2	28.4	14.1	13.1	9.88
Beryllium	µg/L	n/v	$1,100_{\leq 3}$ ^{C}	n/v	0.08	-0.06	0.04	-	-0.0786	-0.0205	-0.0307	0.0392	0.0321	<0.1	<0.1	<0.1	<0.3	<0.2	-	<0.1	<0.1
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Bismuth	µg/L	n/v	n/v	n/v	-2.86	-9.2	0	-	-5.43	-7.42	-7.72	-4.12	-7.82	<5	<5	<5	<15	<10	<5	<5	<5
Cadmium	µg/L	7.1_{STB} ^{A} 0.37_{LTG} ^{B}	0.2^{C} $0.5_{\leq 12}$ ^{E}	n/v	**0.35^{C}**	-0.3	**0.67^{BCE}**	-	**1.04^{BCE}**	**1.81^{BCE}**	**1.76^{BCE}**	**0.737^{BCE}**	**0.646^{BCE}**	**<0.9**	**<0.9**	**1.06^{BCE}**	**<3**	**<2**	**<0.9**	**<0.9**	**<0.9**
CWQG Cadmium Guideline (STB)					6.13	7.7	3.77	7.08	5.93	7.7	7.7	2.42	4.65	2.98	2.12	3.34	7.7	7.7	4.4	4.89	5.63
CWQG Cadmium Guideline (LTG)					0.37	0.37	0.26	0.37	0.37	0.37	0.37	0.18	0.3	0.21	0.16	0.23	0.37	0.37	0.29	0.32	0.35
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	85,900	457,000	51,600	-	75,400	156,000	153,000	29,300	66,500	41,100	28,600	41,600	136,000	155,000	52,400	63,400	79,200
Chromium	µg/L	n/v	n/v	n/v	0.8	13	1.18	-	1.25	0.313	0.77	0.793	0.948	1.02	<1	1.47	<3	<2	1.24	<1	<1
Cobalt	µg/L	n/v	0.9^{E}	n/v	**1.47^{E}**	**2.88^{E}**	**1.22^{E}**	-	**9.23^{E}**	**4.89^{E}**	**6.57^{E}**	**2.03^{E}**	**3.63^{E}**	**1.69^{E}**	**2^{E}**	**1.09^{E}**	**3.88^{E}**	**3.57^{E}**	**1.64^{E}**	**1.62^{E}**	***<1***
Copper	µg/L	4^{+*B}	5^{C} $5_{\leq 13}$ ^{E}	n/v	2.3	1.68	**5.58BCE**	-	**5.3BCE**	3.96	**4.62B**	**6.29BCE**	**6.8BCE**	**6.26BCE**	**8BCE**	**8.03BCE**	**5.78BCE**	3.77	**5.98BCE**	**5.36BCE**	**5.71BCE**
CCME Copper Guideline					4	4	3.9	4	4	4	4	2.7	4	3.2	2.4	3.5	4	4	4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	176	**309^{BC}**	**338^{BC}**	-	189	258	**342^{BC}**	**658^{BC}**	**466^{BC}**	**461^{BC}**	**650^{BC}**	**735^{BC}**	158	271	**552^{BC}**	**527^{BC}**	**563^{BC}**
Lead	µg/L	$7\#^{B}$	$25_{\leq 14}$ ^{C} $5_{\leq 15}$ ^{E}	n/v	-6.75	-34.9	-9.03	-	-5.68	-7.78	-7.46	-4.17	-6.48	**<7**	**<7**	**<7**	**<21**	**<14**	**<7**	**<7**	**<7**
CCME Lead Guideline					7	7	6.6	7	7	7	7	3.8	7	4.9	3.2	5.7	7	7	7	7	7
PWQO Lead Guideline (s14)					25	20	20	20	25	25	25	20	20	20	20	20	25	25	25	20	20
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Lithium	µg/L	n/v	n/v	n/v	-4.55	-20.3	1.62	-	6.11	7.14	6.94	4.01	2.02	<5	<5	<5	<15	<10	<5	<5	<5
Magnesium	µg/L	n/v	n/v	n/v	17,500	14,900	11,900	-	21,800	15,700	24,100	10,200	12,900	9,390	7,000	13,200	22,100	19,600	18,500	17,300	16,100
Manganese	µg/L	$14,881_{EQ3}$ ^{A} 710_{EQ4} ^{B}	n/v	n/v	145	253	24.5	-	43.5	102	68.8	29.1	31.6	36.6	69.3	101	79.1	231	41.6	35.5	47.3
CCME Manganese Guideline (EQ3)					14881	14881	11043.6	14881	14881	14881	14881	7525.5	13248	9000.3	6714.8	9946.3	14881	14881	12608.5	13830.5	14881
CCME Manganese Guideline (EQ4)					430	720	730	710	430	480	650	530	640	500	530	520	650	650	640	760	640
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	3.47	1.93	1.87	-	12.8	4.16	4.22	0.918	1.11	<2	<2	<2	<6	<4	<2	<2	<2
Nickel	µg/L	150^{**B}	25^{C}	n/v	2.87	-0.19	3.02	-	4.19	3.55	5.35	3.01	5.67	3.74	4	4.1	8.38	5.22	3.73	4.15	2.39
CCME Nickel Guideline					150	150	148.1	150	150	150	150	106.3	150	124.1	96.3	135.3	150	150	150	150	150
Potassium	µg/L	n/v	n/v	n/v	4,160	13,800	1,830	-	12,800	10,700	9,360	1,850	3,580	1,610	1,000	1,740	5,080	6,390	2,280	3,210	2,910
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	-0.87	-13.8	**2.13^{BC}**	-	**2.02^{BC}**	-0.46	-1.77	**0.434^{BC}**	**0.104^{C}**	**<9**	**<9**	**<9**	**<27**	***<18***	**<9**	**<9**	**<9**
Sodium	µg/L	n/v	n/v	n/v	35,700	58,800	14,400	-	85,700	61,700	51,700	13,800	22,100	11,900	10,000	14,900	37,700	35,900	19,100	23,100	19,000
Strontium	µg/L	n/v	n/v	n/v	266	795	132	-	619	634	450	98.1	191	112	95.9	124	390	385	179	247	214
Tin	µg/L	n/v	n/v	n/v	-3.04	-21.1	-	-	1.52	1.12	1.07	0.999	-10.7	<9	<9	<9	<27	<18	<9	<9	<9
Titanium	µg/L	n/v	n/v	n/v	4.09	10.1	6.08	-	3.71	6.96	7.82	12.3	9.75	15	14.3	10.2	5.28	7.34	10.6	6.36	6.21
Uranium	µg/L	33^{A} 15^{B}	$5_{\leq}^{E}$	n/v	4.54	**27.4**	4.29	-	3.71	**6.55^{E}**	0.544	-0.209	2.16	3.84	3	<3	**<9**	**<6**	3.18	<3	<3
Vanadium	µg/L	n/v	6^{E}	n/v	1.15	-0.17	0.59	-	1.21	0.552	0.707	0.901	0.598	0.799	1	1.49	<2	1.5	0.91	<0.5	<0.5
Zinc	µg/L	341_{EQ1} ^{A} 128_{EQ2} ^{B}	30^{C} 20^{E}	n/v	13.3	**84.1^{CE}**	**28.4^{E}**	-	4.9	3.9	14	15.9	17.6	16.3	**20.5^{E}**	16.9	11.6	12	13.9	14.1	12
CCME Zinc Guideline (EQ1)					142.2	142.2	107	142.2	142.2	142.2	142.2	74.3	127.1	88.1	66.7	96.8	142.2	142.2	121.3	132.4	142.2
CCME Zinc Guideline (EQ2)					83.1	252	108.4	155.1	63.7	109.2	143.1	67.9	112.5	63.2	59.1	84.9	122.3	138.7	120.5	149.7	141.3
Zirconium	µg/L	n/v	$4_{\leq}^{E}$	n/v	0.29	-0.42	0.27	-	0.235	0.0911	0.127	0.681	0.446	<1	1	<1	<3	<2	<1	<1	<1

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006401420
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					19006401420																			
Sample Date					26-Nov-72	19-Dec-72	28-Jan-73	18-Feb-73	18-Mar-73	15-Apr-73	20-May-73	17-Jun-73	22-Jul-73	19-Aug-73	23-Sep-73	21-Oct-73	25-Nov-73	27-Dec-73	27-Jan-74	17-Feb-74	24-Mar-74	28-Apr-74	30-Jun-74	28-Jul-74	25-Aug-74
Sample ID					19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{s16}^{C}$	n/v	42	41	42	43	42	35	28	30	38	38	38	35	38	40	43	56	45	32	35	37	38
Ammonium	mg/L	n/v	n/v	n/v	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.09	0.01	0.02
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	1.2	0.6	0.6	2	0.8	1	1	0.8	0.4	1.2	0.6	0.8	0.6	1.2	1	0.8	0.2	1.6	0.2	0.2	0.4
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	2	1	2	3	2	3	1	1	1	3	3	2	1	6	1	2	1	2	1	1	1
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$_{s9}^{C}$	n/v	12	13	13	14	12	12	10	6	7	9	9	10	12	12	12	11	**5^{B}**	12	7	8	9
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	95	94	108	113	107	88	75	81	90	92	92	86	90	101	104	143	110	89	78	91	90
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	52	50	52	56	58	48	38	42	50	44	50	46	46	52	50	80	50	42	36	44	44
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.04	0.1	0.06	0.01	0.12	0.11	0.03	0.02	0.01	0.01	0.01	0.01	0.05	0.03	0.03	0.06	0.08	0.14	0.01	0.01	0.01
Nitrate + Nitrite (as N)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{s4} ^{B}	n/v	n/v	0.004	0.004	0.003	0.002	0.002	0.004	0.004	0.004	0.004	0.003	0.006	0.005	0.005	0.006	0.003	0.005	0.005	0.006	0.006	0.01	0.01
Nitrite (as N)	mg/L	0.060^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen (Total)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen Ammonia/Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.6	7.5	7.7	7.6	7.7	7.3	7.5	7.6	7	7.5	7.7	7.5	7.6	7.4	7.1	7.4	7.7	6.9	7.6	6.5	7.7
Phosphate (as P)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total	mg/L	0.030_{s4} ^{E}		n/v	0.01	0.01	0.01	0.01	0.03	0.01	0.02	0.01	0.02	0.01	0.02	0.02	0.008	0.008	**0.08^{E}**	0.01	0.01	0.02	0.02	0.01	0.03
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.004	0.002	0.002	0.002	0.002	0.006	0.007	0.002	0.002	0.006	0.006	0.01	0.004	0.007	0.001	0.002	0.006	0.005	0.01	0.001	0.006
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	5	0	0	0	10	15	5	5	5	5	0	0	0	10	20	0	10	10	10	10	10
Residue-Filterable	mg/L	n/v	n/v	n/v	95	80	60	80	100	75	75	75	65	65	80	100	130	70	120	60	60	58	51	59	60
Specific Conductance	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	-	4	4	4	4	6	36	386	86	86	6	68	4	4	4	4	4	3	6	6	8
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}$ $_{s2}$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC MECC Sulfate Guideline (s2)					218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	309	218	218	218	218	218
Temperature, Lab	deg C	n/v	n/v	n/v	1	0	0	0	0	5	10	17	22	22	9	8	0	0	0	0	0	2	18	22	20
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.35	0.34	0.3	0.33	0.38	0.29	0.38	0.38	0.4	0.4	0.44	0.37	0.31	0.3	0.64	0.42	0.3	0.39	0.43	0.34	0.54
Total Residue	mg/L	n/v	n/v	n/v	100	80	60	80	110	90	80	80	70	70	80	100	130	80	140	60	70	68	61	69	70
Total Suspended Solids	mg/L	$_{SN}^{B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Field	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	2	3	1	1.2	3.1	1.6	1.5	1.3	1.3	1.3	1.3	1	0.75	7.8	6.3	2.8	2	2.5	1.3	1.3	1.3
Metals																									
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	5	100
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	11_{s3} ^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	1100	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	µg/L	1.0_{STB} ^{A} 0.09_{LTG} ^{B}	0.2^{C} 0.1_{s12} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					1.08	1.04	1.08	1.16	1.21	1	0.79	0.87	1.04	0.91	1.04	0.95	0.95	1.08	1.04	1.67	1.04	0.87	0.74	0.91	0.91
CWQG Cadmium Guideline (LTG)					0.09	0.09	0.09	0.1	0.1	0.09	0.07	0.08	0.09	0.08	0.09	0.08	0.08	0.09	0.09	0.13	0.09	0.08	0.07	0.08	0.08
PWQO Cadmium Guideline					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	2^{*B}	5^{C} 5_{s13} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Copper Guideline					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	200	200	200	150	**450^{BC}**	300	250	250	**400^{BC}**	300	**350^{BC}**	**400^{BC}**	200	200	**1,600^{BC}**	**350^{BC}**	300	**450^{BC}**	**400^{BC}**	250	200
Lead	µg/L	$1\#^{B}$	10_{s14} ^{C} 3_{s15} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Lead Guideline					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2.4	1	1	1	1	1
PWQO Lead Guideline (s14)					20	20	20	20	20	10	10	10	10	10	10	10	10	10	20	20	20	10	10	10	10
PWQO Lead Guideline (s15)					3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Lithium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$3{,}600_{EQ3}$ ^{A} 430_{EQ4} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					3748.8	3621.9	3748.8	4000.8	4126	3494.4	2846.4	3107.8	3621.9	3237.4	3621.9	3366.2	3366.2	3748.8	3621.9	5472.1	3621.9	3107.8	2714.4	3237.4	3237.4
CCME Manganese Guideline (EQ4)					430	430	390	430	390	380	350	350	500	350	390	350	350	490	500	560	390	350	350	330	320
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	25^{**B}	25^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Nickel Guideline					25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	80.7	25	25	25	25	25
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tin	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium	µg/L	33^{A} 15^{B}	5_{*} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	37_{EQ1} ^{A} 7.0_{EQ2} ^{B}	30^{C} 20^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Zinc Guideline (EQ1)					38.4	37.1	38.4	40.8	42	35.9	29.6	32.1	37.1	33.4	37.1	34.6	34.6	38.4	37.1	54.9	37.1	32.1	28.2	33.4	33.4
CCME Zinc Guideline (EQ2)					22	23	20.2	23.6	22.4	26	17.7	17.9	34.5	20.3	19.5	21.2	19.6	25.8	31.8	38.9	19.5	31.7	15.5	46	17.3
Zirconium	µg/L	n/v	4_{*} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006401420
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					19006401420																			
Sample Date					22-Sep-74	3-Nov-74	1-Dec-74	29-Dec-74	26-Jan-75	16-Feb-75	23-Mar-75	27-Apr-75	25-May-75	22-Jun-75	27-Jul-75	31-Aug-75	28-Sep-75	26-Oct-75	30-Nov-75	28-Dec-75	25-Jan-76	22-Feb-76	21-Mar-76	25-Apr-76	24-May-76
Sample ID					19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\leq 10}{}^{C}$	n/v	37	35	38	38	44	42	59	34	30	28	37	45	35	-	38	40	41	59	49	26	25
Ammonium	mg/L	n/v	n/v	n/v	0.02	0.01	0.01	0.01	0.01	0.01	0.1	0.02	0.04	0.03	0.02	0.21	0.01	0.01	0.01	0.02	0.01	0.006	0.002	0.004	0.01
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	0.6	1.8	1.2	2	1.6	0.6	2	0.8	0.6	0.8	0.6	2.8	0.4	0.8	1.2	0.6	0.4	1	0.6	1	0.6
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	1	1	1	1	1	1	7	1	1	1	5	1	24	1	1	1	1	1.8	10	1.4	1.1
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}{}^{B}$	$_{\geq 9}{}^{C}$	n/v	7	12	8	13	12	10	14	12	10	7	7	7	10	10	12	10	12	12	13	**3**^{B}	10
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	93	90	105	95	118	105	215	89	82	94	94	112	100	100	110	102	335	150	136	80	70
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	45	42	41	45	52	48	97	44	39	37	46	55	46	-	45	49	50	76	60	37	35
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.01	0.01	0.02	0.04	0.05	0.05	1.3	0.11	0.03	1.8	0.01	0.01	0.01	0.04	0.06	0.03	0.07	0.18	0.12	0.05	0.04
Nitrate + Nitrite (as N)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	$0.20_{s4}{}^{B}$	n/v	n/v	0.004	0.003	0.003	0.003	0.002	0.003	0.02	0.004	0.004	0.005	0.01	0.004	0.003	0.005	0.004	0.003	0.003	0.004	0.002	0.005	0.005
Nitrite (as N)	mg/L	0.060^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen (Total)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen Ammonia/Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.4	7.2	7.9	7.4	7.1	7.4	7.4	7.4	7.1	7.4	7.4	7.7	7.8	-	7.1	7.8	7.4	8.1	8.1	7.4	7.69
Phosphate (as P)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total	mg/L	n/v	$0.030_{s4}{}^{E}$	n/v	0.01	0.008	0.01	**0.05**^{E}	**0.04**^{E}	0.007	**0.12**^{E}	0.02	0.01	0.02	**0.04**^{E}	**0.09**^{E}	0.01	0.01	**0.11**^{E}	0.008	0.008	0.01	0.01	0.01	0.01
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.005	0.002	0.003	0.007	0.007	0.003	0.02	0.005	0.002	0.003	0.007	0.03	0.004	0.005	0.003	0.002	0.004	0.002	0.002	0.002	0.001
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	15	15	15	15	15	1	4	7	4	12	18	23	3	-	128	1	1	1.4	3.3	4.2	-
Residue-Filterable	mg/L	n/v	n/v	n/v	60	65	68	60	80	69	140	58	52	62	62	96	65	-	72	65	218	98	88	52	46
Specific Conductance	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	8	6	4	4	4	4	4	39	6	6	7	79	8	6	4	4	4	4	4	3	3
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}{}_{s2}$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC MECC Sulfate Guideline (s2)					218	218	218	218	218	218	309	218	218	218	218	218	218	218	218	218	218	309	218	218	218
Temperature, Lab	deg C	n/v	n/v	n/v	9	4	0	0	0	0	0	1	20	22	22	19	11	8	0	0	0	0	0	1	7
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.38	0.32	0.34	0.48	0.32	0.34	0.85	0.4	0.36	0.49	0.52	0.72	0.31	0.33	0.64	0.39	0.3	0.41	0.3	0.39	0.27
Total Residue	mg/L	n/v	n/v	n/v	75	80	83	75	95	70	144	65	56	74	80	119	68	-	300	66	219	99	91	-	-
Total Suspended Solids	mg/L	$_{\leq N}{}^{B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Field	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	3.7	1.2	2.5	1.1	1	5.1	1.2	2	1.1	1.6	3.6	3	1.5	8	8	1.5	1.1	0.9	2.2	2.6	2.2
Metals																									
Aluminum	µg/L	$5/100_{VAR1}{}^{B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	$11_{s3}{}^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					11	11	11	11	11	11	1100	11	11	11	11	11	11	11	11	11	11	1100	11	11	11
Bismuth	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	µg/L	$1.0_{STB}{}^{A}$ $0.09_{LTG}{}^{B}$	0.2^{C} $0.1_{s12}{}^{E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					0.93	0.87	0.85	0.93	1.08	1	2.03	0.91	0.81	0.76	0.95	1.14	0.95	0.97	0.93	1.02	1.04	1.59	1.25	0.76	0.72
CWQG Cadmium Guideline (LTG)					0.08	0.08	0.08	0.08	0.09	0.09	0.15	0.08	0.07	0.07	0.08	0.1	0.08	0.08	0.08	0.09	0.09	0.13	0.1	0.07	0.07
PWQO Cadmium Guideline					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	2^{*B}	5^{C} $5_{s13}{}^{E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Copper Guideline					2	2	2	2	2	2	2.3	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	**700**^{BC}	250	**500**^{BC}	**2,000**^{BC}	200	200	250	**400**^{BC}	200	**340**^{BC}	**700**^{BC}	**700**^{BC}	260	-	**5,700**^{BC}	150	150	200	300	270	260
Lead	µg/L	$1\#^{B}$	$10_{s14}{}^{C}$ $3_{s15}{}^{E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Lead Guideline					1	1	1	1	1	1	3.1	1	1	1	1	1	1	1	1	1	1	2.2	1.7	1	1
PWQO Lead Guideline (s14)					10	10	10	10	20	20	20	10	10	10	10	20	10	20	10	10	20	20	20	10	10
PWQO Lead Guideline (s15)					3	3	3	3	3	3	5	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Lithium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$3{,}600_{EQ3}{}^{A}$ $430_{EQ4}{}^{B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					3301.9	3107.8	3042.7	3301.9	3748.8	3494.4	6480.8	3237.4	2912	2780.5	3366.2	3938	3366.2	3430.4	3301.9	3558.2	3621.9	5231.1	4250.7	2780.5	2648.1
CCME Manganese Guideline (EQ4)					380	380	320	380	500	380	560	380	380	380	380	390	320	350	380	320	490	350	320	380	350
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	25^{**B}	25^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Nickel Guideline					25	25	25	25	25	25	93.4	25	25	25	25	25	25	25	25	25	25	77.6	64.8	25	25
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tin	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium	µg/L	33^{A} 15^{B}	$5_{*}{}^{E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	$37_{EQ1}{}^{A}$ $7.0_{EQ2}{}^{B}$	30^{C} 20^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Zinc Guideline (EQ1)					34	32.1	31.5	34	38.4	35.9	64.5	33.4	30.2	28.9	34.6	40.2	34.6	35.3	34	36.5	37.1	52.6	43.2	28.9	27.6
CCME Zinc Guideline (EQ2)					22.5	24.9	13.7	22.5	33	24	46.7	22.1	25.1	18.7	23	21.3	16.6	20	28.8	17.6	24.9	20.9	16.7	18.7	14
Zirconium	µg/L	n/v	$4_{*}{}^{E}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006401420
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					19006401420																			
Sample Date					30-Jun-76	27-Jul-76	29-Aug-76	30-Sep-76	31-Oct-76	28-Nov-76	28-Dec-76	30-Jan-77	4-Mar-77	30-Mar-77	24-Apr-77	30-May-77	26-Jun-77	24-Jul-77	21-Aug-77	25-Sep-77	20-Oct-77	27-Nov-77	28-Dec-77	29-Jan-78	1-Mar-78
Sample ID					19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{s16}^{C}$	n/v	38	40	39	42	39	42	56	258	101	41	26	34	37	39	46	43	41	39	44	45	51
Ammonium	mg/L	n/v	n/v	n/v	0.07	0.01	0.002	0.01	0.004	0.01	0.09	0.004	0.03	0.08	0.03	0.01	0.02	0.03	0.02	0.02	0.01	0.004	0.02	-	0.006
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	0.4	0.4	0.2	1	0.7	0.6	0.6	0.8	0.8	0.6	1.4	1.2	0.6	0.8	-	0.4	1	1.8	3	1.2	0.2
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	1.1	0.8	0.8	0.6	0.8	1.2	2.7	1	3.8	1.2	1.4	1.1	1.1	1	1.2	1.4	1	1.8	1.1	-	1.3
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$_{s9}^{C}$	n/v	8	8	7	11	10	10	7	-	8	9	**5^{B}**	8	7	7	**5^{B}**	7	**3^{B}**	8	9	12	**3^{B}**
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	93	94	98	114	108	108	140	120	250	105	74	88	102	100	106	104	101	100	108	108	385
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	44	46	38	48	42	51	69	57	121	43	31	41	45	40	52	49	49	47	52	54	56
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.005	0.005	0.005	0.005	0.008	0.01	0.2	0.09	0.49	0.13	0.09	0.03	0.01	0.005	0.005	0.007	0.01	0.02	0.02	0.02	0.17
Nitrate + Nitrite (as N)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{s7} ^{B}	n/v	n/v	0.003	0.002	0.001	0.002	0.002	0.002	0.006	0.001	0.01	0.002	0.004	0.003	0.004	0.002	0.003	0.003	0.002	0.002	0.005	0.003	0.002
Nitrite (as N)	mg/L	0.060^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen (Total)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen Ammonia/Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.97	7.96	7.4	7.59	7.67	7.7	7.75	7.51	8.26	7.48	7.15	7.46	7.65	7.48	7.84	7.41	8.02	**1.2^{BC}**	7.42	7.42	7.4
Phosphate (as P)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total	mg/L	0.030_{s4} ^{E}		n/v	0.009	0.02	0.01	0.004	0.01	0.007	0.007	0.01	0.01	0.02	0.03	0.01	0.01	0.03	0.01	0.01	0.01	**5.25^{E}**	0.01	0.007	0.01
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.002	0.009	0.003	0.002	0.002	0.001	0.006	0.001	0.002	0.01	0.004	0.001	0.003	0.004	0.006	0.005	0.002	0.001	0.002	0.004	0.001
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	3	7.5	2.7	2	17	4.6	2.7	3.7	6.2	134	27	4.3	6.9	43	3.3	2.1	1.2	152	2.5	-	2.1
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Specific Conductance	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	8	8	8	6	6	4	4	-	4	4	3	6	8	8	8	6	6	4	4	4	4
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}$ $_{s2}$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC MECC Sulfate Guideline (s2)					218	218	218	218	218	218	218	218	309	218	218	218	218	218	218	218	218	218	218	218	218
Temperature, Lab	deg C	n/v	n/v	n/v	23	20	14	10	2	0	0	-	0	0	5	19	19	23	15	13	5	0	0	0	0
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.35	0.34	0.24	0.35	0.29	0.26	0.14	0.32	0.66	0.74	0.5	0.32	0.48	0.43	0.24	0.43	0.37	1.3	0.32	0.38	0.34
Total Residue	mg/L	n/v	n/v	n/v	65	70	68	77	89	77	94	82	169	202	66	63	72	108	71	70	67	217	72	-	252
Total Suspended Solids	mg/L	$_{SN}^{B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Field	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	1.4	2.9	1	1.5	3	1	1.2	2.2	1.4	8	4.8	1.9	5	2.1	1.6	1.6	2.1	53	1.7	1.8	1.4
Metals																									
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	5	100	100	100
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	11_{s3} ^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					11	11	11	11	11	11	11	11	1100	11	11	11	11	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	µg/L	1.0_{STB} ^{A} 0.09_{LTG} ^{B}	0.2^{C} 0.1_{s12} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CWQG Cadmium Guideline (STB)					0.91	0.95	0.79	1	0.87	1.06	1.44	1.19	2.55	0.89	0.64	0.85	0.93	0.83	1.08	1.02	1.02	0.97	1.08	1.12	1.16
CWQG Cadmium Guideline (LTG)					0.08	0.08	0.07	0.09	0.08	0.09	0.12	0.1	0.19	0.08	0.06	0.08	0.08	0.07	0.09	0.09	0.09	0.08	0.09	0.1	0.1
PWQO Cadmium Guideline					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	µg/L	2^{*B}	5^{C} 5_{s13} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Copper Guideline					2	2	2	2	2	2	2	2	2.8	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	120	280	50	170	**360^{BC}**	160	170	260	120	**940^{BC}**	**600^{BC}**	220	**470^{BC}**	**570^{BC}**	180	220	200	**7,220^{BC}**	150	-	120
Lead	µg/L	$1\#^{B}$	10_{s14} ^{C} 3_{s15} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Lead Guideline					1	1	1	1	1	1	2	1	4.1	1	1	1	1	1	1	1	1	1	1	1	1
PWQO Lead Guideline (s14)					10	10	10	20	10	20	20	25	25	20	10	10	10	10	20	20	20	10	20	20	20
PWQO Lead Guideline (s15)					3	3	3	3	3	3	3	3	5	3	3	3	3	3	3	3	3	3	3	3	3
Lithium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	$3{,}600_{EQ3}$ ^{A} 430_{EQ4} ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Manganese Guideline (EQ3)					3237.4	3366.2	2846.4	3494.4	3107.8	3685.4	4805.6	4063.5	7869.1	3172.7	2380.4	3042.7	3301.9	2977.5	3748.8	3558.2	3558.2	3430.4	3748.8	3875.1	4000.8
CCME Manganese Guideline (EQ4)					320	320	380	350	350	390	390	430	370	380	380	380	350	380	390	380	270	290	490	490	490
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	µg/L	25^{**B}	25^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Nickel Guideline					25	25	25	25	25	25	72.1	25	110.5	25	25	25	25	25	25	25	25	25	25	25	25
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tin	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium	µg/L	33^{A} 15^{B}	5_{*} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	37_{EQ1} ^{A} 7.0_{EQ2} ^{B}	30^{C} 20^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCME Zinc Guideline (EQ1)					33.4	34.6	29.6	35.9	32.1	37.8	48.6	41.4	77.5	32.8	24.9	31.5	34	30.8	38.4	36.5	36.5	35.3	38.4	39.6	40.8
CCME Zinc Guideline (EQ2)					13.9	14.6	19.2	20.5	16.9	19.9	25.4	25.8	28.5	20.2	19.4	19.7	18.4	18.9	18.1	24.2	14.7	3675.8	25.4	26.4	27.7
Zirconium	µg/L	n/v	4_{*} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006401420
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																								
Sample Date					25-Mar-78	5-Nov-07	27-May-08	23-Jun-08	29-Jul-08	25-Aug-08	23-Sep-08	20-Oct-08	25-May-09	15-Jun-09	1-Sep-09	21-Sep-09	26-Oct-09	23-Nov-09	3-May-10	25-May-10	21-Jun-10	30-Aug-10	27-Sep-10	1-Nov-10	30-May-11
Sample ID					19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{s16}^{C}$	n/v	114	38.7	29.6	33.1	40.9	38.7	37.2	41	27.7	34.7	51.3	45.1	36	40.7	47	48.1	62.4	58.9	42.8	40.9	33.3
Ammonium	mg/L	n/v	n/v	n/v	0.03	0.013	0.012	<0.007	<0.007	0.014	0.012	<0.012	0.01	<0.009	<0.006	0.011	<0.005	<0.008	0.032	0.015	0.022	0.024	0.012	0.01	0.022
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	4.7	2.3	2.5	2.2	1.7	1.7	1.6	2.3	2.3	1.9	1.9	2.1	2.3	2.2	3.3	2.9	3.4	1.6	3.9	3.4	61.9
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	7.9	7	6.2	7.5	8.4	8.4	9.1	4.6	7.1	10.4	10.4	7.6	9	10	11	14.3	13.5	10.6	10.5	8
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	11.3	11.7	10	10.4	10.6	10.5	9.7	11.1	10	9.7	9.1	9.4	10.5	10.6	9.3	7.6	7.2	12.8	12.3	10.2
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}^{B}$	$_{s9}^{C}$	n/v	6	12.55	9.89	9.29	5.96	7.65	10.14	11.02	-	10.01	7.75	9.44	14.69	13.27	10.91	8.45	9.26	9.51	**4.91**^{B}	12.89	10.22
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	291	88,000	72,000	77,000	89,000	88,000	84,000	95,000	69,000	79,000	106,000	100,000	81,000	91,000	104,000	109,000	138,000	128,000	106,000	101,000	84,000
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	54	26	66	89	77	66	52	49	67	91	83	82	53	78	100	127	118	74	57	66
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	149	42.2	33.4	29.4	39.2	38.4	40.2	42.4	29.6	38.6	49.6	42.4	36.6	45.6	50.8	50.2	69.2	67.6	52.4	51.4	41
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.58	0.069	0.073	0.039	0.035	<0.024	0.027	0.056	0.081	<0.049	<0.012	<0.01	<0.046	0.057	0.195	-	0.072	<0.031	0.093	0.052	0.056
Nitrate + Nitrite (as N)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{s4}^{B}	n/v	n/v	0.01	<0.002	0.005	0.009	<0.004	<0.004	0.01	0.005	<0.004	<0.004	<0.001	<0.003	0.005	<0.003	0.005	<0.003	0.005	<0.002	0.005	0.005	<0.002
Nitrite (as N)	mg/L	0.060^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen (Total)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen Ammonia/Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	7.6	7.46	7.66	7.53	7.53	7.55	7.76	7.35	7.41	7.24	6.69	8.03	7.59	6.98	7.59	7.75	7.83	7.84	7.41	7.34
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.98	7.89	7.61	7.81	7.9	7.92	7.82	7.88	7.56	7.68	7.97	7.75	7.81	7.78	7.81	8.05	7.99	8.03	7.86	7.84	7.88
Phosphate (as P)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total	mg/L	n/v	0.030_{s4}^{E}	n/v	0.01	<0.007	<0.009	0.011	<0.006	0.012	0.011	0.011	0.013	0.01	0.025	0.01	<0.002	0.01	<0.008	**0.031**^{E}	<0.003	0.013	0.01	<0.009	<0.006
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.01	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.001	0.0029	<0.0011	<0.002	<0.0021	<0.0011	<0.0018	<0.0018	<0.0018	<0.0013	<0.001	<0.0021	<0.0013	0.0049	<0.0005
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	5.5	2.26	2.18	2	1.84	1.88	1.96	2.32	2.38	2.08	2.12	2.08	2.24	2.32	1.92	1.76	1.78	1.32	2	2.32	2.04
Residue,Particulate	mg/L	n/v	n/v	n/v	6.4	<2.4	3.2	3.1	3.2	<2.3	2.5	<1.6	-	-	4	<1.8	4.1	<1.4	<2.4	3.3	<2.2	2.9	2.8	2.9	9.6
Residue-Filterable	mg/L	n/v	n/v	n/v	189	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Specific Conductance	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	4	0.8	0.8	0.8	0.8	0.8	0.8	0.8	8	8	8	8	8	8	8	8	8	8	8	8	8
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}_{s2}$	32.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC MECC Sulfate Guideline (s2)					309	218	218	128	218	218	218	218	128	218	218	218	218	218	218	218	218	218	218	218	218
Temperature, Lab	deg C	n/v	n/v	n/v	0	4.4	10.1	18.8	20.1	18.9	13.6	8.5	11.4	16.7	15.6	14.9	3.2	2.9	11.1	20.7	20.5	20.9	10	4.2	14.5
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.77	0.4	0.42	0.35	0.39	0.44	0.41	0.39	0.49	0.38	0.76	0.39	0.3	0.39	0.39	0.37	0.21	0.38	0.49	0.36	0.38
Total Residue	mg/L	n/v	n/v	n/v	195	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids	mg/L	$_{SN}^{B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Field	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	1.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals																								
Aluminum	µg/L	$5/100_{VAR1}^{B}$	n/v	n/v	-	51.6	78.9	63.9	47.5	46.8	45	43.4	**120**^{B}	73.8	30.1	34.5	43.7	38.9	71.9	63.6	37.6	40	71.4	67.3	79
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Barium	µg/L	n/v	n/v	n/v	-	5.42	4.99	5.45	6.09	5.92	5.84	5.8	5.11	5.65	6.25	6.24	4.78	5.03	5.24	5.83	6.93	6.77	6.18	5.64	5.79
Beryllium	µg/L	n/v	11_{s3}^{C}	n/v	-	-0.0254	-0.0383	-0.0196	-0.0312	-0.0225	-0.0292	-0.0294	0.0104	0.00893	0.00751	0.00741	0.003	0.001	-0.002	0.017	0.012	-0.022	-0.03	0.017	-0.002
PWQO Beryllium Guideline					1100	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	µg/L	1.0_{STB}^{A} 0.09_{LTG}^{B}	0.2^{C} 0.1_{s12}^{E}	n/v	-	**1.05**^{ABCE}	**0.922**^{BCE}	**0.764**^{BCE}	**0.934**^{BCE}	**0.73**^{BCE}	**0.633**^{BCE}	**0.951**^{BCE}	-0.352	0.0322	**0.555**^{BCE}	0.0729	-0.012	-0.029	-0.051	**0.181**^{BE}	**0.354**^{BCE}	**0.206**^{BCE}	**0.64**^{BCE}	**0.683**^{BCE}	-0.005
CWQG Cadmium Guideline (STB)					3.15	0.87	0.69	0.61	0.81	0.79	0.83	0.88	0.61	0.8	1.03	0.88	0.76	0.95	1.05	1.04	1.44	1.41	1.09	1.07	0.85
CWQG Cadmium Guideline (LTG)					0.22	0.08	0.06	0.06	0.07	0.07	0.07	0.08	0.06	0.07	0.09	0.08	0.07	0.08	0.09	0.09	0.12	0.11	0.09	0.09	0.08
PWQO Cadmium Guideline					0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	n/v	-	12,300	9,700	8,200	11,300	10,900	11,800	12,300	8,660	11,400	14,600	12,500	10,200	13,300	14,500	14,200	20,700	19,600	15,300	15,000	11,700
Chromium	µg/L	n/v	n/v	n/v	-	0.387	0.55	0.00345	0.927	0.146	0.808	-0.0797	0.6	0.391	0.118	0.925	-0.702	0.11	0.096	0.199	-0.684	1.1	0.623	-0.507	-0.523
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	0.0663	-0.849	0.594	-0.342	**2.05**^{E}	-0.335	0.834	0.112	**1.27**^{E}	0.136	0.664	0.256	-0.122	-0.033	0.103	0.251	-0.36	-0.142	-0.042	-0.138
Copper	µg/L	2^{*B}	5^{C} 5_{s13}^{E}	n/v	-	0.862	0.493	0.743	0.879	0.736	0.792	0.85	1.11	0.999	0.689	0.991	-0.674	0.424	0.059	0.102	-2.83	0.886	0.787	1.01	0.913
CCME Copper Guideline					3.3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	220	200	135	126	156	159	175	184	196	149	163	142	144	171	171	154	133	111	171	170	142
Lead	µg/L	$1\#^{B}$	10_{s14}^{C} 3_{s15}^{E}	n/v	-	**4.21**^{BE}	-3.27	-9.96	**3.01**^{BE}	-0.125	-7.77	**4.37**^{BE}	-0.568	-3.84	-13	-9.55	-1.4	0.128	0.227	**2.88**^{B}	-3.87	**3.72**^{BE}	**4.85**^{BE}	**1.5**^{B}	0.938
CCME Lead Guideline					5.3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.9	1	1	1
PWQO Lead Guideline (s14)					25	10	10	10	10	10	10	20	10	10	20	20	10	10	20	20	20	20	20	10	10
PWQO Lead Guideline (s15)					5	3	3	1	3	3	3	3	1	3	3	3	3	3	3	3	3	3	3	3	3
Lithium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	µg/L	n/v	n/v	n/v	-	2,780	2,260	2,160	2,700	2,720	2,640	2,860	1,960	2,470	3,210	2,710	2,680	2,990	3,550	3,570	4,270	4,510	3,450	3,380	2,850
Manganese	µg/L	$3,600_{EQ3}^{A}$ 430_{EQ4}^{B}	n/v	n/v	-	13.4	12.3	11.8	17.5	15.6	14.6	13.7	12.6	15.6	19.3	16.2	9.46	11	22.6	27.2	19	28.1	23	13.3	14.2
CCME Manganese Guideline (EQ3)					9447.1	3120.8	2541.5	2272.2	2925.1	2872.7	2990.6	3133.8	2285.8	2885.8	3596.5	3133.8	2754.1	3340.5	3672.7	3634.6	4817.9	4719.9	3774.1	3710.8	3042.7
CCME Manganese Guideline (EQ4)					500	320	350	320	320	320	320	320	350	350	320	320	320	320	390	320	390	320	390	390	320
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-2.1	-0.722	0.283	0.931	0.134	1.27	-0.44	0.782	-0.588	0.402	1.03	0.125	0.257	0.964	0.348	0.631	-0.271	0.539	0.255	0.177
Nickel	µg/L	25^{**B}	25^{C}	n/v	-	0.749	0.986	1.15	0.0585	-0.0898	0.399	0.525	0.0382	0.694	-0.59	0.552	0.277	0.744	0.279	0.763	0.102	2.86	0.703	1.12	0.725
CCME Nickel Guideline					129.4	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	72.2	71	25	25	25
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	373	411	496	439	360	334	347
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,580	2,330	2,620	1,900	3,040	2,530	2,140
Strontium	µg/L	n/v	n/v	n/v	-	20.8	16.1	17.3	20.6	20.4	20.2	20.9	14.5	18.2	22.9	23.1	20.1	19.7	21.8	24.6	29.6	30.4	24	23.4	19.6
Tin	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	1.15	1.55	1.39	1.41	1.24	1.4	1.2	3.23	1.87	0.961	1.23	0.91	0.783	1.75	1.78	1.17	1.15	1.48	1.31	1.76
Uranium	µg/L	33^{A} 15^{B}	5_{*}^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	0.854	1.27	-1.2	0.278	0.201	0.928	1.04	0.713	0.809	-0.34	1.87	-0.284	0.164	0.001	0.176	-0.093	2.14	1.71	1.71	1.08
Zinc	µg/L	37_{EQ1}^{A} 7.0_{EQ2}^{B}	30^{C} 20^{E}	n/v	-	0.39	1	1.01	0.00275	0.794	0.462	0.956	1.63	0.583	1.47	-0.346	1.13	3.28	0.954	0.565	3.27	1	0.641	-0.191	0.967
CCME Zinc Guideline (EQ1)					92.2	32.2	26.5	23.9	30.3	29.8	31	32.4	24	29.9	36.9	32.4	28.6	34.4	37.6	37.3	48.7	47.7	38.6	38	31.5
CCME Zinc Guideline (EQ2)					43.7	14.9	15.2	10.8	13.4	13	14.7	14.2	13.9	15.5	15.3	15.4	12.9	17.1	18.5	14.3	18.8	17.4	19.7	19.4	14.1
Zirconium	µg/L	n/v	4_{*}^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006401420
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location																								
Sample Date					27-Jun-11	25-Jul-11	29-Aug-11	26-Sep-11	31-Oct-11	23-Apr-12	29-May-12	25-Jun-12	30-Jul-12	27-Aug-12	24-Sep-12	29-Oct-12	27-May-13	24-Jun-13	26-Aug-13	30-Sep-13	2-Jun-14	30-Jun-14	25-Aug-14	3-Nov-14	25-May-15
Sample ID					19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420	HIST_19006401420
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\leq 10}{}^{C}$	n/v	37.7	41.5	49.6	49.5	42	33	38.6	46.4	56.4	47.3	44.9	39.2	28.3	35.3	42.7	38.4	25.1	20.9	-	31.5	27.3
Ammonium	mg/L	n/v	n/v	n/v	0.046	0.029	0.021	<0.002	0.025	0.02	0.026	0.03	0.029	0.024	0.034	0.012	0.021	0.033	0.036	0.029	<0.019	0.044	0.026	0.031	0.041
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	2.6	2.3	2	3.4	3	2.6	3.1	3.2	2.6	3.2	3.2	3.4	1.4	2.9	1.9	2.1	1.6	2.2	2.8	2.3	2.8
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	8.4	10.2	11.4	11.7	9.7	6.8	8.4	46	-	10.2	10.2	9.5	5.6	8.1	10.3	8.4	6.2	8.1	8.3	6.8	6.7
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	9.8	9.2	8.8	7.7	10.1	11.6	10.1	4.7	-	8.2	11.8	11.3	11.6	11.1	11.7	11.7	10.6	10.2	12.1	12.4	11
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}{}^{B}$	$_{\geq 9}{}^{C}$	n/v	9.56	7.93	8.5	9.73	12.74	13.08	10.04	6.74	7.97	9.28	9.95	**5.46**^{B}	11.49	8.87	8.37	9.53	9.47	7.92	**3.75**^{B}	12.91	10.47
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	88,000	98,000	108,000	115,000	99,000	79,000	92,000	109,000	122,000	110,000	102,000	98,000	70,000	83,000	100,000	90,000	72,000	62,000	-	72,000	70,000
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	78	91	95	90	62	50	73	107	112	100	74	63	48	71	91	69	59	82	79	43	54
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	43.8	46.2	100	57.4	50	39	44.8	52.2	-	49.2	-	-	35.1	38.4	44.7	39.3	35.6	39.8	41.1	38.4	33.1
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	<0.01	0.05	<0.04	<0.036	0.066	0.072	<0.045	<0.027	0.092	<0.017	<0.017	0.101	0.118	<0.068	<0.097	<0.088	<0.081	<0.086	<0.02	<0.055	<0.02
Nitrate + Nitrite (as N)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	$0.20_{s7}{}^{B}$	n/v	n/v	0.006	0.005	0.005	<0.002	<0.004	<0.004	0.005	0.005	0.006	<0.001	0.006	<0.001	0.005	0.007	<0.004	<0.003	0.005	<0.004	0.005	0.007	0.005
Nitrite (as N)	mg/L	0.060^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen (Total)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.47	0.47	0.4	0.31	0.35	0.4	0.29
Nitrogen Ammonia/Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.45	7.52	7.6	7.63	7.81	7.13	7.44	7.42	7.66	7.61	7.6	7.8	7.39	7.38	7.52	7.42	7.22	7.52	7.47	**6.27**^{BC}	6.95
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.94	8.08	8.1	7.98	7.91	7.6	7.82	7.89	8.05	7.9	7.8	7.93	7.57	7.7	7.83	7.85	7.73	7.44	-	7.74	7.45
Phosphate (as P)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total	mg/L	n/v	$0.030_{s4}{}^{E}$	n/v	<0.009	0.011	0.01	<0.008	<0.007	0.01	0.012	0.01	0.009	<0.002	-	<0.002	0.014	<0.004	0.011	0.01	0.012	0.017	0.01	0.012	0.01
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.0066	0.005	0.0057	0.0038	<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0014	<0.0022	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0013	<0.0044	<0.0016
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	1.82	1.64	1.68	1.76	2.12	2.2	1.98	2.48	-	1.96	1.44	2.36	2.2	1.84	2.12	2.12	2.26	2.24	2.16	2.42	2.68
Residue,Particulate	mg/L	n/v	n/v	n/v	3.1	2.6	<1.9	<1.4	<2	<1.6	3	<1.8	2.8	<1.7	<1.4	2.8	6.7	3.7	<2.1	3.4	9.1	2.6	3	3.2	3.4
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Specific Conductance	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}{}_{s2}$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC MECC Sulfate Guideline (s2)					218	218	309	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218
Temperature, Lab	deg C	n/v	n/v	n/v	19	21.9	19.3	14.6	4.9	6.8	15.2	21.6	21	20.6	11.3	7.2	10.5	19.3	20.2	14.4	17	23	20.3	3.4	13.7
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.41	0.37	0.33	0.33	0.38	0.43	0.4	0.41	0.39	0.36	-	0.28	0.34	0.39	0.44	0.41	0.37	0.27	0.32	0.35	0.26
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids	mg/L	$_{\leq N}{}^{B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Field	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals																									
Aluminum	µg/L	$5/100_{VAR1}{}^{B}$	n/v	n/v	54.4	38.4	27.7	26.1	33	85	69.2	57.1	43.5	36.3	43.9	53	**107**^{B}	61.5	58.6	49.3	**116**^{B}	72.6	74.5	95.1	84.2
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Barium	µg/L	n/v	n/v	n/v	5.46	5.75	39.6	5.73	4.99	4.89	5.62	7.01	7.57	5.84	6.65	6.25	5.34	6.31	6.71	6.27	5.44	5.62	6.07	5.17	4.68
Beryllium	µg/L	n/v	$11_{s3}{}^{C}$	n/v	-0.017	0.017	-0.009	-0.013	0.015	0.026	0.011	0.062	0.03	-0.007	0.0395	0.0492	0.0192	0.0137	0.0192	0.0262	0.0259	0.069	-0.00314	0.0537	0.0238
PWQO Beryllium Guideline					11	11	1100	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-2.64	-	-1.05	-0.486	-0.269	-0.546	-0.318	-0.146	-1.01	-1.28	0.314	-1.76	-2.91
Cadmium	µg/L	$1.0_{STB}{}^{A}$ $0.09_{LTG}{}^{B}$	0.2^{C} $0.1_{s12}{}^{E}$	n/v	-0.181	-0.009	**0.219**^{BCE}	**0.3**^{BCE}	-0.142	**0.18**^{BE}	**1.13**^{ABCE}	**0.208**^{BCE}	0.0729	**0.646**^{BCE}	-0.152	**0.542**^{BCE}	**0.246**^{BCE}	-0.0215	**0.302**^{BCE}	**0.2**^{BE}	**0.268**^{BCE}	**0.356**^{BCE}	**0.364**^{BCE}	**0.446**^{BCE}	**0.179**^{BE}
CWQG Cadmium Guideline (STB)					0.91	0.96	2.1	1.19	1.04	0.81	0.93	1.08	0.97	1.02	0.97	0.97	0.72	0.79	0.93	0.81	0.73	0.82	0.85	0.79	0.68
CWQG Cadmium Guideline (LTG)					0.08	0.08	0.16	0.1	0.09	0.07	0.08	0.09	0.08	0.09	0.08	0.08	0.07	0.07	0.08	0.07	0.07	0.07	0.08	0.07	0.06
PWQO Cadmium Guideline					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	n/v	12,800	13,500	29,900	16,800	14,800	11,300	12,900	15,200	16,400	14,300	14,200	12,400	10,700	11,500	13,200	11,500	10,600	11,800	12,200	11,400	9,690
Chromium	µg/L	n/v	n/v	n/v	0.227	0.017	0.115	0.122	-0.019	0.065	0.373	-1.3	0.117	0.813	-0.121	0.784	0.536	0.487	0.742	0.643	1.44	0.426	0.442	0.0931	0.114
Cobalt	µg/L	n/v	0.9^{E}	n/v	0.199	0.484	-0.206	-0.112	0.389	-0.155	-0.065	-0.581	0.184	-0.356	0.19	0.108	0.202	0.267	0.188	0.03	-0.0566	0.0908	0.0714	0.0439	0.0607
Copper	µg/L	2^{*B}	5^{C} $5_{s13}{}^{E}$	n/v	0.579	1.1	1.15	0.724	0.466	0.771	0.111	0.158	0.982	0.57	0.421	0.588	0.765	0.836	0.888	0.801	0.903	0.942	0.929	0.724	0.607
CCME Copper Guideline					2	2	2.4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	126	105	264	119	134	133	146	143	104	116	167	164	155	121	156	172	205	139	163	233	164
Lead	µg/L	$1\#^{B}$	$10_{s14}{}^{C}$ $3_{s15}{}^{E}$	n/v	**1.63**^{B}	**1.38**^{B}	1.62	**1.52**^{B}	-2.05	-2.11	0.596	-5.15	-2.01	**4.61**^{BE}	-2.4	-4.78	-2.89	-3.08	-0.386	-2.19	-2.78	-3.37	-3.78	-5.6	-4.01
CCME Lead Guideline					1	1	3.2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
PWQO Lead Guideline (s14)					10	20	20	20	20	10	10	20	20	20	20	10	10	10	20	10	10	5	20	10	10
PWQO Lead Guideline (s15)					3	3	5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Lithium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	0.0637	-	-3.02	-2.76	-4.15	0.326	0.559	-1.19	0.458	-0.453	0.199	0.666	0.76
Magnesium	µg/L	n/v	n/v	n/v	2,890	3,020	6,200	3,770	3,150	2,610	3,060	3,470	3,830	3,300	3,050	3,010	2,040	2,340	2,840	2,560	2,220	2,500	2,570	2,400	2,150
Manganese	µg/L	$3,600_{EQ3}{}^{A}$ $430_{EQ4}{}^{B}$	n/v	n/v	15.4	16.4	25.1	19	10.6	10.8	19.1	31.1	19.3	19.3	15.8	12.2	11.7	16.2	21.4	13.1	18.5	15.5	15.8	12.8	11.1
CCME Manganese Guideline (EQ3)					3224.5	3379.1	6656.4	4088.5	3621.9	2912	3289	3761.5	3430.4	3571	3430.4	3430.4	2654.7	2872.7	3282.6	2931.7	2687.9	2964.4	3049.3	2872.7	2521.5
CCME Manganese Guideline (EQ4)					320	270	370	390	390	350	320	390	270	320	320	320	350	320	320	320	320	380	350	320	380
Molybdenum	µg/L	73^{B}	40^{E}	n/v	0.096	0.17	1.17	2.28	0.158	-0.673	-0.541	-0.529	0.65	0.624	0.38	0.963	0.7	0.494	0.562	0.72	0.734	0.13	1.16	0.434	0.431
Nickel	µg/L	25^{**B}	25^{C}	n/v	0.766	0.558	0.533	0.479	0.471	0.454	0.794	1.72	-0.623	1.04	-0.295	-4.87	-0.696	-0.506	-0.695	-0.112	-1.26	-0.804	-0.826	-1.25	-1.22
CCME Nickel Guideline					25	25	95.6	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Potassium	µg/L	n/v	n/v	n/v	429	375	846	511	407	357	370	566	488	480	494	459	423	447	484	475	442	491	418	341	353
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	-	-	-	-	-	-	-	-	-1.55	-	-0.326	-0.409	-0.231	-0.358	**0.296**^{BC}	**0.328**^{BC}	-0.298	-0.473	**0.222**^{C}	-0.556	-1.97
Sodium	µg/L	n/v	n/v	n/v	2,220	2,050	9,640	2,760	2,520	1,990	2,490	2,690	2,340	2,880	2,060	2,700	1,820	1,610	2,140	2,010	1,540	1,680	1,980	1,450	1,820
Strontium	µg/L	n/v	n/v	n/v	21.7	23.1	425	28.5	24.3	19.1	21.6	26.1	30.4	28.9	26.2	22.3	15.9	19.8	25.5	22.1	17.1	20	22.4	17.4	15.7
Tin	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	1.41	-	8.86	10.1	3.97	1.94	0.00103	-0.0776	-3.43	-	-4.87	-2.04	-3.35
Titanium	µg/L	n/v	n/v	n/v	0.804	1.25	1.37	1.05	0.912	1.45	1.46	1.49	1.39	1.16	0.794	0.823	2.98	1.55	2.08	1.37	3.35	2.06	2.35	2.4	1.7
Uranium	µg/L	33^{A} 15^{B}	$5_{s}{}^{E}$	n/v	-	-	-	-	-	-	-	-	-0.57	-	-0.00512	-0.319	0.542	-0.0572	-0.397	0.758	-2.6	-2.23	-2.68	-2.59	-1.5
Vanadium	µg/L	n/v	6^{E}	n/v	0.784	0.859	1.76	1.18	0.32	0.801	0.843	1.53	0.405	0.752	0.332	0.278	0.365	0.234	0.419	0.226	0.54	0.474	0.472	0.287	0.272
Zinc	µg/L	$37_{EQ1}{}^{A}$ $7.0_{EQ2}{}^{B}$	30^{C} 20^{E}	n/v	0.91	1.57	2.91	1.09	0.898	1.21	1.29	1.33	3.56	1.25	1.66	2.18	2.6	2.66	3.21	2.49	2.48	2.66	4.36	-0.0121	2.66
CCME Zinc Guideline (EQ1)					33.3	34.8	66.2	41.7	37.1	30.2	33.9	38.5	35.3	36.6	35.3	35.3	27.7	29.8	33.8	30.4	28	30.7	31.5	29.8	26.3
CCME Zinc Guideline (EQ2)					14	12.8	25.8	15.9	16.5	17.7	16	12.9	13.8	15.1	18.1	16	16.5	15.8	16.8	14.6	14.1	19.6	19	16	16.8
Zirconium	µg/L	n/v	$4_{s}{}^{E}$	n/v	-	-	-	-	-	-	-	-	0.0629	-	-0.146	-0.0177	0.0688	0.0286	0.0849	0.0407	0.0923	0.0939	0.127	0.0622	0.0664

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006401420
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location															19006401420								
Sample Date					20-Jul-15	31-Aug-15	29-Sep-15	26-Oct-15	30-May-16	28-Jun-16	26-Jul-16	26-Sep-16	31-Oct-16	29-May-17	10-Jul-17	31-Jul-17	28-Aug-17	25-Sep-17	30-Oct-17	11-Jun-18	26-Jun-18	30-Jul-18	20-Aug-18	24-Sep-18	29-Oct-18
Sample ID					19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20
General Chemistry																								
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{s16}^{C}$	n/v	42.9	45.5	38.2	39.3	30.1	49.6	34.1	>39	35.1	26.4	38.3	45.5	34.4	38.9	32.4	34.5	37.6	46.2	48.1	39.9	34.5
Ammonium	mg/L	n/v	n/v	n/v	0.047	<0.023	0.046	<0.011	0.059	0.134	<0.024	<0.024	0.033	<0.012	<0.01	<0.022	<0.013	0.05	0.029	<0.01	0.02	<0.01	<0.01	0.02	0.03
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	1.4	2.8	2.9	3.4	4.3	3.1	4.2	2.7	2.9	3.2	2.8	2.6	2.5	2.1	2.1	3.2	3.1	2.8	2.8	2.5	3.7
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	10	11.2	8.9	10.2	7	10.1	9.6	9.5	9.3	7	9.6	11	8.4	8.5	7.8	8	8.5	10.7	11.3	9.2	7.5
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	9.8	9.7	9.1	10	11.6	9.8	9.3	10.5	10.1	10.2	9.6	8.9	9.3	8.3	12.7	10.1	9.9	8.5	7.7	9.3	11.6
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}^{B}$	$_{s9}^{C}$	n/v	8.09	9.28	9.6	12.48	8.92	7.72	7.67	-	12.11	9.65	8.13	7.76	8.97	8.22	11.36	9.42	8.59	8	7.89	7.62	12.89
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	101,000	103,000	88,000	104,000	79,000	101,000	92,000	92,000	92,000	73,000	91,000	107,000	84,000	89,000	82,000	83,000	85,000	103,000	107,000	91,000	84,000
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	91	87	73	61	67	90	84	-	54	58	83	101	71	80	81	68	73	93	96	69	49
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	45	48.6	43.8	47.1	37	45.7	41.8	46.1	43.7	35.8	43.4	50.5	38	43.2	41	36.6	38.8	47.4	46.4	44	36.7
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	<0.02	<0.081	<0.02	<0.077	0.101	0.102	<0.077	<0.043	<0.079	0.12	<0.027	<0.039	<0.055	<0.02	<0.066	0.11	0.1	<0.05	<0.02	<0.03	<0.02
Nitrate + Nitrite (as N)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{s9}^{B}	n/v	n/v	0.005	<0.004	0.006	0.008	<0.004	0.065	<0.004	<0.003	0.005	0.005	0.005	<0.003	<0.002	<0.004	0.006	<0	<0	<0	<0	0	0
Nitrite (as N)	mg/L	0.060^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen (Total)	mg/L	n/v	n/v	n/v	0.32	0.31	0.31	0.31	0.42	0.26	0.33	0.36	0.35	0.42	0.29	0.28	0.29	0.27	0.41	0.42	0.4	0.3	0.25	0.29	0.36
Nitrogen Ammonia/Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	6.89	7.12	7.11	**6.23**^{BC}	7.42	7.55	7.49	-	7.38	7.69	7.45	7.4	7.37	7.34	**9.13**^{BC}	**6.48**^{BC}	7.52	7.82	7.94	7.62	7.69
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.76	7.97	7.7	7.86	7.73	7.38	7.76	7.81	7.79	7.64	8.02	7.85	7.83	7.77	7.75	7.67	7.8	7.99	7.98	7.77	7.62
Phosphate (as P)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total	mg/L	n/v	0.030_{s4}^{E}	n/v	0.011	**0.032**^{E}	0.009	0.009	0.011	0.01	0.009	0.006	<0.005	0.01	0.008	0.006	0.008	0.009	0.005	0.010	0.012	0.017	0.011	0.012	0.011
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	<0.0036	<0.004	0.0057	<0.0038	0.0053	0.005	<0.0032	<0.0032	<0.0041	<0.0035	<0.0026	0.0057	<0.0044	<0.001	<0.0042	<0	<0	<0	0	<0	<0
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	2.2	2.16	2.44	2.76	2.4	2.44	2.04	2.62	2.7	2.32	2.18	2.2	2.26	2.2	2.52	2.52	2.3	2.08	1.98	2.1	2.36
Residue,Particulate	mg/L	n/v	n/v	n/v	2.7	<2	2.7	3	3.7	2.6	<1.9	<2	<1.5	4.9	<2.1	<2.1	<2.4	<1.6	<1.9	<2.2	2.6	<2	<1.5	3.2	2.9
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Specific Conductance	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	8	8	8	8	8	8	8	-	8	8	8	8	8	8	8	8	8	8	8	8	8
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}_{s2}$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC MECC Sulfate Guideline (s2)					218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218
Temperature, Lab	deg C	n/v	n/v	n/v	21	19.2	16.1	4.4	17.4	20.3	21.9	-	4.6	14.4	20.3	21.6	18.3	19.9	6.4	16.5	17.9	19.9	20.8	12.2	2.6
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids	mg/L	$_{SN}^{B}$	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Field	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	3.6	1.4	1.5	1.6	1.3	1.8	1.2	1.4	2.2	2.3	2.5	2
Turbidity, Lab	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals																									
Aluminum	µg/L	$5/100_{VAR1}^{B}$	n/v	n/v	63.1	55.7	49.4	-	92.8	65.6	42.4	47.7	-	97.5	50.5	-	49.3	30.8	54.4	53.8	56.7	39.9	34	52.7	71.2
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Barium	µg/L	n/v	n/v	n/v	6.51	6.15	5.33	-	5.13	6.38	5.29	6.32	-	5.19	5.72	6.54	5.46	5.53	5.36	4.84	5.69	6.21	6.15	5.47	4.96
Beryllium	µg/L	n/v	11_{s3}^{C}	n/v	0.0649	0.0114	0.048	-	0.054	0.0934	0.089	0.0878	-	-	-0.0248	-	0.0297	0.039	0.0568	0	0	-0.04	0.04	-0.1	-0.01
PWQO Beryllium Guideline					11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	n/v	-0.577	-1.56	-2.06	-	0.965	-0.798	-0.277	-0.981	-	0.145	1.5	-1.79	-0.622	-1.57	0.254	0.1	-4.33	-0.61	-2.69	-0.21	0.72
Cadmium	µg/L	1.0_{STB}^{A} 0.09_{LTG}^{B}	0.2^{C} 0.1_{s12}^{E}	n/v	0.0702	-0.0356	**0.43**^{BCE}	-	**0.5**^{BCE}	-0.109	-0.253	-0.0114	-	-0.374	-0.149	**0.29**^{BCE}	**0.215**^{BCE}	0.0734	**0.105**^{BE}	0.05	0.01	**0.64**^{BCE}	**0.15**^{BE}	**0.16**^{BE}	**0.28**^{BCE}
CWQG Cadmium Guideline (STB)					0.93	1.01	0.91	0.98	0.76	0.95	0.87	0.96	0.91	0.74	0.9	1.05	0.79	0.89	0.85	0.76	0.8	0.98	0.96	0.91	0.76
CWQG Cadmium Guideline (LTG)					0.08	0.09	0.08	0.08	0.07	0.08	0.08	0.08	0.08	0.07	0.08	0.09	0.07	0.08	0.08	0.07	0.07	0.09	0.08	0.08	0.07
PWQO Cadmium Guideline					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	n/v	13,200	14,500	13,200	-	11,200	13,400	12,200	13,500	-	10,600	12,700	15,200	10,600	12,700	11,800	10,600	11,200	14,000	13,400	12,700	10,800
Chromium	µg/L	n/v	n/v	n/v	0.111	-0.0046	0.0179	-	0.546	0.171	0.397	0.0068	-	-0.814	-1.28	-0.692	-0.344	-0.265	0.044	0.47	0.35	-0.57	-0.45	0.71	0.87
Cobalt	µg/L	n/v	0.9^{E}	n/v	-0.0442	0.109	-0.0192	-	0.0576	-0.0683	0.0268	0.121	-	0.19	0.232	0.102	0.222	0.125	0.206	0.12	-0.03	0.38	0.11	0.16	0.02
Copper	µg/L	2^{*B}	5^{C} 5_{s13}^{E}	n/v	0.996	0.543	0.706	-	0.952	0.609	0.485	0.645	-	1.16	1.55	0.58	0.766	0.472	1.67	0.9	0.61	1.08	0.62	1.43	0.56
CCME Copper Guideline					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	143	151	157	-	179	161	146	171	-	161	125	118	135	141	202	128	161	119	116	160	162
Lead	µg/L	$1\#^{B}$	10_{s14}^{C} 3_{s15}^{E}	n/v	-3.02	-1.95	-5.05	-	-3.34	-5.45	-2.64	-2.89	-	-0.287	-3.68	-4.34	-4.6	-2.6	-0.842	-0.72	-4.01	-0.06	-3.35	-1.3	-3.78
CCME Lead Guideline					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
PWQO Lead Guideline (s14)					20	20	10	10	10	20	10	10	10	10	10	20	10	10	10	10	10	20	20	10	10
PWQO Lead Guideline (s15)					3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Lithium	µg/L	n/v	n/v	n/v	0.641	-0.354	0.219	-	1.09	-0.779	1.55	1.68	-	4.45	5.76	1.37	4.7	5.04	10.8	3.63	-1.26	2.43	-1.35	2.81	5.52
Magnesium	µg/L	n/v	n/v	n/v	2,930	3,000	2,640	-	2,200	2,960	2,750	3,010	-	2,260	2,830	3,050	2,790	2,790	2,810	2,450	2,640	3,030	3,150	2,980	2,370
Manganese	µg/L	$3{,}600_{EQ3}^{A}$ 430_{EQ4}^{B}	n/v	n/v	23.9	16.9	14.5	-	15.4	33.6	18.1	16.7	-	12.6	16.7	18.9	12.9	12.2	11.7	10.1	23	19.3	18	15.5	12.7
CCME Manganese Guideline (EQ3)					3301.9	3532.7	3224.5	3436.8	2780.5	3346.9	3094.8	3372.6	3218	2701.2	3198.6	3653.7	2846.4	3185.6	3042.7	2754.1	2898.9	3456	3391.9	3237.4	2760.7
CCME Manganese Guideline (EQ4)					320	320	320	320	320	380	320	320	320	350	270	390	320	320	320	350	320	320	320	320	350
Molybdenum	µg/L	73^{B}	40^{E}	n/v	0.499	0.712	1.11	-	0.484	0.0736	-0.185	0.566	-	0.496	1.61	1.11	-0.0162	0.382	0.558	-0.03	0.49	1.26	0.2	0.2	-0.06
Nickel	µg/L	25^{**B}	25^{C}	n/v	0.163	-1.07	-0.54	-	-1.03	-0.753	-1.48	-0.519	-	-1.07	-0.149	-0.638	-0.834	-0.169	-0.837	-1.61	-0.57	-0.56	-0.33	-1.36	-0.23
CCME Nickel Guideline					25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Potassium	µg/L	n/v	n/v	n/v	383	415	429	-	391	428	352	344	-	330	345	397	341	333	326	350	370	420	430	370	320
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	-0.986	-0.574	-1.37	-	-0.589	-0.897	-1.02	-0.709	-	-0.191	-0.882	-0.526	-0.766	-0.487	-0.696	**0.4**^{BC}	-0.86	-0.73	-0.43	**0.41**^{BC}	**2**^{BC}
Sodium	µg/L	n/v	n/v	n/v	1,760	1,500	1,790	-	2,240	2,200	1,760	1,880	-	1,750	1,730	2,020	1,720	1,760	1,980	2,060	1,820	2,070	1,840	1,770	2,660
Strontium	µg/L	n/v	n/v	n/v	21.3	21.6	21.5	-	19.8	21.9	21.8	21.1	-	17	21	23.6	18.7	19.3	20.4	18.6	20	27.1	25.7	21.5	18.6
Tin	µg/L	n/v	n/v	n/v	-6.57	-5.83	-	-	-4.27	-10.1	-3.85	-7.92	-	-11.2	-12.4	-5.71	-7.95	4.02	-13	-6.77	0.03	-14.3	-11.4	-15.8	-17.7
Titanium	µg/L	n/v	n/v	n/v	2.11	2.28	1.64	-	2.43	1.78	1.32	1.41	-	2.1	1.55	1.6	1.48	0.419	1.31	1.24	1.3	1.55	0.99	1.58	1.82
Uranium	µg/L	33^{A} 15^{B}	$5.^{E}$	n/v	-2.7	-2.18	-2.44	-	-1.93	3.61	3.01	2.08	-	1.96	2.12	1.22	1.47	1.05	4.29	3.5	2.6	1.47	3.05	3.76	1.83
Vanadium	µg/L	n/v	6^{E}	n/v	0.465	0.216	0.296	-	0.283	0.282	0.285	0.522	-	0.206	0.44	0.437	0.298	0.197	0.237	0.16	0.38	0.29	0.44	0.27	0.24
Zinc	µg/L	37_{EQ1}^{A} 7.0_{EQ2}^{B}	30^{C} 20^{E}	n/v	5.45	3.73	8	-	4.15	3.46	3.45	4.61	-	3.67	3.68	5.38	4.31	2.25	1.57	3.23	-0.15	5.13	2.98	1.62	2.1
CCME Zinc Guideline (EQ1)					34	36.3	33.3	35.3	28.9	34.5	32	34.7	33.2	28.1	33	37.4	29.6	32.9	31.5	28.6	30.1	35.5	34.9	33.4	28.7
CCME Zinc Guideline (EQ2)					16.7	15.1	16.6	16.2	15.2	23.1	15.2	16.8	16	15	12.9	16.6	13.1	14.9	17.1	14.9	14.1	13.7	13	15.9	16.5
Zirconium	µg/L	n/v	4_{A}^{E}	n/v	0.0857	0.0869	0.0318	-	0.11	-0.0294	0.0155	0.0172	-	0.00239	0.0445	0.0212	-0.0127	-0.026	-0.00873	0.01	0.07	0.1	0.04	-0.03	0.04

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006401420
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					19006401420														
Sample Date					24-Jun-19	29-Jul-19	19-Aug-19	23-Sep-19	28-Oct-19	3-Nov-20	26-Apr-21	25-May-21	5-Jul-21	3-Aug-21	7-Sep-21	27-Sep-21	25-Oct-21	16-Nov-21	13-Dec-21
Sample ID					19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420	19006401420
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20	HIST_190064014 20
General Chemistry																			
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\leq 10}{}^{C}$	n/v	26.5	38.4	40.4	42.6	40.8	38.1	37.4	44	35.1	41.1	47.2	44	44.1	46.9	45.3
Ammonium	mg/L	n/v	n/v	n/v	<0.016	0.038	0.032	0.025	0.035	0.046	-	-	-	-	-	-	-	-	-
Biochemical Oxygen Demand (BOD) - 5 Day	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical Oxygen Demand	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	2.1	1.7	1.9	2.5	2	1.9	3.75	3.66	2.54	2.06	2.14	2.37	2.08	2.93	2.53
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	6.4	9.2	9.1	10.9	9.4	9.1	8.87	10.5	8.66	11	11.6	12.5	10.7	12.1	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	9.7	8.7	8.1	7.5	8.6	11	10.6	10.9	10.2	8.88	8.9	9.87	9.5	9.21	-
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}{}^{B}$	$_{\geq 9}{}^{C}$	n/v	8.87	7.82	8.33	8.82	12.08	13.89	12.35	8.65	9.05	8.93	9.21	10.59	11.96	13.83	13.37
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	63,000	85,000	89,000	95,000	91,000	87,000	-	-	-	-	-	-	-	-	-
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	57	80	81	80	55	47	86.2	103.5	87.9	94.3	103	103	100	104	100
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	32.9	39.7	40.6	43.1	41.3	41.4	40.3	44.9	38	39.5	49.4	43.3	44.1	49	-
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	<0.02	<0.02	<0.02	<0.059	<0.047	0.085	0.076	-	0.09	0.11	0.07	0.06	0.05	0.08	0.15
Nitrate + Nitrite (as N)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	0.08	<0.04	0.1	0.13	0.08	0.06	0.05	0.09	0.16
Nitrite	mg/L	$0.20_{s1}{}^{B}$	n/v	n/v	<0.004	<0.003	<0.004	<0.003	0.005	0.006	-	-	-	-	-	-	-	-	-
Nitrite (as N)	mg/L	0.060^{B}	n/v	n/v	-	-	-	-	-	-	0.0039	0.005	0.005	0.011	0.004	0.003	0.003	0.003	0.003
Nitrogen (Total)	mg/L	n/v	n/v	n/v	0.44	0.31	0.38	0.36	0.37	0.72	0.45	0.43	0.457	0.5	0.41	0.41	0.6	0.44	0.49
Nitrogen Ammonia/Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	0.034	0.04	0.03	0.08	0.02	0.04	0.03	0.03	<0.02
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.74	8.12	8.33	8.41	**8.83**^{C}	7.32	7.65	7.47	7.61	7.64	7.6	7.61	7.58	7.72	7.37
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.57	7.74	7.89	7.85	7.81	7.81	7.77	7.81	7.74	7.86	7.86	7.37	7.41	7.64	7.67
Phosphate (as P)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	0.0061	0.0072	0.005	0.014	0.005	0.005	0.006	0.004	<0.003
Phosphorus, Total	mg/L	n/v	$0.030_{s4}{}^{E}$	n/v	0.013	0.013	0.011	0.011	0.008	0.021	0.010	0.014	0.010	0.011	0.010	0.010	0.008	0.007	0.004
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	<0.0025	<0.0031	<0.0022	<0.0029	0.0061	0.0063	-	-	-	-	-	-	-	-	-
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	2.12	1.94	1.88	1.98	2.3	2.42	2.34	2.02	2.24	1.87	1.86	2.45	2.53	2.55	-
Residue,Particulate	mg/L	n/v	n/v	n/v	3.8	4.3	<2.1	<1.7	<0.5	21.5	-	-	-	-	-	-	-	-	-
Residue-Filterable	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Specific Conductance	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	53	86	78	81	101	74	62	57	55
Stream Condition	none	n/v	n/v	n/v	8	8	8	8	8	8	-	-	-	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	128-429$^{F}{}_{s2}$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC MECC Sulfate Guideline (s2)					218	218	218	218	218	218	218	218	218	218	218	218	218	218	218
Temperature, Lab	deg C	n/v	n/v	n/v	18.2	20.9	20.2	16.3	4.7	0.7	5.1	16.4	19.3	17.7	16	10.9	5.7	0.6	0.8
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Residue	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids	mg/L	$_{\leq N}{}^{B}$	n/v	n/v	-	-	-	-	-	-	1.84	4.44	2.92	1.83	1.37	1.62	1.22	<1.0	<1.0
Turbidity, Field	NTU	n/v	n/v	n/v	-	-	-	-	-	1.3	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	-	-	-	-	-	-	1.4	2.5	1.1	2.4	1.1	3.2	6.5	1.1	15.1
Metals																			
Aluminum	µg/L	$5/100_{VAR1}{}^{B}$	n/v	n/v	-	58.8	43.9	34.5	33	**133**^{B}	**105**^{B}	95.6	54.7	49.5	22.5	34.9	24.5	21.5	-
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Barium	µg/L	n/v	n/v	n/v	-	5.77	5.79	5.81	5.06	6.18	5.24	7	5.94	6.05	5.95	6.05	5.55	5.15	-
Beryllium	µg/L	n/v	$11_{s3}{}^{C}$	n/v	-	0.0471	0.0128	0.026	0.0295	0.00947	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-
PWQO Beryllium Guideline					11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	n/v	-	-3.46	-2.75	-2.9	-2.82	-4.56	<5	<5	<5	<5	<5	<5	<5	<5	-
Cadmium	µg/L	$1.0_{STB}{}^{A}$ $0.09_{LTG}{}^{B}$	0.2^{C} $0.1_{s12}{}^{E}$	n/v	-	**0.546**^{BCE}	**0.304**^{BCE}	**0.749**^{BCE}	**0.534**^{BCE}	**0.155**^{BE}	**<0.9**	**<0.9**	**<0.9**	**<0.9**	**<0.9**	**<0.9**	**<0.9**	**<0.9**	-
CWQG Cadmium Guideline (STB)					0.68	0.82	0.84	0.89	0.85	0.86	0.83	0.93	0.79	0.82	1.03	0.9	0.91	1.02	0.97
CWQG Cadmium Guideline (LTG)					0.06	0.07	0.08	0.08	0.08	0.08	0.07	0.08	0.07	0.07	0.09	0.08	0.08	0.09	0.08
PWQO Cadmium Guideline					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	n/v	-	11,700	11,900	12,700	12,000	11,600	11,700	13,100	10,800	11,200	14,400	12,300	12,700	14,200	-
Chromium	µg/L	n/v	n/v	n/v	-	0.755	0.464	0.233	0.599	0.498	<1	<1	<1	<1	<1	<1	<1	<1	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	-	0.549	0.433	0.403	0.544	-0.302	***<1***	***<1***	***<1***	***<1***	***<1***	***<1***	***<1***	***<1***	-
Copper	µg/L	2^{*B}	5^{C} $5_{s13}{}^{E}$	n/v	-	0.887	0.701	0.814	0.754	1.14	0.827	0.8	0.88	0.9	1.12	0.58	0.79	1.01	-
CCME Copper Guideline					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	-	137	110	123	155	**307**^{BC}	207	210	143	135	142	163	154	154	-
Lead	µg/L	$1\#^{B}$	$10_{s14}{}^{C}$ $3_{s15}{}^{E}$	n/v	-	-5.74	-5.47	-6.71	-5.07	-5.51	***<7***	***<7***	***<7***	***<7***	***<7***	***<7***	***<7***	***<7***	-
CCME Lead Guideline					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
PWQO Lead Guideline (s14)					10	10	10	20	10	10	10	20	10	20	20	20	20	20	20
PWQO Lead Guideline (s15)					3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Lithium	µg/L	n/v	n/v	n/v	-	1.86	2.37	1.86	2.78	1.86	<5	<5	<5	<5	<5	5.09	<5	<5	-
Magnesium	µg/L	n/v	n/v	n/v	-	2,550	2,640	2,760	2,740	3,020	2,680	3,000	2,670	2,800	3,270	3,060	3,000	3,300	-
Manganese	µg/L	$3{,}600_{EQ3}{}^{A}$ $430_{EQ4}{}^{B}$	n/v	n/v	-	14.5	11.3	14.4	11.5	24.9	18.3	32.5	15.8	15.4	18.9	16.2	13.7	12.9	-
CCME Manganese Guideline (EQ3)					2508.1	2957.9	3016.7	3179.2	3062.3	3068.8	2997.1	3295.4	2846.4	2944.8	3583.7	3192.1	3243.8	3558.2	3430.4
CCME Manganese Guideline (EQ4)					350	320	320	320	320	320	320	320	320	320	320	380	380	350	350
Molybdenum	µg/L	73^{B}	40^{E}	n/v	-	-0.367	-0.206	-0.389	-0.23	0.14	<2	<2	<2	<2	<2	<2	<2	<2	-
Nickel	µg/L	25^{**B}	25^{C}	n/v	-	-0.656	-0.633	-0.753	-0.382	-0.182	<2	<2	<2	<2	<2	<2	<2	<2	-
CCME Nickel Guideline					25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Potassium	µg/L	n/v	n/v	n/v	-	422	390	463	405	375	419	500	410	430	390	460	480	420	-
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	-	**2.43**^{BC}	-0.258	-0.415	**0.986**^{BC}	-0.4	***<9***	***<9***	***<9***	***<9***	***<9***	***<9***	***<9***	***<9***	-
Sodium	µg/L	n/v	n/v	n/v	-	1,700	1,500	1,890	1,960	1,910	1,950	3,000	2,290	1,720	1,600	1,850	2,230	2,330	-
Strontium	µg/L	n/v	n/v	n/v	-	20.1	18.7	24.5	20.2	19.6	20.1	22.7	19.8	20.5	23.5	22.4	22	22.8	-
Tin	µg/L	n/v	n/v	n/v	-	-3.35	0.272	0.926	0.156	-4.71	<9	<9	<9	<9	<9	<9	<9	<9	-
Titanium	µg/L	n/v	n/v	n/v	-	1.58	1.14	1.05	0.61	2.84	2.52	3	1.15	1.35	0.65	0.94	0.57	<0.5	-
Uranium	µg/L	33^{A} 15^{B}	$5_{*}{}^{E}$	n/v	-	2.94	3.35	2.57	2.66	-2.85	<3	3	<3	<3	<3	3.26	<3	<3	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	0.475	0.298	0.263	0.228	0.592	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
Zinc	µg/L	$37_{EQ1}{}^{A}$ $7.0_{EQ2}{}^{B}$	30^{C} 20^{E}	n/v	-	1.07	2.11	1.36	0.322	1.38	2.15	4	<2	<2	<2	<2	<2	<2	-
CCME Zinc Guideline (EQ1)					26.2	30.6	31.2	32.8	31.7	31.7	31	34	29.6	30.5	36.8	32.9	33.5	36.5	35.3
CCME Zinc Guideline (EQ2)					14.4	14.4	12.6	13.4	14	15.5	15.4	16.7	14.7	13.1	16.2	22.2	21.5	19.4	18.8
Zirconium	µg/L	n/v	$4_{*}{}^{E}$	n/v	-	0.0746	0.0378	0.057	0.0709	0.099	<1	<1	<1	<1	<1	<1	<1	<1	-

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006404502
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					19006404502																				
Sample Date					3-Nov-91	5-Jan-92	29-Mar-92	13-Aug-93	17-Apr-94	9-May-94	29-May-94	4-Jul-94	20-Jul-94	28-Aug-94	28-Sep-94	26-Oct-94	27-Nov-94	18-Dec-94	19-Feb-95	30-Apr-95	30-May-95	29-Jun-95	30-Jul-95	30-Aug-95	24-Sep-95	30-Oct-95
Sample ID					19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02
General Chemistry																									
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\leq 16}$[C]	n/v	141	212.6	236.4	170	57	76	108	160	170	200	180	160	140	190	260	75	100	169	230	280	255	150
Ammonium	mg/L	n/v	n/v	n/v	0.03	1.02	1.81	0.01	0.2	0.03	0.03	0.01	0.02	0.01	0.01	0.01	0.01	0.07	0.42	0.02	0.01	0.05	0.04	0.05	0.01	0.01
Chloride	mg/L	640[A] 120[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/L	>5.5/6.0/6.5/9.5$_{VAR}$[B]	$_{s9}$[C]	n/v	**4**[B]	**5**[B]	12	6	8.5	8	9	-	-	8	7	10	-	8.5	6	11	8.5	5.5	6.5	6.5	8.6	8.5
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	1,018	1,284	1,510	830	370	439	612	704	716	802	827	791	851	947	1,176	433,000	530,000	586,000	752,000	796,000	807,000	824,000
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	-	-	795	427	156	195	292	353	370	387	417	384	449	527	639	200	260	330	400	410	410	430
Nitrate	mg/L	550[A] 13[B]	n/v	n/v	0.29	0.16	0.58	0.01	0.39	0.19	0.01	0.01	0.02	0.01	0.01	0.01	0.25	0.08	0.09	0.15	0.01	0.01	0.01	0.01	0.01	0.05
Nitrate + Nitrite (as N)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20$_{n1}$[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.006	0.002	0.004	0.003	0.003	0.002	0.003
Nitrite (as N)	mg/L	0.060[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen (Total)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen Ammonia/Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	7.9	7.4	7.6	7.6	7.4	7.5	7.7	7.7	7.7	7.7	7.7	7.8	7.8	7.5	7.5	7.6	7.7	7.7	7.9	7.9	7.8	7.8
Phosphate (as P)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total	mg/L	n/v	0.030$_{s4}$[E]	n/v	0.009	0.008	0.007	0.01	0.03	0.02	0.03	0.01	0.01	0.01	0.01	0.02	0.008	0.008	0.02	0.01	0.01	0.02	0.01	0.02	0.01	0.01
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.002	0.002	0.005	0.004	0.008	0.003	0.003
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residue,Particulate	mg/L	n/v	n/v	n/v	3	2	2	2	15	6	30	2	1	3	1	15	1	1	15	6.3	1.9	2.4	18	3	1.8	1
Specific Conductance	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	8	8	4	75	3	8	8	-	-	8	8	8	-	8	-	3	3	8	8	8	8	3
Sulfate	mg/L	n/v	n/v	128-429[F] $_{s2}$	374	**443**[F]	**636**[F]	270	92.5	130	180	190	200	230	240	260	300	310	359	113.2	141	-	141	25.2	163	246
BC MECC Sulfate Guideline (s2)					430	430	430	430	309	429	430	430	430	430	430	430	430	430	430	429	430	430	430	430	430	430
Temperature, Lab	deg C	n/v	n/v	n/v	1	1	2	18.5	1	10	15	-	-	18	14	6	-	1	1	3	13	22	22	16	9	2
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.44	1.46	2.2	0.54	0.69	0.5	0.52	0.52	0.54	0.57	0.49	0.49	0.43	0.4	0.9	0.38	0.42	0.65	0.68	0.72	0.56	0.4
Total Suspended Solids	mg/L	$_{ss}$[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Field	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals																										
Aluminum	µg/L	5/100$_{VAR1}$[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**350**[B]	**180**[B]	52	35	43	40	**110**[B]
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Barium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	µg/L	n/v	1,100$_{ks}$[C]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Bismuth	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	µg/L	7.7$_{STB}$[A] 0.37$_{LTG}$[B]	0.2[C] 0.5$_{s12}$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.22
CWQG Cadmium Guideline (STB)					7.7	7.7	7.7	7.7	3.3	4.14	6.23	7.56	7.7	7.7	7.7	7.7	7.7	7.7	7.7	4.24	5.54	7.06	7.7	7.7	7.7	7.7
CWQG Cadmium Guideline (LTG)					0.37	0.37	0.37	0.37	0.23	0.28	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.28	0.35	0.37	0.37	0.37	0.37	0.37
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52,000	68,000	84,000	100,000	100,000	100,000	110,000
Chromium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.38	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cobalt	µg/L	n/v	0.9[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.72	<0.5	<0.52	<0.5	<0.5	<0.5	***<0.96***
Copper	µg/L	4*[B]	5[C] 5$_{s13}$[E]	n/v	**20**[BCE]	**12**[BCE]	**14**[BCE]	**8.1**[BCE]	**18**[BCE]	**13**[BCE]	**20**[BCE]	**6.9**[BCE]	**5.8**[BCE]	**12**[BCE]	**6.2**[BCE]	**13**[BCE]	**8**[BCE]	**7.6**[BCE]	**14**[BCE]	**9.5**[BCE]	**11**[BCE]	**8**[BCE]	**6.4**[BCE]	**5.9**[BCE]	**9.5**[BCE]	**8.2**[BCE]
CCME Copper Guideline					4	4	4	4	3.5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300[B]	300[C]	n/v	170	300	240	150	**960**[BC]	**410**[BC]	**1,100**[BC]	250	160	250	220	**860**[BC]	160	190	**980**[BC]	**500**[BC]	**320**[BC]	260	210	240	220	170
Lead	µg/L	7#[B]	25$_{s14}$[C] 5$_{s15}$[E]	n/v	<4.5	<5	<4	<5	<4	<4	<5	<3	<4	<4	**<7**	<2	<5	<2	**14**[BE]	<2	<3.4	<3.7	<3.6	<2	<4.2	<4.2
CCME Lead Guideline					7	7	7	7	5.6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PWQO Lead Guideline (s14)					25	25	25	25	20	20	25	25	25	25	25	25	25	25	25	20	25	25	25	25	25	25
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Lithium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18,000	23,000	29,000	37,000	40,000	40,000	38,000
Manganese	µg/L	3,600$_{EQ3}$[A] 480$_{EQ4}$[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	110	39	170	180	170	62	25
CCME Manganese Guideline (EQ3)					14881	14881	14881	14881	9835.7	11964.4	14881	14881	14881	14881	14881	14881	14881	14881	14881	12233.4	14881	14881	14881	14881	14881	14881
CCME Manganese Guideline (EQ4)					650	930	860	770	700	620	560	610	610	610	650	610	650	770	770	640	560	610	650	650	650	650
Molybdenum	µg/L	73[B]	40[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.87	<0.9	2.6	<0.84	<0.68	<0.97	3.1
Nickel	µg/L	150**[B]	25[C]	n/v	**230**[BC]	19	**51**[C]	5	16	12	6	6	<3	7	<4	6	6	6.7	12	8.2	6.1	8.3	<3.1	<3.4	6.2	9.2
CCME Nickel Guideline					150	150	150	150	134	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver	µg/L	0.25[B]	0.1[C]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strontium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tin	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium	µg/L	33[A] 15[B]	5$_{s}$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	426$_{EQ1}$[A] 106$_{EQ2}$[B]	30[C] 20[E]	n/v	**22**[E]	17	**28**[E]	<3	19	17	10	<1	<1.4	<4	<5	11	<5	9.7	15	7.9	<4.1	<2.1	<4.1	<1.5	<3.2	<3.2
CCME Zinc Guideline (EQ1)					142.2	142.2	142.2	142.2	95.8	115.4	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	117.9	142.2	142.2	142.2	142.2	142.2	142.2
CCME Zinc Guideline (EQ2)					115.3	173.3	265.9	147.6	66.9	76.2	94.9	113.6	118.8	123.9	133	113.4	131.5	195.4	234.5	72	85	106.6	108.6	111.2	120.7	126.2
Zirconium	µg/L	n/v	4$_{s}$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006404502
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					19006404502																			
Sample Date					26-Nov-95	28-Dec-95	25-Feb-96	5-Nov-07	27-May-08	23-Jun-08	29-Jul-08	25-Aug-08	23-Sep-08	20-Oct-08	25-May-09	15-Jun-09	1-Sep-09	21-Sep-09	26-Oct-09	23-Nov-09	3-May-10	25-May-10	21-Jun-10	30-Aug-10	27-Sep-10	1-Nov-10
Sample ID					19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502
General Chemistry																										
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\pm 16}^{C}$	n/v	160	180	220	155	123	145	130	130	114	184	120	154	148	114	150	151	140	181	183	110	128	143
Ammonium	mg/L	n/v	n/v	n/v	0.04	0.09	0.29	0.015	<0.005	0.5	1.82	0.923	2.73	<0.01	0.013	0.015	2.26	4.41	0.525	0.013	0.046	0.082	0.032	4.66	1.03	<0.003
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	-	-	-	41.7	42.9	36.7	34	32.7	37.1	43	37.8	35.7	44.5	39.4	51.9	38.4	21.6	40.6	45.5	46.1	40	49.7
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	-	-	-	35.5	29	34.2	28.5	31.3	26.8	43.4	26.6	35.4	30.8	26.9	34.8	33.9	32.4	43.5	43.2	26.4	31.1	36.8
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	9	9.5	8.2	8.4	7.1	5.4	7.8	8.5	8.6	5.4	4.5	7.6	7.5	7.5	9.8	10.2	5.1	9.9	8.9
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$_{\geq 9}^{C}$	n/v	6	**2.5**^{B}	6.5	12.1	**1.68**^{B}	5.52	**5.25**^{B}	**5.3**^{B}	6.16	9.28	-	7.41	7.25	**5.36**^{B}	13.26	12.87	8.46	**2.49**^{B}	7.28	**3.4**^{B}	7.34	13.03
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	916,000	987,000	1,020,000	1,030,000	766,000	1,040,000	997,000	1,160,000	1,190,000	1,130,000	764,000	908,000	1,300,000	1,340,000	1,050,000	1,010,000	827,000	956,000	1,080,000	0	982,000	1,100,000
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	-	-	-	589	512	902	1,006	912	371	766	553	750	1,038	1,063	570	585	640	922	941	1,323	670	597
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	470	510	-	500	350	418	345	394	386	542	294	376	410	306	455	530	371	437	507	394	410	548
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.11	0.14	0.1	1.54	0.601	2.8	3.48	4.56	5.43	1.9	0.44	0.47	3.53	5.39	1.47	0.97	0.299	-	0.123	4.07	1.76	0.459
Nitrate + Nitrite (as N)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{n1} ^{B}	n/v	n/v	0.005	0.009	0.006	<0.003	<0.004	**0.522**^{B}	**0.62**^{B}	**0.375**^{B}	**0.22**^{B}	0.007	<0.003	<0.004	**1.11**^{B}	**1.4**^{B}	0.035	0.006	0.008	0.01	0.007	**0.75**^{B}	0.13	<0.004
Nitrite (as N)	mg/L	0.060^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen (Total)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen Ammonia/Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	-	-	-	7.72	7.56	7.46	7.37	7.34	7.31	7.63	7.4	7.38	7.32	6.58	7.89	7.63	6.86	7.55	7.55	7.3	7.4	7.01
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.5	7.4	7.4	8.32	7.97	7.96	7.97	8.07	7.8	8.27	8	7.93	7.98	8	8.07	8.05	7.92	8.36	8.08	7.84	8.02	8.07
Phosphate (as P)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total	mg/L	n/v	0.030_{ss} ^{E}	n/v	0.01	0.01	-	<0.005	<0.008	0.013	0.01	0.01	<0.009	0.01	0.013	0.013	0.016	0.011	<0.003	<0.009	0.014	**0.039**^{E}	0.013	0.016	0.022	<0.008
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	0.005	0.003	0.002	<0.0005	<0.0005	<0.0005	<0.0006	<0.0018	<0.0013	0.0041	<0.0022	0.0025	0.0035	<0.0021	<0.0016	<0.0017	0.0046	0.0055	0.0072	0.0035	0.0031	0.0035
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	-	-	-	2.4	0.46	0.86	2.14	2.52	2.08	2.26	0.4	0.48	2.04	1.94	2.38	1.92	0.54	1.28	2.26	2.84	3.08	2.52
Residue,Particulate	mg/L	n/v	n/v	n/v	6.8	2	12	<1.2	<2.2	<1.9	<1.2	<1.2	<1.1	<1.6	-	-	<1.7	<2.3	2.9	8	7.1	4.8	4.5	2.8	3.9	2.9
Specific Conductance	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	8	4	4	0.8	0.8	0.8	0.8	0.8	0.8	0.8	8	8	8	8	8	8	8	8	8	8	8	8
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}$ $_{\leq 2}$	285	331	352	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC MECC Sulfate Guideline (s2)					430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430
Temperature, Lab	deg C	n/v	n/v	n/v	1	1	1	2.3	7.2	17.6	17.6	15.1	11.4	7.2	10.6	15.8	13.7	14.2	1.5	2.2	11.7	23.5	18.6	21	8.8	1.5
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.47	0.46	-	0.59	0.48	1.31	2.95	1.88	3.85	0.68	0.47	0.47	0.45	5.6	1.06	0.45	0.45	0.69	0.36	5.6	1.9	0.36
Total Suspended Solids	mg/L	$_{ss}$ ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Field	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals																										
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	**130**^{B}	60	**130**^{B}	18.1	47.5	13.9	11.3	8.82	13.4	22.1	43.6	37.6	10.6	22.9	37.2	39.7	78.1	36.8	61.3	31.9	49.3	21.4
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Barium	µg/L	n/v	n/v	n/v	-	-	-	15.5	13.5	20.6	14.9	16.4	17.3	16.9	14.1	18	23.3	22.6	16.6	15.6	17.8	21.3	21.8	22.8	15.8	15
Beryllium	µg/L	n/v	$1{,}100_{s3}$ ^{C}	n/v	-	-	-	-0.0362	-0.0412	-0.0218	-0.0329	-0.0327	-0.0187	-0.0277	0.00309	-0.00708	-0.00835	-0.00961	0.003	-0.002	0.01	0.024	0.014	-0.075	-0.085	-0.075
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Bismuth	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	µg/L	7.7_{STB} ^{A} 0.37_{LTG} ^{B}	0.2^{C} 0.5_{t12} ^{E}	n/v	<0.2	<0.2	<0.2	**1.23**^{BCE}	**0.54**^{BCE}	**1.32**^{BCE}	**1.39**^{BCE}	**0.398**^{BC}	**0.604**^{BCE}	**0.617**^{BCE}	-0.405	**0.666**^{BCE}	-0.386	-0.0643	-1.65	-1.45	-1.48	-0.878	-5.98	-0.551	**0.709**^{BCE}	**0.34**^{C}
CWQG Cadmium Guideline (STB)					7.7	7.7	7.7	7.7	7.5	7.7	7.39	7.7	7.7	7.7	6.28	7.7	7.7	6.54	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
CWQG Cadmium Guideline (LTG)					0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	120,000	130,000	-	114,000	81,700	105,000	90,800	101,000	104,000	125,000	70,100	89,500	107,000	85,400	98,300	125,000	86,400	96,300	112,000	112,000	96,800	121,000
Chromium	µg/L	n/v	n/v	n/v	<0.2	<0.2	1.2	1.15	0.72	0.277	1.05	0.479	0.315	0.397	0.828	1.09	0.499	0.564	-1.37	-2.69	-1.64	-1.85	-2.6	-0.182	0.052	-1.99
Cobalt	µg/L	n/v	0.9^{E}	n/v	***<0.97***	***<2***	**2.5**^{E}	**6.9**^{E}	**1.17**^{E}	**45.9**^{E}	**62.6**^{E}	**65.8**^{E}	**86.4**^{E}	**6.95**^{E}	**1.96**^{E}	**2.66**^{E}	**62.2**^{E}	**118**^{E}	**18.1**^{E}	**3.06**^{E}	**3.1**^{E}	**3.19**^{E}	**2.17**^{E}	**141**^{E}	**33.3**^{E}	**1.56**^{E}
Copper	µg/L	4^{*B}	5^{C} 5_{t13} ^{E}	n/v	**13**^{BCE}	**8.5**^{BCE}	**11**^{BCE}	**8.79**^{BCE}	**8.62**^{BCE}	**29.5**^{BCE}	**22.4**^{BCE}	**17.6**^{BCE}	**24.5**^{BCE}	**6.34**^{BCE}	**10.4**^{BCE}	**9.88**^{BCE}	**33.7**^{BCE}	**52.8**^{BCE}	**13.6**^{BCE}	**8.4**^{BCE}	**10.6**^{BCE}	**10**^{BCE}	**5.21**^{BCE}	**23.2**^{BCE}	**13.8**^{BCE}	**8.18**^{BCE}
CCME Copper Guideline					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	280	210	**560**^{BC}	120	175	180	179	164	153	193	197	250	153	175	173	196	**376**^{BC}	**465**^{BC}	**404**^{BC}	221	216	127
Lead	µg/L	$7\#^{B}$	25_{s14} ^{C} 5_{s15} ^{E}	n/v	<3.4	<4	<4	0.181	-1.67	-3.75	1.22	3.83	1.89	2.87	**8.47**^{BE}	-5.89	**7.98**^{BE}	-14.5	1.42	2.23	0.796	1.85	4.35	**8.85**^{BE}	**6.33**^{E}	**5.89**^{E}
CCME Lead Guideline					7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PWQO Lead Guideline (s14)					25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Lithium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	µg/L	n/v	n/v	n/v	41,000	44,000	-	52,000	35,500	37,600	28,600	34,800	30,800	55,600	28,800	37,100	34,700	22,600	50,900	52,900	37,600	47,800	55,300	27,700	40,800	59,700
Manganese	µg/L	$3{,}600_{EQ3}$ ^{A} 480_{EQ4} ^{B}	n/v	n/v	95	370	380	25.7	41.9	56.6	56	49.5	69.4	45.8	47.8	75.4	63.1	104	41.1	49.2	130	321	142	177	59.8	32.6
CCME Manganese Guideline (EQ3)					14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881
CCME Manganese Guideline (EQ4)					770	930	930	480	610	650	610	460	610	480	430	610	650	460	480	480	610	480	480	610	480	480
Molybdenum	µg/L	73^{B}	40^{E}	n/v	2.2	<0.8	1.2	3.4	1.5	9.34	12.3	12.6	16.6	5.52	3.24	3.67	11.6	20.5	5.32	3.7	4.26	7.26	5.75	27.3	9.04	3.34
Nickel	µg/L	150^{**B}	25^{C}	n/v	7.6	7	7	10.5	9.37	19.5	**25.2**^{C}	**29.5**^{C}	**27.4**^{C}	13.5	7.53	11.5	15.5	24.5	11.2	10.3	13.1	15.2	9.79	**39.1**^{C}	20.9	7.97
CCME Nickel Guideline					150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Potassium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,170	5,130	4,290	29,800	9,460	4,890
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33,400	33,300	39,900	150,000	58,500	37,000
Strontium	µg/L	n/v	n/v	n/v	-	-	-	537	346	390	288	345	340	466	341	410	495	392	451	479	328	420	576	361	332	585
Tin	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Titanium	µg/L	n/v	n/v	n/v	-	-	-	0.685	1.86	0.633	0.622	0.595	0.76	0.93	1.93	1.77	0.658	1.02	0.569	0.723	2.84	0.828	1.37	-0.109	-0.092	-1.26
Uranium	µg/L	33^{A} 15^{B}	5_{s} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	µg/L	n/v	6^{E}	n/v	-	-	-	0.327	0.698	-0.4	0.419	0.811	0.485	0.49	-1.05	-0.0659	0.944	0.664	0.728	0.931	0.982	0.939	0.536	-0.616	-8.63	-12
Zinc	µg/L	426_{EQ1} ^{A} 106_{EQ2} ^{B}	30^{C} 20^{E}	n/v	9	9	20	2.04	2.5	10.5	11.6	9.67	14.9	3.54	-0.0139	0.0628	10.6	13.3	7.35	4.76	6.79	4.94	8.64	9.5	4.9	0.421
CCME Zinc Guideline (EQ1)					142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2
CCME Zinc Guideline (EQ2)					175.3	205.5	173.3	99.9	96.8	108.9	91	88.9	97.5	106.1	76.6	102.9	89.1	61.8	104.7	122.3	97	88	129.3	94	109.8	133
Zirconium	µg/L	n/v	4_{s} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006404502
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					19006404502																			
Sample Date					30-May-11	27-Jun-11	25-Jul-11	29-Aug-11	26-Sep-11	31-Oct-11	23-Apr-12	29-May-12	25-Jun-12	30-Jul-12	27-Aug-12	24-Sep-12	29-Oct-12	27-May-13	24-Jun-13	26-Aug-13	30-Sep-13	2-Jun-14	30-Jun-14	25-Aug-14	29-Sep-14	3-Nov-14
Sample ID					19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02
General Chemistry																									
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\leq 16}^{C}$	n/v	128	175	183	114	117	161	108	174	190	200	129	136	143	117	165	124	120	113	8.1	-	128	114
Ammonium	mg/L	n/v	n/v	n/v	0.018	0.054	0.029	4.82	4.05	0.02	0.016	0.03	0.038	0.04	5.67	0.794	<0.006	0.015	0.045	2.72	3.48	0.025	0.112	1.52	1.74	1.42
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	41.7	54.8	48.2	46.3	52.9	77.4	53.3	57.7	56.9	50.4	51.6	82.3	65.3	45.4	43.7	41.5	38.6	46.8	39.8	33.8	30.2	25.8
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	31.6	42.1	46.2	27.6	28	37.7	24.8	39.8	12.3	-	32.3	31.4	35.6	26.9	40.2	30.5	28.9	33.2	41.2	30.8	31.2	27
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	9.3	8.9	10	4.2	4.8	7.8	8.2	9.2	9.9	-	4.2	7.2	11.5	8.5	8.8	7.3	6.2	9.2	9	8.8	7.6	7.8
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$ ^{B}	$_{\geq 9}^{C}$	n/v	8.56	7.76	8.46	6.31	6.86	12.17	11.43	7.56	7.65	7.59	**5.37**^{B}	8.64	7.08	9.49	6.25	**4.61**^{B}	6.78	6.73	5.66	**2.64**^{B}	6.99	11.6
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	839,000	1,250,000	0	0	0	1,330,000	819,000	1,150,000	1,250,000	0	1,510,000	1,410,000	1,030,000	759,000	1,210,000	1,140,000	1,160,000	762,000	32,000	-	1,020,000	847,000
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	655	1,125	1,249	1,299	1,085	721	509	894	1,078	1,349	1,342	981	629	539	1,061	986	847	642	1,024	880	746	464
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	386	637	747	477	495	650	46.2	539	586	-	461	-	-	322	609	400	386	321	516	378	411	356
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	0.367	0.382	0.453	3.91	4.64	0.573	0.325	0.484	0.337	0.306	1.94	2.13	0.474	0.229	1	2.01	1.9	0.126	0.266	1.52	1.25	0.9
Nitrate + Nitrite (as N)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{n1} ^{B}	n/v	n/v	<0.003	0.009	0.009	**0.775**^{B}	**0.38**^{B}	<0.004	<0.003	0.006	0.007	0.008	**0.215**^{B}	0.165	<0.002	0.005	0.018	**0.29**^{B}	0.175	0.006	0.011	**0.52**^{B}	0.13	0.058
Nitrite (as N)	mg/L	0.060^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen (Total)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.95	7.4	0.56	0.83	3.62	4.06	3.06
Nitrogen Ammonia/Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.23	7.43	7.5	7.27	7.36	7.57	6.73	7.13	7.36	7.54	7.31	7.26	7.69	7.26	7.05	7.16	7.19	6.95	7.13	7.21	**6.45**^{BC}	**5.91**^{BC}
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	8.12	8.27	8.23	8.17	8.07	8.14	7.89	8.05	8.11	8.16	8	7.81	8.11	7.35	7.98	7.81	7.96	8.1	7.23	-	8.18	8.16
Phosphate (as P)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total	mg/L	n/v	0.030_{ol} ^{E}	n/v	<0.005	0.015	0.026	0.017	<0.008	<0.008	<0.009	0.017	0.026	0.017	<0.004	-	<0.002	0.016	0.015	0.014	0.008	0.013	0.023	0.019	0.016	0.014
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	<0.0005	0.0091	0.0111	0.0084	0.0048	0.003	-	0.0059	0.0052	0.0066	0.0063	0.0055	<0.0005	0.0032	0.0065	<0.0024	0.0069	<0.001	<0.0033	0.0097	<0.0017	<0.0049
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	0.4	1.92	3.64	2.4	2.4	2.82	0.56	1.24	1.76	-	2.44	2.32	2.44	0.38	1.44	2.12	1.84	0.8	2.54	2.08	1.82	1.86
Residue,Particulate	mg/L	n/v	n/v	n/v	8.7	4.5	2.6	<2	<2	<1.5	<2.4	3.3	6.2	3.3	<2	<1.3	<1.8	<0.8	5.6	<1.2	<1.4	5.9	4.9	5.6	5.7	<1.8
Specific Conductance	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}$ $_{s2}$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC MECC Sulfate Guideline (s2)					430	430	430	430	430	430	218	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430
Temperature, Lab	deg C	n/v	n/v	n/v	13.8	19.7	20.6	16.6	13.2	3.3	5.4	14	18.7	19.6	19.9	8.9	4.5	10.6	18.5	18.1	11.8	17.3	22.3	18.8	11.2	0.8
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.44	0.54	0.68	6.1	5.45	0.43	0.39	0.55	0.68	0.6	7	-	0.45	0.45	0.96	3.81	6.05	0.51	0.58	2.11	2.79	2.29
Total Suspended Solids	mg/L	$_{n/v}$ ^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Field	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals																										
Aluminum	µg/L	$5/100_{VAR1}$ ^{B}	n/v	n/v	40.1	31.4	5.15	8.9	11	17.9	**118**^{B}	37.4	59.5	-0.228	11.8	22.7	42.9	29.1	43	-0.478	3.67	72.3	33.8	28.5	64	25
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Barium	µg/L	n/v	n/v	n/v	15.6	24.1	24.2	22.7	18.4	18.6	5.35	21.2	22.1	29.3	21.9	20.1	15.5	13.8	26.7	18	16.1	16.8	22.8	18.9	17.1	11.2
Beryllium	µg/L	n/v	$1{,}100_{lt3}$ ^{C}	n/v	0.014	-0.03	0.039	0.01	0.028	0.057	0.04	0.051	0.072	0.289	0.006	0.23	0.184	-0.0113	-0.103	-0.0681	0.0286	0.00224	0.125	-0.011	-0.00652	0.046
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	11	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Bismuth	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-3.57	-	-0.114	-1.32	-0.222	2.57	-0.586	-1.05	4.51	-0.635	-1.24	-2.44	-0.207
Cadmium	µg/L	7.7_{STB} ^{A} 0.37_{LTG} ^{B}	0.2^{C} 0.5_{t12} ^{E}	n/v	-0.273	-0.037	-0.226	0.017	-0.325	-0.463	-0.03	**0.707**^{BCE}	**1.14**^{BCE}	**0.852**^{BCE}	**0.971**^{BCE}	-1.65	-1.14	**1.41**^{BCE}	**3.86**^{BCE}	**2.28**^{BCE}	**2.59**^{BCE}	**1.39**^{BCE}	**2.61**^{BCE}	**3.37**^{BCE}	**3.19**^{BCE}	**2.2**^{BCE}
CWQG Cadmium Guideline (STB)					7.7	7.7	7.7	7.7	7.7	7.7	0.96	7.7	7.7	7.7	7.7	7.7	7.7	6.89	7.7	7.7	7.7	6.86	7.7	7.7	7.7	7.63
CWQG Cadmium Guideline (LTG)					0.37	0.37	0.37	0.37	0.37	0.37	0.08	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	90,300	143,000	168,000	141,000	135,000	147,000	13,400	123,000	136,000	158,000	127,000	121,000	93,100	75,700	141,000	104,000	100,000	78,300	124,000	97,100	109,000	90,900
Chromium	µg/L	n/v	n/v	n/v	-1.24	-2.04	-1.72	-0.797	-1.83	-1.31	0.037	-1.18	-1.48	1.26	-0.314	-1.12	0.295	0.608	-0.92	0.704	0.89	2.28	2.43	2.15	2.83	0.868
Cobalt	µg/L	n/v	0.9^{E}	n/v	**3.55**^{E}	**3.84**^{E}	**3.32**^{E}	**138**^{E}	**146**^{E}	**2.88**^{E}	0.095	**5.37**^{E}	**6**^{E}	**12**^{E}	**176**^{E}	**134**^{E}	**5.04**^{E}	**2.05**^{E}	**13.9**^{E}	**88.6**^{E}	**99.1**^{E}	**2.84**^{E}	**5.51**^{E}	**67.4**^{E}	**59.2**^{E}	**41.7**^{E}
Copper	µg/L	4^{*B}	5^{C} 5_{s13} ^{E}	n/v	**11.6**^{BCE}	**9.81**^{BCE}	**8.97**^{BCE}	**37.2**^{BCE}	**33.5**^{BCE}	**8.04**^{BCE}	0.975	**9.46**^{BCE}	**11.2**^{BCE}	**10.5**^{BCE}	**20.1**^{BCE}	**14**^{BCE}	**6.08**^{BCE}	**8.41**^{BCE}	**8.1**^{BCE}	**11.5**^{BCE}	**10.4**^{BCE}	**9.54**^{BCE}	**9.26**^{BCE}	**12**^{BCE}	**12.6**^{BCE}	**13.1**^{BCE}
CCME Copper Guideline					4	4	4	4	4	4	2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	226	**364**^{BC}	**348**^{BC}	183	154	135	149	**305**^{BC}	**397**^{BC}	271	206	236	124	148	**302**^{BC}	-	153	286	**344**^{BC}	246	264	169
Lead	µg/L	$7\#^{B}$	25_{s14} ^{C} 5_{s15} ^{E}	n/v	2.58	3.61	0.431	2.79	2.79	2.42	0.448	**5.93**^{E}	2.99	-3.73	**10.4**^{BE}	-4.56	-7.6	-2.46	0.118	-4.06	-1.54	-	-5.38	-8.25	-8.18	-5.9
CCME Lead Guideline					7	7	7	7	7	7	1	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PWQO Lead Guideline (s14)					25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	5	25	25	25
PWQO Lead Guideline (s15)					5	5	5	5	5	5	3	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Lithium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	5.16	-	6.27	0.317	5.35	3.86	4.46	3.16	1.71	0.363	0.0414	0.578	0.675
Magnesium	µg/L	n/v	n/v	n/v	38,900	67,900	79,500	30,300	38,300	68,800	3,090	56,200	59,800	84,600	34,900	41,500	47,400	32,300	62,500	34,100	33,100	30,500	50,100	32,900	33,700	31,400
Manganese	µg/L	$3{,}600_{EQ3}$ ^{A} 480_{EQ4} ^{B}	n/v	n/v	57.9	112	188	93.4	78.5	35.5	14.4	94.5	164	113	129	64.3	27.1	52.9	154	85.9	75.6	70.4	158	105	71	26.9
CCME Manganese Guideline (EQ3)					14881	14881	14881	14881	14881	14881	3379.1	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881
CCME Manganese Guideline (EQ4)					460	480	520	480	480	480	320	480	480	480	480	650	480	860	650	650	610	460	930	610	480	460
Molybdenum	µg/L	73^{B}	40^{E}	n/v	4.25	4.9	7.98	25.8	32.6	3.77	-1.35	3.69	6.43	8.84	27	17.6	4.2	3.02	9.28	15.3	16.3	3.88	6.02	13.4	12.1	9.37
Nickel	µg/L	150^{**B}	25^{C}	n/v	12.4	10.6	14.2	**52.4**^{C}	**49.5**^{C}	11.4	0.834	18.7	20.1	14.4	**41.3**^{C}	**27.3**^{C}	5.66	8.67	19.8	22.7	23.4	8.79	15.4	**25.9**^{C}	23.7	15.2
CCME Nickel Guideline					150	150	150	150	150	150	25	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Potassium	µg/L	n/v	n/v	n/v	3,610	4,620	5,940	35,500	29,800	6,000	406	4,710	3,880	5,430	28,500	20,100	3,920	2,530	4,200	16,400	17,900	2,840	3,400	11,200	10,900	7,600
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	-	-	-	-	-	-	-	-	-	**0.112**^{C}	-	**1.37**^{BC}	-0.393	**0.436**^{BC}	**3.13**^{BC}	**6.4**^{BC}	**3.25**^{BC}	**0.948**^{BC}	**1.44**^{BC}	**2.79**^{BC}	**0.941**^{BC}	**0.535**^{BC}
Sodium	µg/L	n/v	n/v	n/v	33,300	50,700	49,100	171,000	157,000	64,000	3,950	47,600	53,700	52,700	145,000	114,000	47,900	32,900	39,100	73,300	79,800	32,900	32,800	59,700	53,700	40,200
Strontium	µg/L	n/v	n/v	n/v	368	712	720	407	482	607	21.3	539	563	724	536	474	383	301	600	391	397	301	446	328	344	282
Tin	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	0.085	-	8.25	28.6	-	-	-11.2	-9.34	-5.91	-5.39	-2.96	-15.1	-
Titanium	µg/L	n/v	n/v	n/v	1.26	-0.009	-0.214	-0.099	-0.035	-0.106	1.96	0.558	1.68	0.331	0.607	0.465	0.847	2	3.09	1.08	1.05	2.57	1.72	1.54	2.44	0.966
Uranium	µg/L	33^{A} 15^{B}	5_{s} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-0.055	-	2.69	0.937	-1.18	**9.28**^{E}	0.482	1.33	-2.76	-5.51	-4.9	-5.05	-2.34
Vanadium	µg/L	n/v	6^{E}	n/v	2.66	2.83	2.53	1.83	2.83	0.267	0.881	2.2	2.8	0.187	1.42	0.111	0.386	0.168	0.0868	0.152	0.457	0.572	0.425	0.621	0.6	0.231
Zinc	µg/L	426_{EQ1} ^{A} 106_{EQ2} ^{B}	30^{C} 20^{E}	n/v	4.4	4.46	3.25	**24.1**^{E}	**21.9**^{E}	4.82	1.86	7.74	6.56	15.2	14.4	18.5	12.1	11.5	**23.9**^{E}	14.7	**20.8**^{E}	13.4	**20.1**^{E}	**27.8**^{E}	**32**^{CE}	7.49
CCME Zinc Guideline (EQ1)					142.2	142.2	142.2	142.2	142.2	142.2	34.8	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2
CCME Zinc Guideline (EQ2)					93.2	130.3	163.9	79.7	94.4	140.1	14.3	134.8	143.1	93.3	88.6	119	112.3	141.9	157.4	112.7	90.4	79.2	250.2	107	86.9	77.9
Zirconium	µg/L	n/v	4_{s} ^{E}	n/v	-	-	-	-	-	-	-	-	-	-0.254	-	-0.36	-0.125	-0.094	0.0124	-0.175	-0.0963	0.0282	-0.138	0.0062	-0.113	-0.0959

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006404502
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					19006404502																			
Sample Date					25-May-15	20-Jul-15	31-Aug-15	29-Sep-15	26-Oct-15	30-May-16	28-Jun-16	26-Jul-16	26-Sep-16	31-Oct-16	29-May-17	10-Jul-17	31-Jul-17	28-Aug-17	25-Sep-17	30-Oct-17	11-Jun-18	26-Jun-18	30-Jul-18	20-Aug-18	24-Sep-18	29-Oct-18
Sample ID					19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02	HIST_190064045 02
General Chemistry																										
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\leq 16}^{C}$	n/v	128	160	125	121	128	116	199	151	152	138	118	159	160	161	174	126	158	154	194	136	174	109
Ammonium	mg/L	n/v	n/v	n/v	0.046	0.051	2.98	3.97	0.073	0.034	0.047	0.025	0.037	0.028	0.025	<0.015	0.029	<0.015	0.048	<0.021	0.03	0.04	<0.01	3.74	0.02	<0.02
Chloride	mg/L	640^{A} 120^{B}	n/v	n/v	37.1	33.5	31.3	32.3	43.6	35.4	39.4	41.6	40.5	**198**^{B}	30.1	52.1	48.7	36	48	39.6	42	28.8	35.3	41.7	68	27.9
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	34.3	41.4	32.8	31.1	36.1	32.3	41.2	42.2	40.9	37.8	31.1	44.2	41.4	37.6	43.5	33.8	39.6	37.5	47.5	33.8	42.5	25.3
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	8.1	9.2	5.9	5.6	8.2	10.6	9.6	8.5	8.1	7.7	8.3	7.3	8.8	8.8	7.2	9.9	8.3	9.5	9	5.3	8.2	9
Dissolved Oxygen	mg/L	$>5.5/6.0/6.5/9.5_{VAR}$^{B}	$_{\geq 9}^{C}$	n/v	8.22	6.69	**5.34**^{B}	6.24	11.88	6.16	6.72	6.11	-	11.03	6.19	6.67	5.54	7.21	**4.93**^{B}	10.93	7.29	6.92	6.99	**5.34**^{B}	9.1	12.54
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	770,000	964,000	1,110,000	1,130,000	932,000	701,000	1,040,000	1,040,000	1,030,000	1,020,000	704,000	1,050,000	1,010,000	938,000	1,140,000	803,000	843,000	782,000	1,020,000	1,300,000	1,090,000	747,000
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	609	861	974	904	526	592	880	935	-	584	596	920	952	712	1,010	479	707	662	902	1,101	748	399
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	350	450	369	376	407	310	486	489	496	476	357	502	487	470	557	363	359	365	508	284	489	338
Nitrate	mg/L	550^{A} 13^{B}	n/v	n/v	<0.086	<0.02	2.1	1.99	0.456	0.116	<0.057	0.117	0.315	0.31	0.283	<0.089	<0.06	0.552	0.219	0.326	0.15	0.27	0.43	3.58	0.76	1.28
Nitrate + Nitrite (as N)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrite	mg/L	0.20_{n1}^{B}	n/v	n/v	<0.004	0.006	**0.52**^{B}	**0.284**^{B}	0.01	<0.004	<0.004	<0.004	0.007	<0.004	0.007	0.005	<0.004	<0.002	0.005	<0.003	<0	0	<0	**1.01**^{B}	<0	0
Nitrite (as N)	mg/L	0.060^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrogen (Total)	mg/L	n/v	n/v	n/v	0.45	0.55	5.85	6.82	0.87	0.53	0.42	0.43	0.68	0.56	0.54	0.35	0.45	0.87	0.5	0.62	0.52	0.59	0.77	7.85	0.99	1.46
Nitrogen Ammonia/Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, Field	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	6.74	6.65	6.72	6.66	**5.88**^{BC}	7.49	7.58	7.45	-	7.24	7.55	7.39	7.29	7.24	7.06	**8.59**^{C}	6.64	7.64	7.9	7.77	7.63	7.81
pH, lab	S.U.	$6.5\text{-}9.0^{B}$	$6.5\text{-}8.5^{C}$	n/v	7.95	8.02	8.38	7.75	8.12	8.06	7.77	8.09	8.06	8.04	8.01	8.22	8.08	8.16	8.01	8.06	8.01	8.11	8.22	8.05	7.98	7.9
Phosphate (as P)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus, Total	mg/L	n/v	0.030_{ss}^{E}	n/v	0.011	0.015	0.01	0.008	0.01	0.016	0.014	0.014	0.011	0.029	0.013	0.018	0.016	0.016	0.013	0.006	0.017	0.020	0.015	0.015	0.012	0.009
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	<0.0024	0.0052	0.0054	0.0068	0.0062	0.0056	<0.0026	0.005	<0.004	0.0052	<0.0031	0.007	0.0059	0.0077	<0.0026	0.006	0	0	<0	0.01	<0	<0
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	0.44	1.98	2.14	2.24	2.84	1.48	1.8	3.12	2.78	2.04	0.48	1.74	2.4	1.8	2.2	2.46	0.92	1.48	3.38	2.06	3.28	1.94
Residue,Particulate	mg/L	n/v	n/v	n/v	<1.9	<2.3	<1.6	<1.7	2.5	3.7	5.6	<1.5	<1	<1.3	<2.2	3.9	<0.8	<1.6	<1.6	<2	3.2	4.9	2.5	<1.2	<1.8	3.1
Specific Conductance	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream Condition	none	n/v	n/v	n/v	8	8	8	8	8	8	8	8	-	8	8	8	8	8	8	8	8	8	8	8	8	8
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}$ $_{s2}$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC MECC Sulfate Guideline (s2)					430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430
Temperature, Lab	deg C	n/v	n/v	n/v	14.1	20.1	18.8	14.3	2.3	17.5	18	20.7	-	2.9	16.3	18.1	20.9	15.2	18.9	3.9	16.6	16.9	18.7	18.3	8.1	0.1
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids	mg/L	$_{ss}$^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, Field	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	1.6	2.2	1.5	1.9	1.5	2.2	2.6	2.6	1.3	3.2	1.2	1.7
Turbidity, Lab	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals																										
Aluminum	µg/L	$5/100_{VAR1}$^{B}	n/v	n/v	27.4	20.4	12.4	18.2	-	59.6	9.33	9.97	0.599	-	31.5	28	16.9	35.1	-19	32.2	39.8	41.7	15.8	0.72	14.6	38
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Barium	µg/L	n/v	n/v	n/v	15	16.9	15.8	15.7	-	14.1	18	16.4	17.2	-	14.8	18.2	18.2	15.8	22.9	13	18	16.3	17.7	17	16.9	11.6
Beryllium	µg/L	n/v	$1{,}100_{ls3}$^{C}	n/v	0.116	0.002	-0.0456	0.00149	-	-0.0371	0.495	0.311	0.192	-	-	-0.0415	0.473	-0.078	0.258	0.0323	0.03	-0.02	0.4	0.03	-0.07	0
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Bismuth	µg/L	n/v	n/v	n/v	-0.0857	0.423	-3.73	-4.83	-	-2.35	-4.62	-1.06	-3.44	-	2.06	0.454	-2.95	-0.488	-15.2	1.12	-0.29	-3.46	-1.43	-3.44	0.26	-0.24
Cadmium	µg/L	7.7_{STB}^{A} 0.37_{LTG}^{B}	0.2^{C} 0.5_{s12}^{E}	n/v	**0.542**^{BCE}	**0.624**^{BCE}	**0.273**^{C}	**1.33**^{BCE}	-	**0.259**^{C}	**0.92**^{BCE}	**0.213**^{C}	-0.0768	-	0.164	**1.46**^{BCE}	**3.14**^{BCE}	**3.5**^{BCE}	-0.0045	0.109	**0.67**^{BCE}	**0.23**^{C}	**1.64**^{BCE}	-0.28	-0.48	**0.51**^{BCE}
CWQG Cadmium Guideline (STB)					7.5	7.7	7.7	7.7	7.7	6.63	7.7	7.7	7.7	7.7	7.65	7.7	7.7	7.7	7.7	7.7	7.69	7.7	7.7	6.06	7.7	7.23
CWQG Cadmium Guideline (LTG)					0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	83,200	102,000	100,000	100,000	-	71,500	112,000	112,000	111,000	-	88,400	114,000	113,000	113,000	131,000	84,000	83,500	86,700	115,000	76,900	113,000	77,900
Chromium	µg/L	n/v	n/v	n/v	0.574	0.904	-1.4	1.37	-	0.165	2.64	-1.46	-1.81	-	-	-2.8	-1.39	-2.49	-1.81	-0.98	0.46	0.67	-0.35	2.13	0.94	1.04
Cobalt	µg/L	n/v	0.9^{E}	n/v	**3.14**^{E}	**4.06**^{E}	**104**^{E}	**114**^{E}	-	**2.5**^{E}	**3.46**^{E}	**3.24**^{E}	**6.9**^{E}	-	**4.17**^{E}	**3.89**^{E}	**3.94**^{E}	**5.7**^{E}	**4.56**^{E}	**2.88**^{E}	**3.24**^{E}	**3.34**^{E}	**5.45**^{E}	**103**^{E}	**5.94**^{E}	**3.41**^{E}
Copper	µg/L	4^{*B}	5^{C} 5_{s13}^{E}	n/v	**6.5**^{BCE}	**6.73**^{BCE}	**9.31**^{BCE}	**12.1**^{BCE}	-	**10.2**^{BCE}	**7.24**^{BCE}	**5.12**^{BCE}	**4.47**^{B}	-	**9.76**^{BCE}	**8.98**^{BCE}	**5.7**^{BCE}	**7.84**^{BCE}	**13.7**^{BCE}	**9.32**^{BCE}	**6.61**^{BCE}	**6.95**^{BCE}	**5.9**^{BCE}	**17.2**^{BCE}	**7.83**^{BCE}	**5.6**^{BCE}
CCME Copper Guideline					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300^{B}	300^{C}	n/v	180	234	168	219	-	197	251	214	110	-	163	229	161	222	286	168	282	**357**^{BC}	188	184	181	131
Lead	µg/L	$7\#^{B}$	25_{s14}^{C} 5_{s15}^{E}	n/v	-6.79	0.752	-3.21	-1.9	-	-3.96	-33.5	-3.9	-1.79	-	-0.968	-2.65	-12.2	-11.5	-5.25	1.45	-3.15	-3.25	1.53	-5.21	-6.35	-8.33
CCME Lead Guideline					7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PWQO Lead Guideline (s14)					25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Lithium	µg/L	n/v	n/v	n/v	-0.147	2.48	-0.0443	-0.525	-	3.48	2.47	4.01	0.609	-	10.6	11.6	8.78	9.13	50.6	17.2	-2.66	-4.57	1.61	0.73	-2.74	-0.38
Magnesium	µg/L	n/v	n/v	n/v	34,500	47,400	29,000	30,700	-	32,000	50,100	50,900	-	-	33,100	52,800	49,800	45,600	55,900	37,100	36,600	36,100	53,700	22,400	50,200	34,800
Manganese	µg/L	$3{,}600_{EQ3}$^{A} 480_{EQ4}^{B}	n/v	n/v	35.4	56.6	77.3	91.1	-	40.7	109	52.2	53.4	-	78.5	86.3	61.9	71.7	136	25.8	89.9	104	55.6	57.3	43.7	32.7
CCME Manganese Guideline (EQ3)					14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881
CCME Manganese Guideline (EQ4)					610	480	460	610	480	460	650	480	480	480	460	480	480	480	480	460	460	460	480	430	650	610
Molybdenum	µg/L	73^{B}	40^{E}	n/v	4.38	4.88	19.3	21.2	-	2.45	6.22	3.49	5.42	-	4	6.1	5.84	4.87	5.32	2.8	2.5	3.5	5.2	19.2	2.96	2.61
Nickel	µg/L	150^{**B}	25^{C}	n/v	8.67	10.9	23.4	21.1	-	6.85	6.68	6.9	8.45	-	9.41	7.47	7.18	8.49	8.12	5.59	5.82	8.91	8.5	21.7	6.01	7.1
CCME Nickel Guideline					150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Potassium	µg/L	n/v	n/v	n/v	2,840	2,550	15,800	-	-	2,620	2,720	3,090	4,650	-	2,740	2,380	2,800	2,920	4,800	3,130	2,550	2,010	2,880	20,700	5,550	2,710
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	-5.78	-5.11	-5.13	-6.48	-	-2.32	-6.59	-5.39	-4.21	-	-2.92	-0.459	-2.37	-6.71	-3.34	-2.44	-1.15	-1.22	**0.67**^{BC}	**0.8**^{BC}	-0.42	**2.38**^{BC}
Sodium	µg/L	n/v	n/v	n/v	28,000	30,400	78,200	-	-	29,100	34,100	35,900	38,200	-	23,700	38,900	40,500	29,800	37,500	28,800	30,300	24,900	31,400	132,000	51,800	24,300
Strontium	µg/L	n/v	n/v	n/v	304	426	309	323	-	289	493	501	430	-	284	529	452	378	541	305	311	324	455	252	432	289
Tin	µg/L	n/v	n/v	n/v	-3.37	-8.84	-6.26	-	-	-17.9	-52.9	-15.7	1.25	-	-5.03	-27.3	-7.98	-15.5	-74.8	-	3.66	16.5	-6.9	-8.85	-26.1	-12
Titanium	µg/L	n/v	n/v	n/v	1.58	1.08	1.1	1.52	-	2.58	2.7	1.14	0.886	-	1.43	2.24	1.5	2.69	1.78	1.83	1.93	1.7	1.37	1.03	1.12	1.82
Uranium	µg/L	33^{A} 15^{B}	5_{s}^{E}	n/v	-0.277	-1.92	-4.37	-3.42	-	-2.74	**25.3**^{BE}	**13.2**^{E}	**7.53**^{E}	-	**7.03**^{E}	**8.85**^{E}	**6.24**^{E}	**6.95**^{E}	**8.13**^{E}	**10.3**^{E}	**8.56**^{E}	**5.85**^{E}	**8.31**^{E}	**9.94**^{E}	**14.8**^{E}	**6.52**^{E}
Vanadium	µg/L	n/v	6^{E}	n/v	0.253	0.431	0.513	1.26	-	0.255	-0.836	0.273	-0.029	-	0.35	0.405	0.807	0.239	-0.295	-0.0144	0.18	0.27	0.81	0.31	0.07	0.14
Zinc	µg/L	426_{EQ1}^{A} 106_{EQ2}^{B}	30^{C} 20^{E}	n/v	11.9	12.9	**23.6**^{E}	**28.3**^{E}	-	14.9	**26.7**^{E}	20	19.1	-	18.6	**26.4**^{E}	**25.9**^{E}	**32.6**^{CE}	18.5	8.99	14.7	2.63	**30.8**^{CE}	**37.9**^{CE}	**22.1**^{E}	13.7
CCME Zinc Guideline (EQ1)					142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2
CCME Zinc Guideline (EQ2)					92.4	116.4	60.3	100.5	93.2	83.8	156.2	115.3	117.5	112.6	90.5	100.1	117.4	106.4	130.3	94.7	91	89.9	110	59	124.3	97.1
Zirconium	µg/L	n/v	4_{s}^{E}	n/v	-0.0419	-0.0929	-0.169	-0.155	-	0.0323	0.0749	-0.245	-0.0967	-	-0.114	-0.0549	-0.258	-0.203	-0.314	-0.135	-0.06	0	0	-0.24	-0.18	-0.07

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006404502
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					19006404502															
Sample Date					24-Jun-19	29-Jul-19	19-Aug-19	23-Sep-19	28-Oct-19	3-Nov-20	2-Feb-21	8-Mar-21	26-Apr-21	25-May-21	5-Jul-21	3-Aug-21	7-Sep-21	27-Sep-21	25-Oct-21	16-Nov-21
Sample ID					19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502	19006404502
Laboratory Work Order	Units	CCME	PWQO	BC MECC	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502	HIST_19006404502
General Chemistry																				
Alkalinity, Total (as CaCO3)	mg/L	n/v	$_{\pm 1.6}$[C]	n/v	131	132	136	176	158	152	231	249	127.3	159.1	159.6	183	182	164	170	173
Ammonium	mg/L	n/v	n/v	n/v	1.09	1	0.226	0.031	0.028	0.057	0.078	0.17	-	-	-	-	-	-	-	-
Chloride	mg/L	640[A] 120[B]	n/v	n/v	29.8	42	57.2	45.1	51.9	44.3	63.3	41.1	38.7	46.9	42.4	50.4	52	60.6	41.1	49.8
Dissolved Inorganic Carbon	mg/L	n/v	n/v	n/v	33.6	34.1	34.7	45.4	38.1	37.7	-	-	31.6	39.8	42.6	48.2	46.1	44	43.4	44.4
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	7.1	5.8	5.2	7.2	7.5	8	-	-	6.48	9.31	10.8	8.86	9.86	10	8.82	7.6
Dissolved Oxygen	mg/L	>5.5/6.0/6.5/9.5$_{VAR}$[B]	$_{\pm 9}$[C]	n/v	6.64	**2.48**[B]	**4.35**[B]	5.65	10.63	11.34	10.68	10.52	12.59	6.81	5.58	6.68	7.07	7.92	10.91	13.21
Electrical Conductivity (at 25 C)	µS/cm	n/v	n/v	n/v	878,000	1,140,000	1,260,000	1,140,000	1,050,000	940,000	1,370,000	1,300,000	-	-	-	-	-	-	-	-
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	800	1,048	1,071	891	631	493	729	748	785	853	884	1,090	1,030	984	994	1,050
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	309	392	472	539	483	410	-	-	344	372	398	511	453	416	468	514
Nitrate	mg/L	550[A] 13[B]	n/v	n/v	2.06	4.42	4.39	1.67	1.03	1.15	2.03	3.04	0.52	-	0.4	1.08	1	0.76	1.85	1.72
Nitrate + Nitrite (as N)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	0.52	0.32	0.41	1.09	1.01	0.76	1.85	1.72
Nitrite	mg/L	0.20$_{n1}$[B]	n/v	n/v	**0.53**[B]	**1.12**[B]	**0.46**[B]	0.006	<0.004	0.006	0.01	0.016	-	-	-	-	-	-	-	-
Nitrite (as N)	mg/L	0.060[B]	n/v	n/v	-	-	-	-	-	-	-	-	0.0029	0.005	0.008	0.009	0.007	0.003	0.003	0.003
Nitrogen (Total)	mg/L	n/v	n/v	n/v	4.17	5.42	5.11	2.06	1.35	1.49	2.35	3.24	0.85	0.75	0.966	1.69	1.56	1.23	2.4	2.15
Nitrogen Ammonia/Ammonium	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	0.027	0.05	0.05	0.04	<0.02	0.03	0.02	0.03
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	7.86	7.69	7.91	8.27	**8.7**[C]	7.51	**10.94**[BC]	-	7.71	7.36	7.39	7.45	7.28	7.35	7.36	7.3
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	7.92	7.84	7.93	8.04	8.08	7.95	7.8	7.69	8.11	8.04	7.94	7.98	7.98	7.71	7.74	7.85
Phosphate (as P)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	0.0061	0.0075	0.009	0.008	0.007	0.006	0.008	0.006
Phosphorus, Total	mg/L	n/v	0.030$_{ss}$[E]	n/v	0.013	0.013	0.024	0.014	0.011	0.008	0.012	0.013	0.011	0.015	0.018	0.015	0.016	0.011	0.009	0.008
Phosphorus, Total Reactive	mg/L	n/v	n/v	n/v	<0.0034	<0.0042	<0.0036	0.006	0.0062	0.0051	0.0056	0.0091	-	-	-	-	-	-	-	-
Reactive Silica (SiO2)	mg/L	n/v	n/v	n/v	0.88	2.26	2.26	2.7	2.44	2.26	-	-	0.443	0.741	2.16	2.76	3.96	3.04	2.74	2.39
Residue,Particulate	mg/L	n/v	n/v	n/v	2.8	3.5	<1.8	<1.8	<1.5	1.8	2.1	3.8	-	-	-	-	-	-	-	-
Specific Conductance	µS/cm	n/v	n/v	n/v	-	-	-	-	-	-	-	-	425	67	793	904	944	683	603	571
Stream Condition	none	n/v	n/v	n/v	8	8	8	8	8	8	8	8	-	-	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	128-429[F] $_{s2}$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BC MECC Sulfate Guideline (s2)					430	430	430	430	430	430	430	430	430	430	430	430	430	430	430	430
Temperature, Lab	deg C	n/v	n/v	n/v	18.9	20.1	18.4	16.1	3.9	1.2	1.2	-0.6	0.9	14.2	19.3	16.2	12.4	9.3	4.2	-0.5
Total Kjeldahl Nitrogen	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids	mg/L	$_{ow}$[B]	n/v	n/v	-	-	-	-	-	-	-	-	2.9	3.65	2.06	1.88	1.89	1.48	1.83	2.1
Turbidity, Field	NTU	n/v	n/v	n/v	-	-	-	-	-	1.6	1.5	3.1	-	-	-	-	-	-	-	-
Turbidity, Lab	NTU	n/v	n/v	n/v	-	-	-	-	-	-	-	-	2.2	3.1	0.7	0.9	0.5	0.4	1	1.2
Metals																				
Aluminum	µg/L	5/100$_{VAR1}$[B]	n/v	n/v	-	8.51	9.09	15.8	26.6	43	-	-	62.4	59.6	20	<6	10	15.5	10.8	24
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Barium	µg/L	n/v	n/v	n/v	-	17.2	18.3	20.6	18.1	15.1	-	-	13.4	19	17.4	19.2	17.4	17.1	15.6	15.6
Beryllium	µg/L	n/v	1,100$_{ks3}$[C]	n/v	-	-0.0133	-0.0396	-0.0497	-0.102	-0.0144	-	-	<0.1	<0.1	<0.1	<0.3	<0.2	-	<0.2	<0.2
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
Bismuth	µg/L	n/v	n/v	n/v	-	-9.15	-9.68	-7.87	-9.82	-7.49	-	-	<5	<5	<5	<15	<10	<5	<10	<10
Cadmium	µg/L	7.7$_{STB}$[A] 0.37$_{LTG}$[B]	0.2[C] 0.5$_{s12}$[E]	n/v	-	**1.61**[BCE]	**1.81**[BCE]	**1.19**[BCE]	**2.21**[BCE]	**0.661**[CE]	-	-	**<0.9**	**<0.9**	**0.99**[BCE]	**<3**	**<2**	**0.91**[BCE]	**<2**	**<2**
CWQG Cadmium Guideline (STB)					6.6	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.36	7.7	7.7	7.7	7.7	7.7	7.7	7.7
CWQG Cadmium Guideline (LTG)					0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	-	99,100	112,000	122,000	102,000	88,000	-	-	78,400	80,400	84,200	107,000	96,000	80,900	100,000	114,000
Chromium	µg/L	n/v	n/v	n/v	-	0.282	0.204	1.91	0.836	0.281	-	-	<1	<1	<1	<3	<2	<1	<2	<2
Cobalt	µg/L	n/v	0.9[E]	n/v	-	**61.4**[E]	**43.3**[E]	**10.1**[E]	**5.63**[E]	**3.54**[E]	-	-	**3.52**[E]	**5**[E]	**3.83**[E]	**7.17**[E]	**6.67**[E]	**3.48**[E]	**5.43**[E]	**4.05**[E]
Copper	µg/L	4*[B]	5[C] 5$_{s13}$[E]	n/v	-	**21.6**[BCE]	**18.2**[BCE]	**6.6**[BCE]	**5.74**[BCE]	**6.5**[BCE]	-	-	**6.21**[BCE]	**7**[BCE]	**6.49**[BCE]	**8.07**[BCE]	**7.17**[BCE]	**4.49**[B]	**7.35**[BCE]	**6.07**[BCE]
CCME Copper Guideline					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Iron	µg/L	300[B]	300[C]	n/v	-	194	227	194	126	122	-	-	155	186	194	202	136	92.9	151	126
Lead	µg/L	7#[B]	25$_{s14}$[C] 5$_{s15}$[E]	n/v	-	-2.51	-6.69	-8.57	-14.9	-7.16	-	-	**<7**	**<7**	**<7**	**<21**	**<14**	**<7**	**<14**	**<14**
CCME Lead Guideline					7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
PWQO Lead Guideline (s14)					25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Lithium	µg/L	n/v	n/v	n/v	-	1.39	4.03	3.99	8.99	1.4	-	-	<5	<5	<5	<15	<10	<5	<10	<10
Magnesium	µg/L	n/v	n/v	n/v	-	35,200	46,700	56,900	55,400	46,300	-	-	36,100	41,700	45,500	59,100	51,900	51,900	53,100	55,800
Manganese	µg/L	3,600$_{EQ3}$[A] 480$_{EQ4}$[B]	n/v	n/v	-	77.6	69.4	72.6	30.7	28.8	-	-	31.7	92.2	142	94.7	34.6	26.7	42.4	-
CCME Manganese Guideline (EQ3)					14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881	14881
CCME Manganese Guideline (EQ4)					610	610	650	480	480	650	650	770	460	460	610	650	650	650	650	650
Molybdenum	µg/L	73[B]	40[E]	n/v	-	11.8	7.61	2.79	1.3	1.6	-	-	<2	<2	<2	<6	<4	<2	<4	<4
Nickel	µg/L	150**[B]	25[C]	n/v	-	18.2	17	9.73	8.43	7.33	-	-	8.22	9	6.22	11.8	7.17	2.94	9.32	5.55
CCME Nickel Guideline					150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Potassium	µg/L	n/v	n/v	n/v	-	14,900	12,900	5,850	4,570	4,040	-	-	2,710	3,000	2,270	3,150	4,870	3,590	3,800	3,830
Silver	µg/L	0.25[B]	0.1[C]	n/v	-	-10.2	-0.488	-1.81	**1.95**[BC]	**0.408**[BC]	-	-	**<9**	**<9**	**<9**	**<27**	***<18***	**<9**	***<18***	***<18***
Sodium	µg/L	n/v	n/v	n/v	-	107,000	98,000	46,800	44,300	36,500	-	-	28,900	34,500	34,900	40,800	39,500	42,800	32,800	36,600
Strontium	µg/L	n/v	n/v	n/v	-	368	473	482	404	367	-	-	325	371	407	525	439	380	470	494
Tin	µg/L	n/v	n/v	n/v	-	2.33	5.84	0.728	0.404	-14	-	-	<9	<9	<9	<27	<18	<9	<18	<18
Titanium	µg/L	n/v	n/v	n/v	-	0.285	0.546	0.687	0.889	2.13	-	-	2.21	2	<0.5	<2	<1	<0.5	<1	1.3
Uranium	µg/L	33[A] 15[B]	5$_{s}$[E]	n/v	-	**6.5**[E]	**6.56**[E]	2.7	4.64	4.62	-	-	**5.31**[E]	3	<3	**9.14**[E]	**<6**	3.61	***<6***	***<6***
Vanadium	µg/L	n/v	6[E]	n/v	-	0.0519	-0.158	-0.209	0.0145	0.257	-	-	0.609	0.8	<0.5	<2	<1	<0.5	<1	<1
Zinc	µg/L	426$_{EQ1}$[A] 106$_{EQ2}$[B]	30[C] 20[E]	n/v	-	13.8	13	5.98	3.84	1.48	-	-	5.32	7	2.86	7.5	6.53	3.29	5.39	<4
CCME Zinc Guideline (EQ1)					142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2	142.2
CCME Zinc Guideline (EQ2)					79.8	98.5	104.5	123.3	109.3	106.8	125.1	136.8	73	96.1	117.9	133.7	124.4	143.9	149.3	140.6
Zirconium	µg/L	n/v	4$_{s}$[E]	n/v	-	-0.268	-0.234	-0.223	-0.0844	-0.0582	-	-	<1	<1	<1	<3	<2	<1	<2	<2

See notes on last page

Table
Summary of Surface Water Analytical Data - 19006404502
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Notes:

CCME	Canadian Council of Ministers of the Environment
A	Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Life - Freshwater Aquatics Short Term
B	Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Life - Freshwater Aquatics Long Term
PWQO	Provincial Water Quality Objectives of the Ministry of Environment and Energy (MOEE, 1999)
C	PWQO Table 2
D	PWQO Table 2 - Calculated
E	PWQO Table 2 - Interim
6.5[A]	Concentration exceeds the indicated standard.
15.2	Measured concentration did not exceed the indicated standard.
<0.50	Laboratory reporting limit was greater than the applicable standard.
<0.03	Analyte was not detected at a concentration greater than the laboratory reporting limit.
n/v	No standard/guideline value.
-	Parameter not analyzed / not available.
EQ1	The short-term benchmark is for dissolved zinc and is calculated using the following equation: Benchmark = exp(0.833[ln(hardness mg·L-1)] + 0.240[ln(DOC mg·L-1)] + 0.526). The value in the table is for surface water of 50 mg CaCO3·L−1 hardness and 0.5 mg·L−1 dissolved organic carbon (DOC).
	The benchmark equation is valid between hardness 13.8 and 250.5 mg CaCO3·L−1 and DOC 0.3 and 17.3 mg·L−1.
EQ2	The long-term CWQG is for dissolved zinc and is calculated using the following equation: CWQG = exp(0.947[ln(hardness mg·L-1)] - 0.815[pH] + 0.398[ln(DOC mg·L-1)] + 4.625). The value in the table is for surface water of 50 mg CaCO3·L−1 hardness, pH of 7.5 and 0.5 mg·L−1 DOC.
	The CWQG equation is valid between hardness 23.4 and 399 mg CaCO3·L−1, pH 6.5 and 8.13 and DOC 0.3 to 22.9 mg·L−1.
EQ3	The short-term benchmark is calculated using the benchmark calculator in Appendix B of the Scientific Criteria Document for the Development of the Canadian Water Quality Guidelines for the Protection of Aquatic Life: Manganese or the following equation:
	Benchmark = exp(0.878[ln(hardness)] + 4.76) where the benchmark is expressed in dissolved manganese concentration (µg/L), and hardness is measured as CaCO3 equivalents in mg/L. The value in the table is for surface water of 50 mg/L hardness. The benchmark equation is valid between hardness 25 and 250 mg/L.
EQ4	The long-term CWQG is found using the look-up table (see Table 5) or the CWQG and benchmark calculator is Appendix B of CCME (2019). The value in the table is for surface water of 50 mg/L hardness and pH of 7.5. The CWQG table is valid between hardness 25 and 670 mg/L and pH 5.8 and 8.4.
LTG	The CWQG for cadmium (i.e. long-term guideline) of 0.09 µg·L-1 is for waters of 50 mg CaCO3·L-1 hardness. The CWQG for cadmium is related to water hardness (as CaCO3): When the water hardness is > 0 to < 17 mg/L, the CWQG is 0.04 µg/L; at hardness ≥ 17 to ≤ 280 mg/L, the CWQG is calculated using this equation (CWQG (µg/L) = 10^{0.83(log[hardness]) – 2.46 });
	At hardness > 280 mg/L, the CWQG is 0.37 µg/L.
n1	Guideline is expressed as Nitrite (as N) in ug/L. This value is equivalent to 197 ug/L for Nitrite.
s3	The PWQO for beryllium is hardness dependent. If hardness <75 mg/L than PWQO is 0.011 mg/L. For hardness > 75 mg/L, PWQO is 1.1 mg/L.
s2	Sulphate Guideline is hardness dependent. For hardness between 0-30 mg/L, guideline is 128 mg/L. For hardness between 31-75 mg/L, guideline is 218 mg/L. For hardness between 76-180 mg/L, guideline is 309 mg/L. For hardness between 181-250 mg/L, guideline is 429 mg/L. For hardness >250 mg/L, guideline is determined on a site specific basis.
	For hardness >250 mg/L and no site specific criteria is available, sampled were flagged as exceeding above 430mg/L.
s4	Applies to Phosphorus, total. PWQO is 0.03 mg/L for rivers and streams, 0.02 mg/L for lakes, and 0.01 mg/L for lakes naturally below this value.
s9	The PWQO for dissolved oxygen is both temperature and biota dependent. See page 17 of MOE (1994).
s12	The interim PWQO for cadmium is hardness dependent. If hardness <100 mg/L than PWQO is 0.0001 mg/L. For hardness >100 mg/L, PWQO is 0.0005 mg/L.
s13	The interim PWQO for copper is hardness dependent. If hardness <20 mg/L than PWQO is 0.001 mg/L. For hardness >20 mg/L, PWQO is 0.005 mg/L.
s14	PWQO for lead is alkalinity dependent. For alkalinity <20 mg/L, PWQO is 0.005 mg/L. For alkalinity between 20-40 mg/L, PWQO is 0.01 mg/L. For alkalinity between 40-80 mg/L, PWQO is 0.02 mg/L. For alkalinity >80 mg/L, PWQO is 0.025 mg/L.
s15	Interim PWQO for lead is hardness dependent. For hardness <30 mg/L, interim PWQO is 0.001 mg/L. For hardness between 30-80 mg/L, interim PWQO is 0.003 mg/L. For hardness >80 mg/L, interim PWQO is 0.005 mg/L.
s16	Alkalinity should not be decreased by more than 25% of the natural concentration.
STB	The short-term benchmark concentration of 1.0 µg·L-1 is for waters of 50 mg CaCO3·L-1 hardness. The short-term benchmark for cadmium is related to water hardness (as CaCO3): When the water hardness is 0 to < 5.3 mg/L, the short-term benchmark is 0.11 µg/L,
	At hardness ≥ 5.3 to ≤ 360 mg/L, the short-term benchmark is calculated using this equation (Short-term benchmark (µg/L) = 10^{1.016[log[hardness]) – 1.71 });
TBC1	Value is minimum value available. Sample-specific value to be calculated (equation).
VAR	Lowest acceptable dissolved oxygen concentration: for warm water biota: early life stages = 6000 µg/L; for warm water biota: other life stages = 5500 µg/L; for cold water biota: early life stages = 9500 µg/L; for cold water biota: other life stages = 6500 µg/L
VAR1	Variable, 5 µg/L if pH < 6.5 and 100 µg/L if pH > 6.5
*	The CWQG for copper is related to water hardness. When the water hardness is 0 to < 82 mg/L, the CWQG is 2 µg/L. At hardness ≥82 to ≤180 mg/L the CWQG is calculated using this equation:
	CWQG (µg/L) = 0.2 * e{0.8545[ln(hardness)]-1.465}. At hardness >180 mg/L, the CWQG is 4 µg/L. If the hardness is unknown, the CWQG is 2 µg/L
#	The CWQG for lead is related to water hardness. When the hardness is 0 to ≤ 60 mg/L, the CWQG is 1 µg/L. At hardness >60 to ≤ 180 mg/L the CWQG is calculated using this equation:
	CWQG (µg/L)= e{1.273[ln(hardness)]-4.705}. At hardness >180 mg/L, the CWQG is 7 µg/L. If the hardness is unknown, the CWQG is 1 µg/L
**	The CWQG for nickel is related to water hardness. When the water hardness is 0 to ≤ 60 mg/L, the CWQG is 25 µg/L. At hardness > 60 to ≤ 180 mg/L the CWQG is calculated using this equation:
	CWQG (µg/L) = e{0.76[ln(hardness)]+1.06}. At hardness >180 mg/L, the CWQG is 150 µg/L. If the hardness is unknown, the CWQG is 25 µg/L

Table
Summary of Surface Water Analytical Data - 19006404502
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Notes:

CCME	Canadian Council of Ministers of the Environment
A	Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Life - Freshwater Aquatics Short Term
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PWQO	Provincial Water Quality Objectives of the Ministry of Environment and Energy (MOEE, 1999)
C	PWQO Table 2
D	PWQO Table 2 - Calculated
E	PWQO Table 2 - Interim
6.5[A]	Concentration exceeds the indicated standard.
15.2	Measured concentration did not exceed the indicated standard.
<0.50	Laboratory reporting limit was greater than the applicable standard.
<0.03	Analyte was not detected at a concentration greater than the laboratory reporting limit.
n/v	No standard/guideline value.
-	Parameter not analyzed / not available.
EQ1	The short-term benchmark is for dissolved zinc and is calculated using the following equation: Benchmark = exp(0.833[ln(hardness mg·L-1)] + 0.240[ln(DOC mg·L-1)] + 0.526). The value in the table is for surface water of 50 mg CaCO3·L−1 hardness and 0.5 mg·L−1 dissolved organic carbon (DOC).
	The benchmark equation is valid between hardness 13.8 and 250.5 mg CaCO3·L−1 and DOC 0.3 and 17.3 mg·L−1.
EQ2	The long-term CWQG is for dissolved zinc and is calculated using the following equation: CWQG = exp(0.947[ln(hardness mg·L-1)] - 0.815[pH] + 0.398[ln(DOC mg·L-1)] + 4.625). The value in the table is for surface water of 50 mg CaCO3·L−1 hardness, pH of 7.5 and 0.5 mg·L−1 DOC.
	The CWQG equation is valid between hardness 23.4 and 399 mg CaCO3·L−1, pH 6.5 and 8.13 and DOC 0.3 to 22.9 mg·L−1.
EQ3	The short-term benchmark is calculated using the benchmark calculator in Appendix B of the Scientific Criteria Document for the Development of the Canadian Water Quality Guidelines for the Protection of Aquatic Life: Manganese or the following equation:
	Benchmark = exp(0.878[ln(hardness)] + 4.76) where the benchmark is expressed in dissolved manganese concentration (µg/L), and hardness is measured as CaCO3 equivalents in mg/L. The value in the table is for surface water of 50 mg/L hardness. The benchmark equation is valid between hardness 25 and 250 mg/L.
EQ4	The long-term CWQG is found using the look-up table (see Table 5) or the CWQG and benchmark calculator is Appendix B of CCME (2019). The value in the table is for surface water of 50 mg/L hardness and pH of 7.5. The CWQG table is valid between hardness 25 and 670 mg/L and pH 5.8 and 8.4.
LTG	The CWQG for cadmium (i.e. long-term guideline) of 0.09 µg·L-1 is for waters of 50 mg CaCO3·L-1 hardness. The CWQG for cadmium is related to water hardness (as CaCO3): When the water hardness is > 0 to < 17 mg/L, the CWQG is 0.04 µg/L; at hardness ≥ 17 to ≤ 280 mg/L, the CWQG is calculated using this equation (CWQG (µg/L) = 10^{0.83(log[hardness]) – 2.46 });
	At hardness > 280 mg/L, the CWQG is 0.37 µg/L.
n1	Guideline is expressed as Nitrite (as N) in ug/L. This value is equivalent to 197 ug/L for Nitrite.
s3	The PWQO for beryllium is hardness dependent. If hardness <75 mg/L than PWQO is 0.011 mg/L. For hardness > 75 mg/L, PWQO is 1.1 mg/L.
s2	Sulphate Guideline is hardness dependent. For hardness between 0-30 mg/L, guideline is 128 mg/L. For hardness between 31-75 mg/L, guideline is 218 mg/L. For hardness between 76-180 mg/L, guideline is 309 mg/L. For hardness between 181-250 mg/L, guideline is 429 mg/L. For hardness >250 mg/L, guideline is determined on a site specific basis.
	For hardness >250 mg/L and no site specific criteria is available, sampled were flagged as exceeding above 430mg/L.
s4	Applies to Phosphorus, total. PWQO is 0.03 mg/L for rivers and streams, 0.02 mg/L for lakes, and 0.01 mg/L for lakes naturally below this value.
s9	The PWQO for dissolved oxygen is both temperature and biota dependent. See page 17 of MOE (1994).
s12	The interim PWQO for cadmium is hardness dependent. If hardness <100 mg/L than PWQO is 0.0001 mg/L. For hardness >100 mg/L, PWQO is 0.0005 mg/L.
s13	The interim PWQO for copper is hardness dependent. If hardness <20 mg/L than PWQO is 0.001 mg/L. For hardness >20 mg/L, PWQO is 0.005 mg/L.
s14	PWQO for lead is alkalinity dependent. For alkalinity <20 mg/L, PWQO is 0.005 mg/L. For alkalinity between 20-40 mg/L, PWQO is 0.01 mg/L. For alkalinity between 40-80 mg/L, PWQO is 0.02 mg/L. For alkalinity >80 mg/L, PWQO is 0.025 mg/L.
s15	Interim PWQO for lead is hardness dependent. For hardness <30 mg/L, interim PWQO is 0.001 mg/L. For hardness between 30-80 mg/L, interim PWQO is 0.003 mg/L. For hardness >80 mg/L, interim PWQO is 0.005 mg/L.
s16	Alkalinity should not be decreased by more than 25% of the natural concentration.
STB	The short-term benchmark concentration of 1.0 µg·L-1 is for waters of 50 mg CaCO3·L-1 hardness. The short-term benchmark for cadmium is related to water hardness (as CaCO3): When the water hardness is 0 to < 5.3 mg/L, the short-term benchmark is 0.11 µg/L,
	At hardness ≥ 5.3 to ≤ 360 mg/L, the short-term benchmark is calculated using this equation (Short-term benchmark (µg/L) = 10^{1.016[log[hardness]) – 1.71 });
TBC1	Value is minimum value available. Sample-specific value to be calculated (equation).
VAR	Lowest acceptable dissolved oxygen concentration: for warm water biota: early life stages = 6000 µg/L; for warm water biota: other life stages = 5500 µg/L; for cold water biota: early life stages = 9500 µg/L; for cold water biota: other life stages = 6500 µg/L
VAR1	Variable, 5 µg/L if pH < 6.5 and 100 µg/L if pH > 6.5
*	The CWQG for copper is related to water hardness. When the water hardness is 0 to < 82 mg/L, the CWQG is 2 µg/L. At hardness ≥82 to ≤180 mg/L the CWQG is calculated using this equation:
	CWQG (µg/L) = 0.2 * e{0.8545[ln(hardness)]-1.465}. At hardness >180 mg/L, the CWQG is 4 µg/L. If the hardness is unknown, the CWQG is 2 µg/L
#	The CWQG for lead is related to water hardness. When the hardness is 0 to ≤ 60 mg/L, the CWQG is 1 µg/L. At hardness >60 to ≤ 180 mg/L the CWQG is calculated using this equation:
	CWQG (µg/L)= e{1.273[ln(hardness)]-4.705}. At hardness >180 mg/L, the CWQG is 7 µg/L. If the hardness is unknown, the CWQG is 1 µg/L
**	The CWQG for nickel is related to water hardness. When the water hardness is 0 to ≤ 60 mg/L, the CWQG is 25 µg/L. At hardness > 60 to ≤ 180 mg/L the CWQG is calculated using this equation:
	CWQG (µg/L) = e{0.76[ln(hardness)]+1.06}. At hardness >180 mg/L, the CWQG is 150 µg/L. If the hardness is unknown, the CWQG is 25 µg/L

Table
Summary of Surface Water Analytical Data - 19006404502
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

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15.2	Measured concentration did not exceed the indicated standard.
<0.50	Laboratory reporting limit was greater than the applicable standard.
<0.03	Analyte was not detected at a concentration greater than the laboratory reporting limit.
n/v	No standard/guideline value.
-	Parameter not analyzed / not available.
EQ1	The short-term benchmark is for dissolved zinc and is calculated using the following equation: Benchmark = exp(0.833[ln(hardness mg·L-1)] + 0.240[ln(DOC mg·L-1)] + 0.526). The value in the table is for surface water of 50 mg CaCO3·L−1 hardness and 0.5 mg·L−1 dissolved organic carbon (DOC).
	The benchmark equation is valid between hardness 13.8 and 250.5 mg CaCO3·L−1 and DOC 0.3 and 17.3 mg·L−1.
EQ2	The long-term CWQG is for dissolved zinc and is calculated using the following equation: CWQG = exp(0.947[ln(hardness mg·L-1)] - 0.815[pH] + 0.398[ln(DOC mg·L-1)] + 4.625). The value in the table is for surface water of 50 mg CaCO3·L−1 hardness, pH of 7.5 and 0.5 mg·L−1 DOC.
	The CWQG equation is valid between hardness 23.4 and 399 mg CaCO3·L−1, pH 6.5 and 8.13 and DOC 0.3 to 22.9 mg·L−1.
EQ3	The short-term benchmark is calculated using the benchmark calculator in Appendix B of the Scientific Criteria Document for the Development of the Canadian Water Quality Guidelines for the Protection of Aquatic Life: Manganese or the following equation:
	Benchmark = exp(0.878[ln(hardness)] + 4.76) where the benchmark is expressed in dissolved manganese concentration (µg/L), and hardness is measured as CaCO3 equivalents in mg/L. The value in the table is for surface water of 50 mg/L hardness. The benchmark equation is valid between hardness 25 and 250 mg/L.
EQ4	The long-term CWQG is found using the look-up table (see Table 5) or the CWQG and benchmark calculator is Appendix B of CCME (2019). The value in the table is for surface water of 50 mg/L hardness and pH of 7.5. The CWQG table is valid between hardness 25 and 670 mg/L and pH 5.8 and 8.4.
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	At hardness > 280 mg/L, the CWQG is 0.37 µg/L.
n1	Guideline is expressed as Nitrite (as N) in ug/L. This value is equivalent to 197 ug/L for Nitrite.
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s15	Interim PWQO for lead is hardness dependent. For hardness <30 mg/L, interim PWQO is 0.001 mg/L. For hardness between 30-80 mg/L, interim PWQO is 0.003 mg/L. For hardness >80 mg/L, interim PWQO is 0.005 mg/L.
s16	Alkalinity should not be decreased by more than 25% of the natural concentration.
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s15	Interim PWQO for lead is hardness dependent. For hardness <30 mg/L, interim PWQO is 0.001 mg/L. For hardness between 30-80 mg/L, interim PWQO is 0.003 mg/L. For hardness >80 mg/L, interim PWQO is 0.005 mg/L.
s16	Alkalinity should not be decreased by more than 25% of the natural concentration.
STB	The short-term benchmark concentration of 1.0 µg·L-1 is for waters of 50 mg CaCO3·L-1 hardness. The short-term benchmark for cadmium is related to water hardness (as CaCO3): When the water hardness is 0 to < 5.3 mg/L, the short-term benchmark is 0.11 µg/L,
	At hardness ≥ 5.3 to ≤ 360 mg/L, the short-term benchmark is calculated using this equation (Short-term benchmark (µg/L) = 10^{1.016[log[hardness]) – 1.71 });
TBC1	Value is minimum value available. Sample-specific value to be calculated (equation).
VAR	Lowest acceptable dissolved oxygen concentration: for warm water biota: early life stages = 6000 µg/L; for warm water biota: other life stages = 5500 µg/L; for cold water biota: early life stages = 9500 µg/L; for cold water biota: other life stages = 6500 µg/L
VAR1	Variable, 5 µg/L if pH < 6.5 and 100 µg/L if pH > 6.5
*	The CWQG for copper is related to water hardness. When the water hardness is 0 to < 82 mg/L, the CWQG is 2 µg/L. At hardness ≥82 to ≤180 mg/L the CWQG is calculated using this equation:
	CWQG (µg/L) = 0.2 * e{0.8545[ln(hardness)]-1.465}. At hardness >180 mg/L, the CWQG is 4 µg/L. If the hardness is unknown, the CWQG is 2 µg/L
#	The CWQG for lead is related to water hardness. When the hardness is 0 to ≤ 60 mg/L, the CWQG is 1 µg/L. At hardness >60 to ≤ 180 mg/L the CWQG is calculated using this equation:
	CWQG (µg/L)= e{1.273[ln(hardness)]-4.705}. At hardness >180 mg/L, the CWQG is 7 µg/L. If the hardness is unknown, the CWQG is 1 µg/L
**	The CWQG for nickel is related to water hardness. When the water hardness is 0 to ≤ 60 mg/L, the CWQG is 25 µg/L. At hardness > 60 to ≤ 180 mg/L the CWQG is calculated using this equation:
	CWQG (µg/L) = e{0.76[ln(hardness)]+1.06}. At hardness >180 mg/L, the CWQG is 150 µg/L. If the hardness is unknown, the CWQG is 25 µg/L

Appendix B.6 Local Water Quality Data

Table
Summary of Surface Water Analytical Data - Lakes
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					DAVLK			GERLK													JACLK		JACLK (Continued)
Sample Date					3-Jun-22	16-Sep-22	13-Jul-23	11-Aug-21	26-Oct-21	3-Jun-22	3-Jun-22	31-Aug-22	31-Aug-22	20-Oct-22	17-Feb-23	29-May-23	29-May-23	10-Jun-23	5-Jul-23	12-Jul-23	5-Dec-23	3-Jun-22	16-Sep-22	17-Oct-22
Sample ID					NDR-DAVLK	NDR-DavLk	NDR-DavLk	NDR-GERLK	NDR-GERK	NDR-GERLK	CNC-DUP-02	GERR LK	GERR LK	NDR-GERLK	GerLK	GERLK-Bottom	GERLK-Top	NDR-GERLK	GERLK	NDR-GERLK	GERLK	NDR-JACLK	NDR-JacLk	NDR-JACLK
Sampling Company					UNKNOWN	UNKNOWN	UNKNOWN	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory					ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	TESTMARK	TESTMARK	TESTMARK	ALS	TESTMARK	ALS	TESTMARK	ALS	ALS	ALS
Laboratory Work Order					WT2205034	WT2215061	WT2322070	L2626399	L2656799	WT2205034	WT2205034	WT2213095	WT2213095	WT2219907	491080	500662	500662	WT2317497	504954	WT2322070	521073	WT2205034	WT2215061	WT2219907
Laboratory Sample ID					WT2205034-003	WT2215061-004	WT2322070-002	L2626399-4	L2656799-5	WT2205034-001	WT2205034-004	WT2213095-001	WT2213095-002	WT2219907-006	1852152	1885910	1885909	WT2317497-002	1901003	WT2322070-004	1958861	WT2205034-002	WT2215061-001	WT2219907-014
Sample Type	Units	CCME	PWQO	BC MECC							Field Duplicate													
Field Parameters																								
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	-	-	-	-	-	-	-	-	-	-	**6.22[BC]**	7.28	8.05	-	7.67	-	6.89	-	-	-
Temperature, Field	deg C	n/v	30_{96}[C]	n/v	-	-	-	-	-	-	-	-	-	-	2.33	11.8	20.63	-	27.42	-	0.07	-	-	-
General Chemistry																								
Acidity as CaCO3	mg/L	n/v	n/v	n/v	<2.0	<2.0	<2	<2.0	<2.0	<2.0	<2.0	<2.0	-	<2.0	10	27	10	<2	12	<2	11	<2.0	<2.0	<2.0
Alkalinity, Total	mg/L	n/v	n/v	n/v	138	122	116	153	163	122	116	139	-	136	73	268	96	98.9	110	114	111	196	132	137
Ammonia (as N)	mg/L	$_{TBC2}$[B]	n/v	n/v	0.0108	0.0430	0.0201	0.015	0.017	0.0185	0.0140	0.0204	-	0.0364	0.145	0.356	0.023	0.007	0.024	0.013	0.058	0.0365	0.0242	0.0780
Bromide	mg/L	n/v	n/v	n/v	-	-	<0.1	<0.10	<0.10	-	-	-	-	-	-	-	-	<0.1	-	<0.1	-	-	-	-
Chloride	mg/L	640[A] 120[B]	n/v	n/v	<0.50	<0.50	<0.5	<0.50	0.92	0.52	<0.50	<0.50	-	0.58	0.5	1.1	0.5	<0.5	0.5	<0.5	0.7	<0.50	<0.50	<0.50
Chlorophyll a	µg/L	n/v	n/v	n/v	-	0.721	-	-	-	-	-	-	2.40	-	-	-	-	-	-	-	-	-	1.40	-
Chrysotile Asbestos (>0.5 um)	MFL	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysotile Asbestos (>10 um)	MFL	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide	mg/L	0.0050[B]	n/v	n/v	<0.0020	<0.0020	-	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	-	<0.0020	-	-	-	-	-	-	-	<0.0020	<0.0020	<0.0020
Cyanide (Free)	mg/L	0.0050[B]	0.0050[C]	n/v	<0.0020	<0.0020	<0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	-	<0.0020	<0.001	-	-	<0.002	-	<0.002	-	<0.0020	<0.0020	<0.0020
Cyanide (Strong Acid Dissociable)	mg/L	0.0050[B]	n/v	n/v	-	-	<0.002	-	-	-	-	-	-	-	<0.002	-	-	<0.002	-	<0.002	-	-	-	-
Cyanide (Weak Acid Dissociable)	mg/L	0.0050[B]	n/v	n/v	<0.0020	<0.0020	<0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	-	<0.0020	<0.001	-	-	<0.002	-	<0.002	-	<0.0020	<0.0020	<0.0020
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	13.9	6.6	17.5	-	14.8	-	46	-	-	-
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	229	220	225	273	297	202	203	264	-	258	138	477	173	183	221	217	216	249	242	258
Fluoride	mg/L	0.12[B]	n/v	n/v	0.032	0.037	0.037	0.073	0.079	0.052	0.044	0.074	-	0.062	<0.05	0.11	<0.05	0.053	<0.05	0.059	<0.05	0.049	0.060	0.053
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	117	114	118	140	147	105	107	144	-	133	56.1	233	86.6	104	105	114	110	130	118	131
Nitrate (as N)	mg/L	124[A] 3.0[B]	n/v	n/v	<0.020	<0.020	<0.02	<0.020	<0.020	<0.020	<0.020	<0.020	-	<0.020	0.3	<0.1	<0.1	<0.02	<0.1	<0.02	<0.1	<0.020	<0.020	<0.020
Nitrite (as N)	mg/L	0.060[B]	n/v	n/v	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	-	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.32[B]**	<0.010	<0.010	<0.010
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	8.31	8.40	8.43	8.24	8.08	8.17	8.15	8.19	-	8.21	7.54	7.56	7.64	8.32	8	8.23	7.25	8.37	8.43	8.31
Phosphorus, Total	mg/L	n/v	0.020_{94}[E]	n/v	0.0072	0.0045	0.0055	0.0116	**0.022[E]**	0.0177	0.0127	0.0131	-	0.0102	0.019	**0.233[E]**	0.008	0.0154	**0.028[E]**	0.0091	**0.213[E]**	0.0118	0.0078	0.0036
Radium-226	Bq/L	n/v	1[C]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}_{t2}$	2.48	2.64	2.14	1.3	1.28	1.03	0.98	1.36	-	1.07	1.6	1.7	1.6	1.02	1.6	1.13	1.4	2.02	1.73	1.49
BC MECC Sulfate Guideline (s2)					309	309	309	309	309	309	309	309	218	309	218	429	309	309	309	309	309	309	309	309
Total Dissolved Solids	mg/L	n/v	n/v	n/v	98	114	106	183	167	123	113	140	-	153	105	235	115	102	100	136	195	102	122	130
Total Suspended Solids	mg/L	$_{SN}$[B]	n/v	n/v	<3.0	<3.0	<3	<3.0	<3.0	3.4	<3.0	<3.0	-	<7.5	1	12	1.3	<3	1.3	<3	27.3	4.0	<3.0	<3.0

See notes on last page

Table
Summary of Surface Water Analytical Data - Lakes
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					DAVLK			GERLK													JACLK		JACLK (Continued)
Sample Date					3-Jun-22	16-Sep-22	13-Jul-23	11-Aug-21	26-Oct-21	3-Jun-22	3-Jun-22	31-Aug-22	31-Aug-22	20-Oct-22	17-Feb-23	29-May-23	29-May-23	10-Jun-23	5-Jul-23	12-Jul-23	5-Dec-23	3-Jun-22	16-Sep-22	17-Oct-22
Sample ID					NDR-DAVLK	NDR-DavLk	NDR-DavLk	NDR-GERLK	NDR-GERK	NDR-GERLK	CNC-DUP-02	GERR LK	GERR LK	NDR-GERLK	GerLK	GERLK-Bottom	GERLK-Top	NDR-GERLK	GERLK	NDR-GERLK	GERLk	NDR-JACLK	NDR-JacLk	NDR-JACLK
Sampling Company					UNKNOWN	UNKNOWN	UNKNOWN	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory					ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	TESTMARK	TESTMARK	TESTMARK	ALS	TESTMARK	ALS	TESTMARK	ALS	ALS	ALS
Laboratory Work Order					WT2205034	WT2215061	WT2322070	L2626399	L2656799	WT2205034	WT2205034	WT2213095	WT2213095	WT2219907	491080	500662	500662	WT2317497	504954	WT2322070	521073	WT2205034	WT2215061	WT2219907
Laboratory Sample ID					WT2205034-003	WT2215061-004	WT2322070-002	L2626399-4	L2656799-5	WT2205034-001	WT2205034-004	WT2213095-001	WT2213095-002	WT2219907-006	1852152	1885910	1885909	WT2317497-002	1901003	WT2322070-004	1958861	WT2205034-002	WT2215061-001	WT2219907-014
Sample Type	Units	CCME	PWQO	BC MECC							Field Duplicate													
Metals - Dissolved																								
Aluminum	µg/L	$5/100_{VAR1}$ [B]	n/v	n/v	1.2	<1	<1	1.6	10.7	46.3	43.6	2.7	-	25.3	23	17	33	29.5	15	8.9	**135** [B]	7.6	1.6	3.9
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aluminum (0.2u)	µg/L	n/v	75 [E]	n/v	-	-	-	-	-	-	-	-	-	-	-	3	26	-	13	-	-	-	-	-
Antimony	µg/L	n/v	20 [E]	n/v	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.5	<0.5	<0.5	<0.1	0.4	<0.1	<0.1	<0.1	<0.1	<0.1
Arsenic	µg/L	5 [B]	100 [C] 5 [E]	n/v	0.14	0.13	0.16	0.49	0.46	0.53	0.51	0.61	-	0.53	<1	<1	<1	0.45	0.4	0.48	0.8	0.21	0.25	0.2
Barium	µg/L	n/v	n/v	n/v	9.6	9.81	8.58	15.8	19.5	13.5	13.8	18.7	-	17.9	10	58	11	12.8	22.2	15	16.8	13.4	12.9	13.9
Beryllium	µg/L	n/v	$11/1,100_{s3}$ [C]	n/v	<0.02	<0.02	<0.02	<0.1	<0.1	<0.02	<0.02	<0.02	-	<0.02	<0.5	<0.5	<0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	11	1100	11	1100	1100	1100	1100	1100	1100	1100	1100	1100
Bismuth	µg/L	n/v	n/v	n/v	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<1	<1	<1	<0.05	0.09	<0.05	<0.05	<0.05	<0.05	<0.05
Boron	µg/L	29,000 [A] 1,500 [B]	200_a [E]	n/v	<10	<10	<10	14	13	<10	<10	<10	-	<10	<2	9	5	<10	7	<10	4	<10	<10	<10
Cadmium	µg/L	1.0_{STB} [A] 0.09_{LTG} [B]	0.2^C $0.1/0.5_{s12}$ [E]	n/v	<0.005	<0.005	<0.005	<0.005	<0.005	0.0068	<0.005	<0.005	-	<0.005	<0.1	<0.1	<0.1	<0.005	0.01	<0.005	0.03	<0.005	<0.005	<0.005
CWQG Cadmium Guideline (STB)					2.46	2.4	2.48	2.95	3.1	2.21	2.25	3.04	1.57	2.8	1.17	4.96	1.81	2.18	2.21	2.4	2.31	2.74	2.48	2.76
CWQG Cadmium Guideline (LTG)					0.18	0.18	0.18	0.21	0.22	0.17	0.17	0.21	0.12	0.2	0.1	0.32	0.14	0.16	0.17	0.18	0.17	0.2	0.18	0.2
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.5	0.1	0.5	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	32,000	30,400	31,800	41,100	42,900	29,300	29,800	40,700	-	36,800	16,300	68,800	25,000	29,500	31,200	32,300	29,800	34,600	29,900	33,600
Cerium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	<1	<1	<1	-	<1	-	<1	-	-	-
Cesium	µg/L	n/v	n/v	n/v	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<1	<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	µg/L	n/v	n/v	n/v	<0.5	<0.5	<0.5	0.17	0.17	<0.5	<0.5	<0.5	-	<0.5	2	2	<1	<0.5	1.5	<0.5	1.6	<0.5	<0.5	<0.5
Cobalt	µg/L	n/v	0.9^E	n/v	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	0.1	0.3	0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1
Copper	µg/L	2_{TBC1} [B]	5^C $1/5_{s13}$ [E]	n/v	<0.2	<0.2	<0.2	0.21	0.2	0.58	0.53	0.27	-	0.22	<1	<1	1	0.5	**6** [BCE]	0.4	<0.2	<0.2	<0.2	<0.2
CCME Copper Guideline					2.7	2.6	2.7	3.2	3.3	2.5	2.5	3.2	2	3	2	4	2.1	2.4	2.5	2.6	2.6	3	2.7	3
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Europium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	<1	<1	<1	-	<1	-	<1	-	-	-
Gallium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	<1	2	<1	-	<1	-	<1	-	-	-
Iron	µg/L	300 [B]	300 [C]	n/v	<10	<10	<10	32	198	167	167	37	-	**361** [BC]	290	**6,500** [BC]	300	151	300	90	**580** [BC]	12	<10	33
Lanthanum	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	<1	<1	<1	-	<1	-	<1	-	-	-
Lead	µg/L	1_{TBC1} [B]	$5/10/20/25_{s14}$ [C] $1/3/5_{s15}$ [E]	n/v	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.1	<0.1	<0.1	<0.05	0.07	<0.05	0.14	<0.05	<0.05	<0.05
CCME Lead Guideline					3.9	3.8	3.9	4.9	5.2	3.4	3.5	5.1	2.2	4.6	1	7	2.6	3.3	3.4	3.8	3.6	4.4	3.9	4.5
PWQO Lead Guideline (s14)					25	25	25	25	25	25	25	25	20	25	20	25	25	25	25	25	25	25	25	25
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	3	5	3	5	5	5	5	5	5	5	5	5
Lithium	µg/L	n/v	n/v	n/v	1	<1	1.4	1.6	1.9	<1	1	1.8	-	1.4	<5	<5	<5	1.1	1	1.3	2	1.2	<1	1.1
Magnesium	µg/L	n/v	n/v	n/v	8,930	9,280	9,460	11,200	11,300	7,670	7,820	10,300	-	10,000	4,030	15,600	5,770	7,280	7,850	8,190	7,250	10,500	10,600	11,500
Manganese	µg/L	$3,600_{EQ3}$ [A] 430_{EQ4} [B]	n/v	n/v	1.47	0.42	1.05	3.44	87.5	15.1	14.7	1.56	-	85.8	28	530	9	3.4	5.5	3.26	41	18.7	1.38	63.4
CCME Manganese Guideline (EQ3)					7640.3	7468	7697.6	8944.2	9335.7	6947.8	7063.8	9168.2	5170.7	8550.3	4007.1	13988.8	5866.5	6889.6	6947.8	7468	7237.4	8380.8	7697.6	8437.3
CCME Manganese Guideline (EQ4)					370	250	250	390	390	370	370	390	490	390	430	640	490	370	370	370	610	390	250	390
Mercury	µg/L	0.026 [B]	0.2^C	n/v	-	-	-	0.000077	0.000148	-	-	-	-	-	***<0.1***	***<0.1***	***<0.1***	-	***<0.1***	-	***<0.1***	-	-	-
Mercury (by CV)	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73 [B]	40 [E]	n/v	<0.05	<0.05	<0.05	0.159	0.144	0.099	0.104	0.147	-	0.137	<1	<1	<1	0.117	0.24	0.159	0.44	0.092	0.084	0.083
Nickel	µg/L	25_{TBC1} [B]	25^C	n/v	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1	<1	<1	<0.5	0.6	<0.5	0.9	<0.5	<0.5	<0.5
CCME Nickel Guideline					107.7	105.6	108.4	123.4	128.1	99.2	100.6	126.1	76.8	118.7	25	150	85.7	98.5	99.2	105.6	102.8	116.7	108.4	117.3
Niobium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	<1	<1	<1	-	<1	-	<1	-	-	-
Phosphorus	µg/L	n/v	30_{s4} [E]	n/v	***<50***	***<50***	***<50***	<30	<30	***<50***	***<50***	***<50***	-	***<50***	***<50***	**440** [E]	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***
Potassium	µg/L	n/v	n/v	n/v	913	836	900	1,090	1,120	835	835	1,080	-	970	490	1,800	700	688	820	810	760	1,060	1,030	1,120
Rhodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	<1	<1	<1	-	<1	-	<1	-	-	-
Rubidium	µg/L	n/v	n/v	n/v	1.31	1.52	1.42	1.7	1.65	1.23	1.22	1.66	-	1.42	<1	2	1	1.11	1.2	1.22	1.2	1.31	1.49	1.48
Scandium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	<1	5	<1	-	<1	-	2	-	-	-
Selenium	µg/L	1 [B]	100 [C]	n/v	0.053	<0.05	<0.05	0.057	0.051	0.075	0.091	0.077	-	0.069	<0.2	<0.2	<0.2	0.084	<0.05	0.073	0.14	<0.05	<0.05	<0.05
Silicon	µg/L	n/v	n/v	n/v	2,540	2,580	1,870	2,220	2,980	1,890	1,890	2,250	-	3,300	1,400	7,300	1,300	1,350	1,910	1,420	3,220	1,550	1,300	1,840
Silver	µg/L	0.25 [B]	0.1 [C]	n/v	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sodium	µg/L	n/v	n/v	n/v	1,380	1,330	1,380	3,640	3,770	2,510	2,540	3,670	-	3,290	1,400	5,300	1,900	2,210	2,590	2,740	2,680	1,790	1,820	1,850
Strontium	µg/L	n/v	n/v	n/v	39.2	41.1	43.2	79.6	79.5	52.2	53.7	76.4	-	69	31	93	34	50.7	49.6	60.9	55.4	48.6	48.5	53.8
Sulfur	µg/L	n/v	n/v	n/v	1,010	930	920	850	890	530	<500	720	-	<500	<800	4,000	4,300	<500	1,900	580	1,300	900	610	520
Tellurium	µg/L	n/v	n/v	n/v	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/L	0.8 [B]	0.3_b [E]	n/v	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01
Thorium	µg/L	n/v	n/v	n/v	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tin	µg/L	n/v	n/v	n/v	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<1	2	2	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1
Titanium	µg/L	n/v	n/v	n/v	<0.3	<0.3	<0.3	<0.3	<0.3	0.95	0.78	<0.3	-	0.54	<1	5	1	0.63	0.7	<0.3	3	<0.3	<0.3	<0.3
Tungsten	µg/L	n/v	30_E [E]	n/v	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<1	<1	<1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Uranium	µg/L	33 [A] 15 [B]	5_E [E]	n/v	0.084	0.072	0.084	0.039	0.037	0.032	0.031	0.034	-	0.033	<1	<1	<1	0.035	0.03	0.034	0.04	0.045	0.038	0.039
Vanadium	µg/L	n/v	6 [E]	n/v	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1	<1	<1	<0.5	0.6	<0.5	0.6	<0.5	<0.5	<0.5
Yttrium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	<1	<1	<1	-	<1	-	<1	-	-	-
Zinc	µg/L	37_{EQ1} [A] 7.0_{EQ2} [B]	30^C 20 [E]	n/v	<1	<1	<1	<1	1.2	1.8	1.6	<1	-	1.2	6	2	2	<1	3	<1	6	1.9	1.4	<1
CCME Zinc Guideline (EQ1)					75.4	73.8	75.9	87.6	91.2	68.9	70	89.6	52.1	83.9	40.9	133.8	58.7	68.4	68.9	73.8	71.6	82.3	75.9	82.9
CCME Zinc Guideline (EQ2)					8.1	31.8	32.1	44.1	52.6	35.5	36.8	47.1	44.6	43	28.2	79.6	43.1	31.1	36	36.6	109	36.9	32.1	39.1
Zirconium	µg/L	n/v	4_a [E]	n/v	<0.3	<0.3	<0.3	<0.2	<0.2	<0.3	<0.3	<0.3	-	<0.3	<1	<1	<1	<0.3	0.5	<0.3	0.9	<0.3	<0.3	<0.3

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Table
Summary of Surface Water Analytical Data - Lakes
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					DAVLK			GERLK													JACLK		JACLK (Continued)
Sample Date Sample ID Sampling Company Laboratory Laboratory Work Order Laboratory Sample ID Sample Type	Units	CCME	PWQO	BC MECC	3-Jun-22 NDR-DAVLK UNKNOWN ALS WT2205034 WT2205034-003	16-Sep-22 NDR-DavLk UNKNOWN ALS WT2215061 WT2215061-004	13-Jul-23 NDR-DavLk UNKNOWN ALS WT2322070 WT2322070-002	11-Aug-21 NDR-GERLK CNC ALS L2626399 L2626399-4	26-Oct-21 NDR-GERK CNC ALS L2656799 L2656799-5	3-Jun-22 NDR-GERLK UNKNOWN ALS WT2205034 WT2205034-001	3-Jun-22 CNC-DUP-02 UNKNOWN ALS WT2205034 WT2205034-004 Field Duplicate	31-Aug-22 GERR LK UNKNOWN ALS WT2213095 WT2213095-001	31-Aug-22 GERR LK UNKNOWN ALS WT2213095 WT2213095-002	20-Oct-22 NDR-GERLK UNKNOWN ALS WT2219907 WT2219907-006	17-Feb-23 GerLK UNKNOWN TESTMARK 491080 1852152	29-May-23 GERLK-Bottom UNKNOWN TESTMARK 500662 1885910	29-May-23 GERLK-Top UNKNOWN TESTMARK 500662 1885909	10-Jun-23 NDR-GERLK UNKNOWN ALS WT2317497 WT2317497-002	5-Jul-23 GERLk UNKNOWN TESTMARK 504954 1901003	12-Jul-23 NDR-GERLK UNKNOWN ALS WT2322070 WT2322070-004	5-Dec-23 GERLk STANTEC TESTMARK 521073 1958861	3-Jun-22 NDR-JACLK UNKNOWN ALS WT2205034 WT2205034-002	16-Sep-22 NDR-JacLk UNKNOWN ALS WT2215061 WT2215061-001	17-Oct-22 NDR-JACLK UNKNOWN ALS WT2219907 WT2219907-014
Metals - Total																							
Aluminum	µg/L	$5/100_{VAR1}$[B]	n/v	n/v	7.7	3.4	<3	6.5	21.3	59.2	55.8	16.1	-	40.4	30	22	44	41.7	26	13.7	**365**[B]	**180**[B]	6.5	8.6
CWQG Aluminum Guideline					100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Antimony	µg/L	n/v	20^{E}	n/v	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.5	<0.5	<0.5	<0.1	0.6	<0.1	<0.1	<0.1	<0.1	<0.1
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	0.15	0.16	0.16	0.54	0.48	0.52	0.5	0.58	-	0.56	<1	<1	<1	0.45	0.4	0.5	0.9	0.29	0.24	0.25
Barium	µg/L	n/v	n/v	n/v	9.54	9.86	8.33	15.4	19.8	14.7	14.5	18.5	-	19.6	10	56	11	12.8	13.9	15	28.7	15.3	13.4	14.7
Beryllium	µg/L	n/v	$11/1,100_{s3}$[C]	n/v	<0.02	<0.02	<0.02	<0.1	<0.1	<0.02	<0.02	<0.02	-	<0.02	<0.5	<0.5	<0.5	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02
PWQO Beryllium Guideline					1100	1100	1100	1100	1100	1100	1100	1100	11	1100	11	1100	1100	1100	1100	1100	1100	1100	1100	1100
Bismuth	µg/L	n/v	n/v	n/v	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<1	<1	<1	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Boron	µg/L	$29,000^{A}$ $1,500^{B}$ $1.0_{STB}{}^{A}$ $0.09_{LTG}{}^{B}$	$200_{s}{}^{E}$	n/v	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<2	8	4	<10	6	<10	4	<10	<10	<10
Cadmium	µg/L		0.2^{C} $0.1/0.5_{s12}{}^{E}$	n/v	<0.005	<0.005	<0.005	<0.005	<0.005	0.0103	<0.005	<0.005	-	<0.005	0.03	<0.02	<0.02	<0.005	0.009	<0.005	0.04	0.0102	<0.005	<0.005
CWQG Cadmium Guideline (STB)					2.46	2.4	2.48	2.95	3.1	2.21	2.25	3.04	1.57	2.8	1.17	4.96	1.81	2.18	2.21	2.4	2.31	2.74	2.48	2.76
CWQG Cadmium Guideline (LTG)					0.18	0.18	0.18	0.21	0.22	0.17	0.17	0.21	0.12	0.2	0.1	0.32	0.14	0.16	0.17	0.18	0.17	0.2	0.18	0.2
PWQO Cadmium Guideline					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.5	0.1	0.5	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	n/v	33,200	29,300	31,800	40,100	40,900	31,200	30,200	41,900	-	39,900	15,400	71,000	24,500	26,800	31,300	32,200	31,400	37,400	29,400	36,500
Cerium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	<1	<1	<1	-	<1	-	<1	-	-	-
Cesium	µg/L	n/v	n/v	n/v	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<1	<1	<1	<0.01	<0.01	<0.01	0.02	0.023	<0.01	<0.01
Chromium	µg/L	n/v	n/v	n/v	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1	<1	<1	<0.5	0.5	<0.5	1.6	0.68	<0.5	<0.5
Cobalt	µg/L	n/v	0.9^{E}	n/v	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	0.1	0.3	0.1	<0.1	<0.1	<0.1	0.3	0.24	<0.1	<0.1
Copper	µg/L	$2_{TBC1}{}^{B}$	5^{C} $1/5_{s13}{}^{E}$	n/v	<0.5	<0.5	<0.5	<0.5	<0.5	1.44	0.75	0.51	-	<0.5	**3**[B]	<1	<1	0.65	0.8	<0.5	0.8	0.92	<0.5	<0.5
CCME Copper Guideline					2.7	2.6	2.7	3.2	3.3	2.5	2.5	3.2	2	3	2	4	2.1	2.4	2.5	2.6	2.6	3	2.7	3
PWQO Copper Guideline					5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Europium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	<1	<1	<1	-	<1	-	<1	-	-	-
Gallium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	<1	2	<1	-	<1	-	<1	-	-	-
Iron	µg/L	300^{B}	300^{C}	n/v	<10	<10	<10	76	**333**[BC]	226	212	102	-	**488**[BC]	296	**6,900**[BC]	**340**[BC]	187	**330**[BC]	117	**1,200**[BC]	299	16	65
Lanthanum	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	<1	<1	<1	-	<1	-	<1	-	-	-
Lead	µg/L	$1_{TBC1}{}^{B}$	$5/10/20/25_{s14}{}^{C}$ $1/3/5_{s15}{}^{E}$	n/v	<0.05	<0.05	<0.05	<0.05	<0.05	0.055	<0.05	0.248	-	<0.05	0.1	0.1	<0.1	<0.05	0.16	<0.05	0.38	0.265	<0.05	<0.05
CCME Lead Guideline					3.9	3.8	3.9	4.9	5.2	3.4	3.5	5.1	2.2	4.6	1	7	2.6	3.3	3.4	3.8	3.6	4.4	3.9	4.5
PWQO Lead Guideline (s14)					25	25	25	25	25	25	25	25	20	25	20	25	25	25	25	25	25	25	25	25
PWQO Lead Guideline (s15)					5	5	5	5	5	5	5	5	3	5	3	5	5	5	5	5	5	5	5	5
Lithium	µg/L	n/v	n/v	n/v	<1	<1	1.2	1.6	1.4	<1	<1	1.6	-	<1	<5	<5	<5	<1	2	1.2	2	1.2	<1	<1
Magnesium	µg/L	n/v	n/v	n/v	8,880	9,740	9,460	9,770	10,900	7,850	7,690	10,300	-	9,230	3,750	15,100	5,670	6,910	7,920	8,080	7,570	10,600	11,700	10,900
Manganese	µg/L	$3,600_{EQ3}{}^{A}$ $430_{EQ4}{}^{B}$	n/v	n/v	9.88	5.49	5.16	26.6	122	36.5	32.6	26.9	-	138	28	540	25	22.6	15.7	16.2	125	50.6	17.7	99.4
CCME Manganese Guideline (EQ3)					7640.3	7468	7697.6	8944.2	9335.7	6947.8	7063.8	9168.2	5170.7	8550.3	4007.1	13988.8	5866.5	6889.6	6947.8	7468	7237.4	8380.8	7697.6	8437.3
CCME Manganese Guideline (EQ4)					370	250	250	390	390	370	370	390	490	390	430	640	490	370	370	370	610	390	250	390
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	-	-	-	-	-	-	-	-	-	-	***<0.1***	***<0.1***	***<0.1***	-	***<0.1***	-	***<0.1***	-	-	-
Mercury (Trace)	ng/L	n/v	n/v	n/v	<0.5	<0.5	0.52	0.88	1.78	2.04	1.67	0.88	-	1.80	5	-	-	<5	-	1.61	-	0.63	0.61	<0.5
Methyl Mercury	ng/L	0.004^{B}	n/v	n/v	0.036	0.027	0.025	-	-	0.275	0.163	0.077	-	0.065	-	-	-	-	-	0.054	-	0.039	0.034	0.031
Molybdenum	µg/L	73^{B}	40^{E}	n/v	<0.05	<0.05	<0.05	0.173	0.172	0.121	0.113	0.174	-	0.142	<1	<1	<1	0.139	0.33	0.164	0.25	0.107	0.089	0.083
Nickel	µg/L	$25_{TBC1}{}^{B}$	25^{C}	n/v	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1	<1	<1	<0.5	<0.5	<0.5	1.6	0.6	<0.5	<0.5
CCME Nickel Guideline					107.7	105.6	108.4	123.4	128.1	99.2	100.6	126.1	76.8	118.7	25	150	85.7	98.5	99.2	105.6	102.8	116.7	108.4	117.3
Niobium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	<1	<1	<1	-	<1	-	<1	-	-	-
Phosphorus	µg/L	n/v	$30_{s4}{}^{E}$	n/v	***<50***	***<50***	***<50***	***<50***	***<50***	**139**[E]	***<50***	***<50***	-	***<50***	-	-	-	***<50***	-	***<50***	-	***<50***	***<50***	***<50***
Potassium	µg/L	n/v	n/v	n/v	880	889	910	1,050	1,130	1,040	847	1,080	-	1,030	450	1,700	700	721	820	814	870	1,230	1,100	1,200
Rhodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	<1	<1	<1	-	<1	-	<1	-	-	-
Rubidium	µg/L	n/v	n/v	n/v	1.45	1.5	1.44	1.66	1.73	1.39	1.3	1.63	-	1.49	<1	2	<1	1.14	1.2	1.31	1.5	1.72	1.57	1.68
Scandium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	<1	4	<1	-	<1	-	2	-	-	-
Selenium	µg/L	1^{B}	100^{C}	n/v	<0.05	<0.05	<0.05	0.062	0.061	0.086	0.072	0.067	-	0.073	0.3	<0.2	<0.2	0.07	0.07	0.074	0.15	<0.05	<0.05	<0.05
Silicon	µg/L	n/v	n/v	n/v	2,520	2,780	1,860	2,160	3,110	1,870	1,880	2,220	-	3,330	1,300	6,800	1,300	1,500	1,760	1,450	3,520	1,720	1,420	1,890
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	<0.01	<0.01	<0.01	<0.05	<0.05	<0.01	<0.01	<0.01	-	<0.01	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sodium	µg/L	n/v	n/v	n/v	1,360	1,530	1,380	3,470	3,920	2,760	2,560	3,710	-	3,240	1,320	5,100	1,800	2,270	2,630	2,680	2,700	2,100	2,000	1,940
Strontium	µg/L	n/v	n/v	n/v	39.3	42.8	42.9	73.3	77.9	55.8	56.5	77.5	-	70.5	31	91	34	49.2	48.9	62.3	56	51.7	52.9	54
Sulfur	µg/L	n/v	n/v	n/v	1,110	1,070	940	670	<500	570	<500	740	-	600	<800	4,000	4,100	580	1,700	600	1,200	780	760	690
Tellurium	µg/L	n/v	n/v	n/v	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/L	0.8^{B}	$0.3_{s}{}^{E}$	n/v	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01
Thorium	µg/L	n/v	n/v	n/v	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tin	µg/L	n/v	n/v	n/v	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<1	11	8	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1
Titanium	µg/L	n/v	n/v	n/v	<0.3	<0.3	<0.3	<0.3	0.69	1.35	1.28	0.7	-	1.2	<1	6	2	1.02	1.2	0.39	10.7	8.73	<0.3	<0.3
Tungsten	µg/L	n/v	$30_{s}{}^{E}$	n/v	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Uranium	µg/L	33^{A} 15^{B}	$5_{s}{}^{E}$	n/v	0.093	0.076	0.088	0.039	0.036	0.033	0.032	0.038	-	0.035	<1	<1	<1	0.037	0.03	0.036	0.05	0.056	0.04	0.042
Vanadium	µg/L	n/v	6^{E}	n/v	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1	<1	<1	<0.5	<0.5	<0.5	1	0.61	<0.5	<0.5
Yttrium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	<1	<1	<1	-	<1	-	<1	-	-	-
Zinc	µg/L	$37_{EQ1}{}^{A}$ $7.0_{EQ2}{}^{B}$	30^{C} 20^{E}	n/v	<3	<3	<3	<3	<3	14.4	7.3	<3	-	<3	6	2	2	<3	3	<3	7	19.3	<3	<3
CCME Zinc Guideline (EQ1)					75.4	73.8	75.9	87.6	91.2	68.9	70	89.6	52.1	83.9	40.9	133.8	58.7	68.4	68.9	73.8	71.6	82.3	75.9	82.9
CCME Zinc Guideline (EQ2)					8.1	31.8	32.1	44.1	52.6	35.5	36.8	47.1	44.6	43	28.2	79.6	43.1	31.1	36	36.6	109	36.9	32.1	39.1
Zirconium	µg/L	n/v	$4_{s}{}^{E}$	n/v	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<1	<1	<1	<0.2	0.4	<0.2	1.2	<0.2	<0.2	<0.2

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Table
Summary of Surface Water Analytical Data - Lakes
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				MARLK																	
Sample Date				11-Aug-21	11-Aug-21	26-Oct-21	2-Jun-22	31-Aug-22	31-Aug-22	20-Oct-22	27-Feb-23	22-Mar-23	18-Apr-23	29-May-23	29-May-23	12-Jun-23	13-Jun-23	4-Jul-23	4-Jul-23	12-Jul-23	2-Aug-23	26-Sep-23
Sample ID				NDR-MARLK	CNC-DUP-02	NDR-MARLK	NDR-MARLK	MAR LK	MAR LK	IDR-MARKLK-SU	MARLk	MARLk	MARLk	MARLK-Bottom	MARLK-Top	NDR-MarLk	MARLk	MARLk	SWDup	NDR-MARLK	MARLK	MARLk - Top
Sampling Company				CNC	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	CNC
Laboratory				ALS	ALS	ALS	ALS	ALS	ALS	ALS	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	TESTMARK	TESTMARK
Laboratory Work Order				L2626399	L2626399	L2656799	WT2205034	WT2213095	WT2213095	WT2219907	492012	493768	496175	500662	500662	WT2317497	502693	504663	504663	WT2322070	507996	513823
Laboratory Sample ID				L2626399-5	L2626399-10	L2656799-6	WT2205034-006	WT2213095-003	WT2213095-004	WT2219907-008	1855433	1861619	1869720	1885908	1885907	WT2317497-003	1893192	1899885	1899889	WT2322070-005	1911839	1932452
Sample Type	Units	CCME	PWQO		Field Duplicate														Field Duplicate			
Field Parameters																						
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	-	-	-	-	-	-	-	**5.95[BC]**	6.8	**6.11[BC]**	7.1	7.59	-	**5.77[BC]**	**5.25[BC]**	-	-	**5.57[BC]**	**4.09[BC]**
Temperature, Field	deg C	n/v	30_{s6}[C]	-	-	-	-	-	-	-	0.11	0.52	0.52	12.2	21.87	-	13.49	18.46	-	-	17.05	14.37
General Chemistry																						
Acidity as CaCO3	mg/L	n/v	n/v	<2.0	<2.0	2.2	<2.0	<2.0	-	<2.0	11	15	11	9	8	<2	20	9	12	2.4	7	8.9
Alkalinity, Total	mg/L	n/v	n/v	63.3	62.8	68.4	42.0	29.2	-	57.0	31	34	12	60	41	40.3	20	19	20	57.4	54	57.1
Ammonia (as N)	mg/L	$_{TBC2}$[B]	n/v	<0.010	<0.010	0.011	0.0120	0.0306	-	0.0169	0.104	0.117	0.019	0.028	0.026	0.0057	0.049	0.063	0.068	0.0108	0.021	0.019
Bromide	mg/L	n/v	n/v	<0.10	<0.10	<0.10	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	<0.1	-	-
Chloride	mg/L	640[A] 120[B]	n/v	<0.50	<0.50	<0.50	<0.50	<0.50	-	<0.50	<0.2	0.2	<0.2	0.2	0.2	<0.5	<0.2	<0.2	<0.2	<0.5	0.2	0.32
Chlorophyll a	µg/L	n/v	n/v	-	-	-	-	-	2.19	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysotile Asbestos (>0.5 um)	MFL	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysotile Asbestos (>10 um)	MFL	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide	mg/L	0.0050[B]	n/v	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	-	<0.0020	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide (Free)	mg/L	0.0050[B]	0.0050[C]	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	-	<0.0020	0.004	0.003	0.005	0.002	0.004	<0.002	0.002	0.002	<0.001	<0.002	0.004	0.0019
Cyanide (Strong Acid Dissociable)	mg/L	0.0050[B]	n/v	-	-	-	-	-	-	-	<0.002	0.002	0.003	0.004	0.004	0.0041	<0.002	**0.006[B]**	0.005	<0.002	0.003	<0.002
Cyanide (Weak Acid Dissociable)	mg/L	0.0050[B]	n/v	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	-	<0.0020	0.002	0.003	<0.001	0.002	**0.016[B]**	0.0022	0.001	0.003	0.003	<0.002	<0.001	0.0029
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	-	-	-	-	-	-	-	22.6	23.7	14.9	17.8	19.5	-	27.1	34.8	36.7	-	19.7	20.4
Electrical Conductivity, Lab	µS/cm	n/v	n/v	120	119	129	20.0	113	-	110	59	65	22	111	77	76.3	38	38	40	89.5	108	105
Fluoride	mg/L	0.12[B]	n/v	0.03	0.031	0.032	<0.020	0.031	-	0.025	<0.05	<0.05	<0.05	<0.05	<0.05	0.024	<0.05	<0.05	<0.05	0.025	<0.05	<0.05
Hardness (as CaCO3)	mg/L	n/v	n/v	64.7	64.9	67.5	46.0	65.2	-	61.4	31.3	32.2	11.3	80.4	39.7	47.3	21.1	26	26.3	48.6	57.5	55.7
Nitrate (as N)	mg/L	124[A] 3.0[B]	n/v	<0.020	<0.020	<0.020	<0.020	<0.020	-	<0.020	<0.1	<0.1	<0.1	<0.1	<0.1	<0.02	<0.1	<0.1	<0.1	<0.02	<0.1	<0.1
Nitrite (as N)	mg/L	0.060[B]	n/v	<0.010	<0.010	<0.010	<0.010	<0.010	-	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.015
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	7.74	7.73	7.64	7.29	7.62	-	7.73	6.94	6.69	**6.32[BC]**	7.17	7.17	7.87	6.52	**6.45[BC]**	6.58	7.7	7.32	7.25
Phosphorus, Total	mg/L	n/v	0.020_{lit}[E]	0.0166	0.0147	0.0189	0.0098	0.0132	-	0.0117	**0.034[E]**	**0.027[E]**	**0.02[E]**	0.012	<0.002	0.0143	0.015	**0.02[E]**	**0.023[E]**	0.0123	0.014	0.017
Radium-226	Bq/L	n/v	1[C]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	0.33	0.33	0.4	<0.30	0.39	-	0.35	<0.5	<0.5	<0.5	0.8	<0.5	<0.3	<0.5	<0.5	<0.5	<0.3	<0.5	0.53
BC MECC Sulfate Guideline (s2)				218	218	218	218	218	218	218	218	218	128	309	218	218	128	128	128	218	218	218
Total Dissolved Solids	mg/L	n/v	n/v	88	95	93	62	78	-	104	65	85	65	90	70	57	65	115	105	74	70	75
Total Suspended Solids	mg/L	$_{SN}$[B]	n/v	<3.0	<3.0	<3.0	<3.0	<3.0	-	<3.0	6.7	3.7	4.7	6.3	1.3	<3	3.7	2	3	<3	1.3	1.7

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Table
Summary of Surface Water Analytical Data - Lakes
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				MARLK																	
Sample Date				11-Aug-21	11-Aug-21	26-Oct-21	2-Jun-22	31-Aug-22	31-Aug-22	20-Oct-22	27-Feb-23	22-Mar-23	18-Apr-23	29-May-23	29-May-23	12-Jun-23	13-Jun-23	4-Jul-23	4-Jul-23	12-Jul-23	2-Aug-23	26-Sep-23
Sample ID				NDR-MARLK	CNC-DUP-02	NDR-MARLK	NDR-MARLK	MAR LK	MAR LK	IDR-MARKLK-SU	MARLk	MARLk	MARLk	MARLk-Bottom	MARLk-Top	NDR-MarLk	MARLk	MARLk	SWDup	NDR-MARLK	MARLK	MARLk - Top
Sampling Company				CNC	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				ALS	ALS	ALS	ALS	ALS	ALS	ALS	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	TESTMARK	CNC
Laboratory Work Order				L2626399	L2626399	L2656799	WT2205034	WT2213095	WT2213095	WT2219907	492012	493768	496175	500662	500662	WT2317497	502693	504663	504663	WT2322070	507996	513823
Laboratory Sample ID				L2626399-5	L2626399-10	L2656799-6	WT2205034-006	WT2213095-003	WT2213095-004	WT2219907-008	1855433	1861619	1869720	1885908	1885907	WT2317497-003	1893192	1899885	1899889	WT2322070-005	1911839	1932452
Sample Type	Units	CCME	PWQO		Field Duplicate														Field Duplicate			
Metals - Dissolved																						
Aluminum	µg/L	$5/100_{VAR1}$ [B]	n/v	14.4	13.9	36	58.3	25.1	-	64.8	80	85	**48** [B]	37	39	54.1	**173** [B]	**191** [B]	**187** [B]	37.5	24	26.1
CWQG Aluminum Guideline				100	100	100	100	100	100	100	100	100	5	100	100	100	5	5	5	100	100	100
Aluminum (0.2u)	µg/L	n/v	75 [E]	-	-	-	-	-	-	-	-	**84** [E]	28	37	33	-	**141** [E]	-	-	-	-	-
Antimony	µg/L	n/v	20 [E]	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	0.2	-	-	<0.1	<0.1	<0.1
Arsenic	µg/L	5 [B]	100 [C] 5 [E]	0.58	0.58	0.54	0.53	0.76	-	0.56	<1	<1	<1	<1	<1	0.47	0.6	-	-	0.6	0.6	0.55
Barium	µg/L	n/v	n/v	5.77	5.76	7.2	5.74	6.69	-	7.5	4	5	13	7	5	5.25	15.7	-	-	5.32	14.6	4.81
Beryllium	µg/L	n/v	$11/1,100_{s3}$ [C]	<0.1	<0.1	<0.1	<0.02	<0.02	-	<0.02	<0.5	<0.5	<0.5	<0.5	<0.5	<0.02	<0.02	-	-	<0.02	<0.02	<0.02
PWQO Beryllium Guideline				11	11	11	11	11	11	11	11	11	11	1100	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<1	<1	<1	<1	<1	<0.05	<0.05	-	-	<0.05	<0.05	<0.05
Boron	µg/L	$29,000$ [A] $1,500$ [B]	200_a [E]	<10	<10	<10	<10	<10	-	<10	<2	<2	<2	4	3	<10	3	-	-	<10	<2	3.7
Cadmium	µg/L	1.0_{STB} [A] 0.09_{LTG} [B]	0.2 [C] $0.1/0.5_{s12}$ [E]	<0.005	<0.005	<0.005	0.0062	0.0068	-	0.0076	**<0.1**	**<0.1**	**<0.1**	<0.1	**<0.1**	0.0056	**0.06** [B]	-	-	0.0069	0.01	0.01
CWQG Cadmium Guideline (STB)				1.35	1.35	1.41	0.95	1.36	1.57	1.28	0.64	0.66	0.23	1.68	0.82	0.98	0.43	0.53	0.54	1.01	1.2	1.16
CWQG Cadmium Guideline (LTG)				0.11	0.11	0.11	0.08	0.11	0.12	0.11	0.06	0.06	0.04	0.13	0.07	0.09	0.04	0.05	0.05	0.09	0.1	0.1
PWQO Cadmium Guideline				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	19,100	18,500	20,100	12,800	18,600	-	16,900	9,270	9,000	3,180	14,700	11,400	13,400	6,090	-	-	13,400	17,200	15,400
Cerium	µg/L	n/v	n/v	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	-	<1	-	-	-	<1	<1
Cesium	µg/L	n/v	n/v	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<1	<1	<1	<1	<1	<0.01	<0.01	-	-	<0.01	<0.01	<0.01
Chromium	µg/L	n/v	n/v	0.2	0.19	0.22	<0.5	<0.5	-	<0.5	1	1	<1	1	<1	<0.5	0.8	-	-	<0.5	0.5	0.52
Cobalt	µg/L	n/v	0.9 [E]	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	0.3	0.2	<0.1	0.1	<0.1	<0.1	0.1	-	-	<0.1	<0.1	<0.1
Copper	µg/L	2_{TBC1} [B]	5 [C] $1/5_{s13}$ [E]	0.31	0.3	0.39	0.57	0.42	-	0.43	<1	<1	1	1	1	0.58	2	-	-	0.46	1.3	0.89
CCME Copper Guideline				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline				5	5	5	5	5	5	5	5	5	1	5	5	5	5	5	5	5	5	5
Europium	µg/L	n/v	n/v	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	-	<1	-	-	-	<1	<1
Gallium	µg/L	n/v	n/v	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	-	<1	-	-	-	<1	<1
Iron	µg/L	300 [B]	300 [C]	102	102	187	178	157	-	**390** [BC]	**454** [BC]	**425** [BC]	85	260	210	162	**410** [BC]	-	-	160	200	205
Lanthanum	µg/L	n/v	n/v	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	-	<1	-	-	-	<1	<1
Lead	µg/L	1_{TBC1} [B]	$5/10/20/25_{s14}$ [C] $1/3/5_{s15}$ [E]	<0.05	<0.05	0.104	<0.05	0.075	-	0.06	0.3	0.2	0.2	0.1	<0.1	<0.05	0.37	-	-	<0.05	<0.05	<0.05
CCME Lead Guideline				1.8	1.8	1.9	1	1.8	2.2	1.7	1	1	1	2.4	1	1	1	1	1	1	1	1
PWQO Lead Guideline (s14)				20	20	20	20	10	20	20	10	10	5	20	20	10	5	5	5	20	20	20
PWQO Lead Guideline (s15)				3	3	3	3	3	3	3	3	3	1	3	3	3	1	1	1	3	3	3
Lithium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	-	<1	<5	<5	<5	<5	<5	<1	<1	-	-	<1	<1	<1
Magnesium	µg/L	n/v	n/v	5,210	5,160	5,070	3,410	4,560	-	4,670	1,730	1,850	778	3,570	2,750	3,370	1,560	-	-	3,690	3,910	3,800
Manganese	µg/L	$3,600_{EQ3}$ [A] 430_{EQ4} [B]	n/v	6.26	6.16	33	7.42	7.49	-	41.8	91	109	11	25	11	6.72	23	-	-	4.74	25.4	12.7
CCME Manganese Guideline (EQ3)				4541.7	4554	4713.8	3366.2	4572.5	5170.7	4337.6	2400.7	2461.2	1970.8	5496.1	2957.9	3449.6	1970.8	2039.8	2060.5	3532.7	4094.8	3982
CCME Manganese Guideline (EQ4)				390	390	430	380	430	490	390	350	330	310	590	380	320	330	310	330	320	490	490
Mercury	µg/L	0.026 [B]	0.2 [C]	0.000125	0.00012	0.000085	-	-	-	-	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	-	***<0.1***	-	-	-	***<0.1***	***<0.1***
Mercury (by CV)	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	-
Molybdenum	µg/L	73 [B]	40 [E]	0.052	0.052	0.057	<0.05	0.057	-	0.051	<1	<1	<1	1	<1	<0.05	0.09	-	-	0.05	<0.05	<0.05
Nickel	µg/L	25_{TBC1} [B]	25 [C]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1	<1	<1	<1	<1	<0.5	0.7	-	-	<0.5	0.7	0.62
CCME Nickel Guideline				68.6	68.8	70.9	25	69.1	76.8	66	25	25	25	81	25	25	25	25	25	25	25	25
Niobium	µg/L	n/v	n/v	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	-	<1	-	-	-	<1	<1
Phosphorus	µg/L	n/v	30_{s4} [E]	<30	<30	<30	***<50***	***<50***	-	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	-	-	***<50***	***<50***	***<50***
Potassium	µg/L	n/v	n/v	428	430	502	361	384	-	421	180	350	200	400	300	269	190	-	-	270	320	310
Rhodium	µg/L	n/v	n/v	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	-	<1	-	-	-	<1	<1
Rubidium	µg/L	n/v	n/v	0.95	0.99	1.03	0.62	0.85	-	0.71	<1	2	<1	<1	<1	0.59	0.8	-	-	0.64	0.7	0.79
Scandium	µg/L	n/v	n/v	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	-	<1	-	-	-	<1	<1
Selenium	µg/L	1 [B]	100 [C]	<0.05	0.064	0.073	0.087	<0.5	-	0.096	<0.2	<0.5	<0.2	<0.2	<0.2	0.09	<0.05	-	-	0.102	<0.05	<0.05
Silicon	µg/L	n/v	n/v	779	792	1,660	864	1,130	-	1,880	1,600	2,100	<600	1,300	<600	505	870	-	-	585	650	1,290
Silver	µg/L	0.25 [B]	0.1 [C]	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	-	-	<0.01	<0.01	0.013
Sodium	µg/L	n/v	n/v	1,330	1,320	1,430	1,050	1,250	-	1,330	520	540	210	1,100	800	836	350	-	-	886	1,000	1,030
Strontium	µg/L	n/v	n/v	33.3	32.5	32.6	21.6	31.8	-	31.9	12	13	5	20	15	21.4	10.3	-	-	24.8	23.4	26.2
Sulfur	µg/L	n/v	n/v	510	<500	740	<500	<500	-	<500	<800	<800	<800	3,700	3,400	<500	2,100	-	-	<500	<500	<500
Tellurium	µg/L	n/v	n/v	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<1	<1	<1	<1	<1	<0.2	<0.2	-	-	<0.2	<0.2	<0.2
Thallium	µg/L	0.8 [B]	0.3_b [E]	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	-	-	<0.01	<0.01	<0.01
Thorium	µg/L	n/v	n/v	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<1	<1	<1	<1	<1	<0.1	<0.1	-	-	<0.1	<0.1	<0.1
Tin	µg/L	n/v	n/v	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<1	<1	<1	11	<1	<0.1	<0.1	-	-	<0.1	0.1	<0.1
Titanium	µg/L	n/v	n/v	0.43	0.45	1.14	1.24	0.74	-	1.59	4	4	2	1	1	1.74	4.7	-	-	1.14	0.7	1
Tungsten	µg/L	n/v	30_a [E]	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<1	<1	<1	<1	<1	<0.1	<0.1	-	-	<0.1	<0.1	<0.1
Uranium	µg/L	33 [A] 15 [B]	5_a [E]	0.024	0.025	0.022	0.026	0.025	-	0.037	<1	<1	<1	<1	<1	0.033	0.05	-	-	0.03	0.02	0.015
Vanadium	µg/L	n/v	6 [E]	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1	<1	<1	<1	<1	<0.5	0.6	-	-	<0.5	<0.5	<0.5
Yttrium	µg/L	n/v	n/v	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	-	<1	-	-	-	<1	<1
Zinc	µg/L	37_{EQ1} [A] 7.0_{EQ2} [B]	30 [C] 20 [E]	<1	<1	3.6	3.9	1.9	-	3.8	4	4	4	5	3	2.4	10	-	-	1.4	3	2.4
CCME Zinc Guideline (EQ1)				46	46.2	47.7	34.6	46.3	52.1	44.1	25.1	25.7	12.7	55.2	30.6	35.5	18.1	21.5	21.7	36.3	41.7	40.6
CCME Zinc Guideline (EQ2)				31.9	32.2	36	33.3	35.4	44.6	30.6	32.2	41.3	17.2	59.3	31.5	21.3	33.5	47.8	44.4	25.1	39.7	41.4
Zirconium	µg/L	n/v	4_a [E]	<0.2	<0.2	<0.2	<0.3	<0.3	-	<0.3	<1	<1	<1	<1	<1	<0.3	1.1	-	-	<0.3	0.5	0.67

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Table
Summary of Surface Water Analytical Data - Lakes
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				MARLK																	
Sample Date				11-Aug-21	11-Aug-21	26-Oct-21	2-Jun-22	31-Aug-22	31-Aug-22	20-Oct-22	27-Feb-23	22-Mar-23	18-Apr-23	29-May-23	29-May-23	12-Jun-23	13-Jun-23	4-Jul-23	4-Jul-23	12-Jul-23	2-Aug-23	26-Sep-23
Sample ID				NDR-MARLK	CNC-DUP-02	NDR-MARLK	NDR-MARLK	MAR LK	MAR LK	IDR-MARKLK-SU	MARLk	MARLk	MARLk	MARLK-Bottom	MARLK-Top	NDR-MarLk	MARLk	MARLk	SWDup	NDR-MARLK	MARLk	MARLk - Top
Sampling Company				CNC	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				ALS	ALS	ALS	ALS	ALS	ALS	ALS	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	TESTMARK	TESTMARK
Laboratory Work Order				L2626399	L2626399	L2656799	WT2205034	WT2213095	WT2213095	WT2219907	492012	493768	496175	500662	500662	WT2317497	502693	504663	504663	WT2322070	507996	513823
Laboratory Sample ID				L2626399-5	L2626399-10	L2656799-6	WT2205034-006	WT2213095-003	WT2213095-004	WT2219907-008	1855433	1861619	1869720	1885908	1885907	WT2317497-003	1893192	1899885	1899889	WT2322070-005	1911839	1932452
Sample Type	Units	CCME	PWQO		Field Duplicate														Field Duplicate			
Metals - Total																						
Aluminum	µg/L	$5/100_{VAR1}$[B]	n/v	24.3	23.7	70.4	90.4	54.9	-	**113**[B]	**378**[B]	**352**[B]	**166**[B]	66	67	96.9	**279**[B]	**308**[B]	**319**[B]	78.4	43	97.3
CWQG Aluminum Guideline				100	100	100	100	100	100	100	100	100	5	100	100	100	5	5	5	100	100	100
Antimony	µg/L	n/v	20^{E}	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	0.5	<0.1	<0.1	<0.1	<0.1	0.18
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	0.6	0.61	0.58	0.51	0.72	-	0.67	<1	<1	<1	<1	<1	0.49	0.6	1	0.9	0.61	0.5	0.5
Barium	µg/L	n/v	n/v	5.69	6.31	7.48	8.47	6.88	-	8.3	6	7	3	11	5	5.38	4.2	5	5.1	5.66	5	5.17
Beryllium	µg/L	n/v	$11/1,100_{s3}$[C]	<0.1	<0.1	<0.1	<0.02	<0.02	-	<0.02	<0.5	<0.5	<0.5	<0.5	<0.5	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02
PWQO Beryllium Guideline				11	11	11	11	11	11	11	11	11	11	1100	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<1	<1	<1	<1	<1	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05
Boron	µg/L	$29,000^{A}$ $1,500^{B}$	200_{s}[E]	<10	<10	<10	<10	<10	-	<10	<2	<2	<2	4	3	<10	2	3	3	<10	<2	2.8
Cadmium	µg/L	1.0_{STB}[A] 0.09_{LTG}[B]	0.2^{C} $0.1/0.5_{s12}$[E]	<0.005	<0.005	0.0053	0.0077	0.0108	-	0.0108	0.03	0.04	<0.02	<0.02	<0.02	0.0061	**0.06**[B]	**0.08**[B]	**0.08**[B]	0.0064	0.007	0.017
CWQG Cadmium Guideline (STB)				1.35	1.35	1.41	0.95	1.36	1.57	1.28	0.64	0.66	0.23	1.68	0.82	0.98	0.43	0.53	0.54	1.01	1.2	1.16
CWQG Cadmium Guideline (LTG)				0.11	0.11	0.11	0.08	0.11	0.12	0.11	0.06	0.06	0.04	0.13	0.07	0.09	0.04	0.05	0.05	0.09	0.1	0.1
PWQO Cadmium Guideline				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	18,400	18,600	18,800	12,900	19,300	-	18,600	9,180	8,970	3,260	23,000	11,300	12,000	6,140	7,430	7,520	14,300	15,800	14,000
Cerium	µg/L	n/v	n/v	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	-	<1	1	1	-	<1	<1
Cesium	µg/L	n/v	n/v	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<1	<1	<1	<1	<1	<0.01	0.01	0.01	0.02	<0.01	<0.01	<0.01
Chromium	µg/L	n/v	n/v	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1	1	<1	<1	<1	<0.5	1.2	1.2	1.2	<0.5	0.4	0.79
Cobalt	µg/L	n/v	0.9^{E}	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	0.5	0.4	<0.1	0.2	<0.1	<0.1	0.1	0.4	0.4	<0.1	<0.1	<0.1
Copper	µg/L	2_{TBC1}[B]	5^{C} $1/5_{s13}$[E]	<0.5	<0.5	<0.5	0.82	1	-	0.54	1	<1	1	<1	<1	0.68	0.8	**3.8**[B]	**3.8**[B]	0.63	0.6	0.95
CCME Copper Guideline				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline				5	5	5	5	5	5	5	5	5	1	5	5	5	5	5	5	5	5	5
Europium	µg/L	n/v	n/v	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1
Gallium	µg/L	n/v	n/v	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1
Iron	µg/L	300^{B}	300^{C}	132	132	280	242	215	-	**510**[BC]	**760**[BC]	**820**[BC]	200	**570**[BC]	240	216	**500**[BC]	**700**[BC]	**600**[BC]	219	210	**336**[BC]
Lanthanum	µg/L	n/v	n/v	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1
Lead	µg/L	1_{TBC1}[B]	$5/10/20/25_{s14}$[C] $1/3/5_{s15}$[E]	<0.05	<0.05	0.091	0.076	0.742	-	0.112	0.6	0.5	0.2	0.1	<0.1	0.068	0.41	0.61	0.64	0.087	0.06	0.25
CCME Lead Guideline				1.8	1.8	1.9	1	1.8	2.2	1.7	1	1	1	2.4	1	1	1	1	1	1	1	1
PWQO Lead Guideline (s14)				20	20	20	20	10	20	20	10	10	5	20	20	10	5	5	5	20	20	20
PWQO Lead Guideline (s15)				3	3	3	3	3	3	3	3	3	1	3	3	3	1	1	1	3	3	3
Lithium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	-	<1	<5	<5	<5	<5	<5	<1	<1	<1	<1	<1	<1	<1
Magnesium	µg/L	n/v	n/v	4,540	4,510	4,980	3,580	4,680	-	4,590	1,780	1,840	812	5,430	2,760	3,160	1,580	1,920	1,920	3,590	3,710	3,540
Manganese	µg/L	$3,600_{EQ3}$[A] 430_{EQ4}[B]	n/v	23.4	23.4	43.6	14.1	35.1	-	55.5	116	128	12	163	16	11.6	25	96.3	104	21.2	21	26.9
CCME Manganese Guideline (EQ3)				4541.7	4554	4713.8	3366.2	4572.5	5170.7	4337.6	2400.7	2461.2	1970.8	5496.1	2957.9	3449.6	1970.8	2039.8	2060.5	3532.7	4094.8	3982
CCME Manganese Guideline (EQ4)				390	390	430	380	430	490	390	350	330	310	590	380	320	330	310	330	320	490	490
Mercury	µg/L	0.026^{B}	0.2^{C}	-	-	-	-	-	-	-	***<0.1***	***<0.1***	***<0.1***	-	-	-	-	-	-	-	-	<0.01
Mercury (Trace)	ng/L	n/v	n/v	1.13	1.64	1.91	2.47	1.22	-	1.54	0.84	3.03	4.78	2.88	3.4	<5	5.44	6.91	7.5	2.53	1.94	2.01
Methyl Mercury	ng/L	0.004^{B}	n/v	-	-	-	0.091	0.057	-	0.094	-	-	-	0.150	0.100	-	0.200	0.160	0.170	0.058	0.310	0.130
Molybdenum	µg/L	73^{B}	40^{E}	0.053	0.058	0.064	<0.05	0.066	-	0.057	<1	<1	<1	1	<1	0.051	0.35	<0.05	<0.05	0.06	0.22	0.14
Nickel	µg/L	25_{TBC1}[B]	25^{C}	<0.5	<0.5	<0.5	0.61	<0.5	-	<0.5	<1	<1	<1	<1	<1	<0.5	0.8	1.1	1	<0.5	0.8	<0.5
CCME Nickel Guideline				68.6	68.8	70.9	25	69.1	76.8	66	25	25	25	81	25	25	25	25	25	25	25	25
Niobium	µg/L	n/v	n/v	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1
Phosphorus	µg/L	n/v	30_{s4}[E]	***<50***	***<50***	***<50***	***<50***	***<50***	-	***<50***	-	-	-	-	-	***<50***	-	-	-	***<50***	-	-
Potassium	µg/L	n/v	n/v	421	435	484	400	400	-	460	290	400	230	600	300	294	210	280	290	301	310	320
Rhodium	µg/L	n/v	n/v	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1
Rubidium	µg/L	n/v	n/v	0.93	0.99	1.08	0.67	0.9	-	0.91	1	2	<1	<1	<1	0.65	1	1.2	1.3	0.74	0.7	0.94
Scandium	µg/L	n/v	n/v	-	-	-	-	-	-	-	<1	1	<1	2	<1	-	<1	1	1	-	<1	<1
Selenium	µg/L	1^{B}	100^{C}	0.069	0.08	0.115	0.068	0.078	-	0.093	<0.2	<0.5	<0.2	0.2	<0.2	0.077	0.15	0.39	0.08	0.079	<0.05	0.065
Silicon	µg/L	n/v	n/v	940	830	1,740	930	1,160	-	2,030	2,000	2,500	770	2,300	600	660	1,510	1,560	1,530	710	670	1,550
Silver	µg/L	0.25^{B}	0.1^{C}	<0.05	<0.05	<0.05	<0.01	<0.01	-	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	**0.16**[C]	<0.01	<0.01	<0.01	<0.01	0.019
Sodium	µg/L	n/v	n/v	1,300	1,280	1,460	1,090	1,370	-	1,370	600	530	210	1,700	800	844	360	400	410	891	970	1,010
Strontium	µg/L	n/v	n/v	31.1	31.6	34.6	22.9	32	-	31.3	13	14	5	31	15	20.4	10.6	13.6	14	24.8	22.5	24.5
Sulfur	µg/L	n/v	n/v	530	<500	<500	<500	<500	-	<500	<800	<800	<800	3,200	3,800	<500	2,700	1,400	1,300	<500	<500	<500
Tellurium	µg/L	n/v	n/v	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<1	<1	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/L	0.8^{B}	0.3_{p}[E]	<0.01	<0.01	0.012	<0.01	<0.01	-	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01
Thorium	µg/L	n/v	n/v	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<1	<1	<1	<1	<1	<0.1	<0.1	0.1	0.1	<0.1	<0.1	<0.1
Tin	µg/L	n/v	n/v	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<1	<1	<1	21	11	<0.1	0.5	0.2	0.4	<0.1	0.3	0.41
Titanium	µg/L	n/v	n/v	0.79	0.69	2.38	2.49	1.65	-	3.55	16	15	7	3	2	3.14	10.2	13.8	12.8	3.28	1.5	3.42
Tungsten	µg/L	n/v	30_{p}[E]	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Uranium	µg/L	33^{A} 15^{B}	5_{p}[E]	0.026	0.026	0.048	0.028	0.029	-	0.042	<1	<1	<1	<1	<1	0.035	0.06	0.07	0.07	0.032	0.03	0.029
Vanadium	µg/L	n/v	6^{E}	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1	<1	<1	<1	<1	<0.5	0.8	1.1	1.1	<0.5	<0.5	<0.5
Yttrium	µg/L	n/v	n/v	-	-	-	-	-	-	-	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1
Zinc	µg/L	37_{EQ1}[A] 7.0_{EQ2}[B]	30^{C} 20^{E}	<3	<3	<3	6.1	4.5	-	4.2	7	5	3	6	3	<3	7	8	11	<3	13	2.1
CCME Zinc Guideline (EQ1)				46	46.2	47.7	34.6	46.3	52.1	44.1	25.1	25.7	12.7	55.2	30.6	35.5	18.1	21.5	21.7	36.3	41.7	40.6
CCME Zinc Guideline (EQ2)				31.9	32.2	36	33.3	35.4	44.6	30.6	32.2	41.3	17.2	59.3	31.5	21.3	33.5	47.8	44.4	25.1	39.7	41.4
Zirconium	µg/L	n/v	4_{s}[E]	<0.2	<0.2	<0.2	<0.2	0.24	-	<0.2	<1	<1	<1	<1	<1	<0.2	1.2	1.3	1.5	0.23	0.6	0.89

See notes on last page

Table
Summary of Surface Water Analytical Data - Lakes
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				MARLK (Continued)			MELLK	NDRP01							NDRP02			NDRP-02B	NDRP03						
Sample Date				31-Oct-23	21-Nov-23	5-Dec-23	16-Sep-22	8-Aug-21	24-Oct-21	24-Oct-21	29-May-22	30-Aug-22	13-Oct-22	5-Aug-21	31-May-22	13-Oct-22	31-Aug-22	5-Aug-21	20-Oct-21	2-Jun-22	30-Aug-22	30-Aug-22	13-Oct-22
Sample ID				MARLk	MARLk	MARLk	NDR-MelLk	NDR-P-01	NDR-P-01	CNC-DUP-02	NDR-P-01	NDR-P-01	NDR-P-01	NDR-P-02A	NDR-1-02	NDR-P-02	BDRP-02B	NDR-P-03	NDR-P-03	NDR-P-03	NDRP03	DUP01	NDR-P-03
Sampling Company				STANTEC	STANTEC	STANTEC	UNKNOWN	CNC	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	CNC	UNKNOWN	UNKNOWN	UNKNOWN	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				TESTMARK	TESTMARK	TESTMARK	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	UNKNOWN	ALS	ALS	ALS	ALS	ALS	ALS
Laboratory Work Order				517852	519857	521073	WT2215061	L2625067	L2655497	L2655497	L2711537	WT2213093	WT2218393	L2623628	WT2204941	WT2218393	WT2213093	L2623628	L2657480	WT2205034	WT2213093	WT2213093	WT2218393
Laboratory Sample ID				1948016	1954955	1958860	WT2215061-002	L2625067-4	L2655497-6	L2655497-7	L2711537-2	WT2213093-012	WT2218393-003	L2623628-2	WT2204941-004	WT2218393-002	WT2213093-005	L2623628-3	L2657480-4	WT2205034-005	WT2213093-010	WT2213093-006	WT2218393-001
Sample Type	Units	CCME	PWQO							Field Duplicate												Field Duplicate	
Field Parameters																							
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	**4.68[BC]**	**5.64[BC]**	**6.3[BC]**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Temperature, Field	deg C	n/v	30_{96}[C]	2.48	0.52	0.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
General Chemistry																							
Acidity as CaCO3	mg/L	n/v	n/v	12	10	11	<2.0	4.6	8.7	8.2	13.0	4.2	9.1	<2.0	<2.0	<2.0	<2.0	<2.0	4.7	<2.0	<2.0	<2.0	3.3
Alkalinity, Total	mg/L	n/v	n/v	12	12	12	146	29.2	20	21.7	22.3	20.8	11.0	74.8	127	96.6	90.7	42.4	53.3	36.2	37.4	38.3	43.6
Ammonia (as N)	mg/L	$_{TBC2}$[B]	n/v	0.041	0.042	0.046	0.0074	0.016	0.02	0.023	0.016	0.0509	0.0366	0.019	<0.0050	<0.0050	0.0151	<0.010	<0.010	0.0201	0.0213	0.0102	0.0327
Bromide	mg/L	n/v	n/v	-	-	-	-	<0.10	<0.10	<0.10	<0.10	-	-	<0.10	-	-	-	<0.10	<0.10	-	-	-	-
Chloride	mg/L	640[A] 120[B]	n/v	<0.2	<0.2	0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chlorophyll a	µg/L	n/v	n/v	-	-	-	1.59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysotile Asbestos (>0.5 um)	MFL	n/v	n/v	-	-	0.51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysotile Asbestos (>10 um)	MFL	n/v	n/v	-	-	<0.51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide	mg/L	0.0050[B]	n/v	-	-	-	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0021	0.0021	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Cyanide (Free)	mg/L	0.0050[B]	0.0050[C]	<0.001	**0.007[BC]**	0.003	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0022	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Cyanide (Strong Acid Dissociable)	mg/L	0.0050[B]	n/v	<0.002	0.002	<0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide (Weak Acid Dissociable)	mg/L	0.0050[B]	n/v	0.002	0.003	0.004	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	29.3	35	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Electrical Conductivity, Lab	µS/cm	n/v	n/v	29	32	36	265	61.2	49.9	50.6	49.1	52.7	42.5	148	228	180	166	80.8	83.1	71.6	75.8	75.1	83.0
Fluoride	mg/L	0.12[B]	n/v	<0.05	<0.05	<0.05	0.044	0.021	<0.020	<0.020	<0.020	<0.020	<0.020	0.023	<0.020	0.022	0.026	0.021	0.02	<0.020	<0.020	<0.020	0.028
Hardness (as CaCO3)	mg/L	n/v	n/v	20.7	21.8	17.2	136	38.5	34.4	34.5	34.3	38.4	32.8	76.3	107	88.4	84.9	43.1	44.2	36.4	40.7	39.5	42.9
Nitrate (as N)	mg/L	124[A] 3.0[B]	n/v	<0.1	<0.1	<0.1	<0.020	<0.020	<0.020	<0.020	0.027	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Nitrite (as N)	mg/L	0.060[B]	n/v	<0.01	0.04	0.04	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	**5.78[BC]**	**6.04[BC]**	**5.92[BC]**	8.33	7.05	6.51	6.51	6.59	6.67	6.51	8.28	8.36	8.17	8.09	7.94	7.78	7.70	7.56	7.53	7.79
Phosphorus, Total	mg/L	n/v	0.020_{94}[E]	0.015	0.015	**0.03[E]**	0.0056	**0.0308[E]**	0.0196	0.0189	0.0163	0.0030	0.0078	0.0121	0.0083	0.0031	0.0096	0.0131	0.0159	0.0152	0.0039	0.0038	0.0060
Radium-226	Bq/L	n/v	1[C]	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	<0.011	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	<0.5	<0.5	<0.5	4.08	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
BC MECC Sulfate Guideline (s2)				128	128	128	309	218	218	218	218	218	218	309	309	309	309	218	218	218	218	218	218
Total Dissolved Solids	mg/L	n/v	n/v	75	95	65	142	114	122	118	83	107	119	100	120	93	81	66	48	31	40	51	50
Total Suspended Solids	mg/L	$_{SN}$[B]	n/v	1.3	1.7	2.3	<3.0	<3.0	<3.0	<3.0	5.2	<3.0	3.7	<3.0	<3.0	<3.0	<3.0	<3.0	3.4	3.6	<3.0	<3.0	3.7

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Table
Summary of Surface Water Analytical Data - Lakes
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				MARLK (Continued)			MELLK	NDRP01							NDRP02			NDRP-02B	NDRP03						
Sample Date				31-Oct-23	21-Nov-23	5-Dec-23	16-Sep-22	8-Aug-21	24-Oct-21	24-Oct-21	29-May-22	30-Aug-22	13-Oct-22	5-Aug-21	31-May-22	13-Oct-22	31-Aug-22	5-Aug-21	20-Oct-21	2-Jun-22	30-Aug-22	30-Aug-22	13-Oct-22
Sample ID				MARLk	MARLk	MARLk	NDR-MelLk	NDR-P-01	NDR-P-01	CNC-DUP-02	NDR-P-01	NDR-P-01	NDR-P-01	NDR-P-02A	NDR-1-02	NDR-P-02	BDRP-02B	NDR-P-03	NDR-P-03	NDR-P-03	NDRP03	DUP01	NDR-P-03
Sampling Company				STANTEC	STANTEC	STANTEC	UNKNOWN	CNC	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	CNC	UNKNOWN	UNKNOWN	UNKNOWN	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				TESTMARK	TESTMARK	TESTMARK	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS
Laboratory Work Order				517852	519857	521073	WT2215061	L2625067	L2655497	L2655497	L2711537	WT2213093	WT2218393	L2623628	WT2204941	WT2218393	WT2213093	L2623628	L2657480	WT2205034	WT2213093	WT2213093	WT2218393
Laboratory Sample ID				1948016	1954955	1958860	WT2215061-002	L2625067-4	L2655497-6	L2655497-7	L2711537-2	WT2213093-012	WT2218393-003	L2623628-2	WT2204941-004	WT2218393-002	WT2213093-005	L2623628-3	L2657480-4	WT2205034-005	WT2213093-010	WT2213093-006	WT2218393-001
Sample Type	Units	CCME	PWQO							Field Duplicate												Field Duplicate	
Metals - Dissolved																							
Aluminum	µg/L	$5/100_{VAR1}$ [B]	n/v	**120** [B]	**122** [B]	**106** [B]	<1	87.5	**205** [B]	**206** [B]	**231** [B]	**162** [B]	**243** [B]	4.4	3.1	1.3	3.3	18.4	7.6	25.6	19.9	19	8.5
CWQG Aluminum Guideline				5	5	5	100	100	5	5	5	100	5	100	100	100	100	100	100	100	100	100	100
Aluminum (0.2u)	µg/L	n/v	75 [E]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Antimony	µg/L	n/v	20 [E]	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Arsenic	µg/L	5 [B]	100 [C] 5 [E]	0.5	0.5	0.4	0.2	1.24	1.12	1.12	1.05	1.19	1.05	0.84	0.66	0.53	0.73	0.27	0.26	0.28	0.3	0.29	0.3
Barium	µg/L	n/v	n/v	3.4	3.8	3.4	14.3	6.79	3.37	3.36	6.26	8.74	4.54	3.44	2.11	1.93	3.66	1.27	2.33	2.87	2.32	2.33	2.56
Beryllium	µg/L	n/v	$11/1,100_{s3}$ [C]	<0.02	<0.02	<0.02	<0.02	<0.1	<0.1	<0.1	<0.1	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.1	<0.1	<0.02	<0.02	<0.02	<0.02
PWQO Beryllium Guideline				11	11	11	1100	11	11	11	11	11	11	1100	1100	1100	1100	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Boron	µg/L	$29,000$ [A] $1,500$ [B]	200_a [E]	4	<2	<2	<10	<10	<10	<10	<10	<10	<10	11	<10	<10	<10	<10	<10	<10	<10	<10	<10
Cadmium	µg/L	1.0_{STB} [A] 0.09_{LTG} [B]	0.2 [C] $0.1/0.5_{s12}$ [E]	0.04	0.04	0.04	<0.005	0.0123	0.0109	0.0139	0.0348	0.0164	0.0228	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
CWQG Cadmium Guideline (STB)				0.42	0.45	0.35	2.87	0.8	0.71	0.71	0.71	0.79	0.68	1.59	2.25	1.85	1.78	0.89	0.92	0.75	0.84	0.82	0.89
CWQG Cadmium Guideline (LTG)				0.04	0.04	0.04	0.2	0.07	0.07	0.07	0.07	0.07	0.06	0.13	0.17	0.14	0.14	0.08	0.08	0.07	0.08	0.07	0.08
PWQO Cadmium Guideline				0.1	0.1	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	5,620	6,020	4,710	36,500	11,600	9,900	9,910	10,200	10,600	9,670	23,400	34,800	27,500	25,000	11,700	12,500	9,910	11,100	10,700	12,400
Cerium	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cesium	µg/L	n/v	n/v	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	µg/L	n/v	n/v	0.8	0.4	0.7	<0.5	0.68	0.61	0.57	<0.5	0.62	0.82	0.11	<0.5	<0.5	<0.5	<0.1	0.13	<0.5	<0.5	<0.5	<0.5
Cobalt	µg/L	n/v	0.9 [E]	<0.1	<0.1	0.2	<0.1	0.12	0.13	0.12	0.27	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Copper	µg/L	2_{TBC1} [B]	5 [C] $1/5_{s13}$ [E]	1	1.4	**1.6** [E]	<0.2	0.47	0.49	0.46	0.92	0.27	0.57	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
CCME Copper Guideline				2	2	2	3.1	2	2	2	2	2	2	2	2.5	2.1	2.1	2	2	2	2	2	2
PWQO Copper Guideline				1	5	1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Europium	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gallium	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron	µg/L	300 [B]	300 [C]	**520** [BC]	**460** [BC]	**490** [BC]	<10	**322** [BC]	**618** [BC]	**619** [BC]	**444** [BC]	**622** [BC]	**613** [BC]	34	32	13	41	<10	13	26	13	13	42
Lanthanum	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	µg/L	1_{TBC1} [B]	$5/10/20/25_{s14}$ [C] $1/3/5_{s15}$ [E]	0.35	0.43	0.41	<0.05	0.857	0.137	0.13	0.344	0.305	0.217	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
CCME Lead Guideline				1	1	1	4.7	1	1	1	1	1	1	2.3	3.5	2.7	2.6	1	1	1	1	1	1
PWQO Lead Guideline (s14)				5	5	5	25	10	5	10	10	5	5	20	25	25	25	20	20	10	10	10	20
PWQO Lead Guideline (s15)				1	1	1	5	3	3	3	3	3	3	3	5	5	5	3	3	3	3	3	3
Lithium	µg/L	n/v	n/v	<1	<1	<1	1.1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Magnesium	µg/L	n/v	n/v	1,490	1,570	1,190	11,000	3,410	3,080	2,940	2,140	2,910	2,110	4,300	4,950	4,800	5,460	3,060	3,290	2,820	3,150	3,110	2,890
Manganese	µg/L	$3,600_{EQ3}$ [A] 430_{EQ4} [B]	n/v	39.1	36.5	94.2	0.88	26.5	13.9	14	72.3	110	20.2	4.51	9.13	4.17	5.3	0.63	1.22	1.04	0.66	0.41	1.4
CCME Manganese Guideline (EQ3)				1970.8	1970.8	1970.8	8719.4	2879.2	2608.2	2614.9	2601.5	2872.7	2501.4	5249.3	7063.8	5973.5	5765.3	3179.2	3250.3	2740.9	3023.2	2944.8	3166.2
CCME Manganese Guideline (EQ4)				290	290	290	390	380	330	330	330	330	330	350	370	350	350	320	320	320	350	350	320
Mercury	µg/L	0.026 [B]	0.2 [C]	***<0.1***	***<0.1***	***<0.1***	-	0.000086	0.000133	0.000137	-	-	-	0.000026	-	-	-	0.000034	0.000034	-	-	-	-
Mercury (by CV)	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73 [B]	40 [E]	0.07	0.08	0.1	0.084	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.067	0.25	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nickel	µg/L	25_{TBC1} [B]	25 [C]	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.77	0.59	0.76	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CCME Nickel Guideline				25	25	25	120.7	25	25	25	25	25	25	77.8	100.6	87	84.4	25	25	25	25	25	25
Niobium	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus	µg/L	n/v	30_{s4} [E]	***<50***	***<50***	***<50***	***<50***	<30	<30	<30	***<50***	***<50***	***<50***	<30	***<50***	***<50***	***<50***	<30	<30	***<50***	***<50***	***<50***	***<50***
Potassium	µg/L	n/v	n/v	210	180	150	1,060	55	103	101	184	106	81	2,350	2,390	1,850	1,600	315	340	339	308	299	363
Rhodium	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rubidium	µg/L	n/v	n/v	0.8	0.6	0.7	1.88	0.35	0.53	0.54	0.3	0.42	<0.2	2.27	1.64	1.48	1.44	0.55	0.67	0.53	0.56	0.55	0.68
Scandium	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	µg/L	1 [B]	100 [C]	0.19	<0.05	0.05	<0.05	0.155	0.201	0.157	0.168	0.176	0.172	<0.05	0.051	<0.05	<0.05	0.059	<0.05	0.07	0.063	0.06	0.06
Silicon	µg/L	n/v	n/v	1,000	970	1,080	3,180	825	1,640	1,620	173	1,610	817	1,700	545	785	1,180	213	449	324	282	311	407
Silver	µg/L	0.25 [B]	0.1 [C]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sodium	µg/L	n/v	n/v	450	430	370	1,550	507	709	692	556	420	600	269	361	416	324	490	519	506	526	492	512
Strontium	µg/L	n/v	n/v	11	9	9.1	49.4	25.3	15.5	15.7	19.4	25	16.8	22.8	17.3	23	28	17.2	16.2	14	18.8	18.3	17.6
Sulfur	µg/L	n/v	n/v	1,400	<500	<500	1,390	<500	<500	<500	<500	<500	610	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
Tellurium	µg/L	n/v	n/v	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/L	0.8 [B]	0.3_b [E]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Thorium	µg/L	n/v	n/v	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tin	µg/L	n/v	n/v	0.2	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Titanium	µg/L	n/v	n/v	4	3.7	3.9	<0.3	0.92	2.67	2.64	3.09	2.17	3.26	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Tungsten	µg/L	n/v	30_E [E]	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Uranium	µg/L	33 [A] 15 [B]	5_E [E]	0.04	0.04	0.03	0.166	0.013	0.011	0.011	0.019	0.012	0.014	<0.01	0.014	<0.01	<0.01	0.011	<0.01	0.01	<0.01	<0.01	<0.01
Vanadium	µg/L	n/v	6 [E]	0.6	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Yttrium	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	37_{EQ1} [A] 7.0_{EQ2} [B]	30 [C] 20 [E]	7	7	6	<1	4.9	7.7	7.8	17.5	9.4	10.2	1	2.5	2.2	2	<1	<1	<1	1.7	<1	<1
CCME Zinc Guideline (EQ1)				17.8	18.6	15.3	85.5	29.9	27.2	27.3	27.1	29.8	26.1	52.8	70	59.7	57.7	32.8	33.5	28.5	31.3	30.5	32.7
CCME Zinc Guideline (EQ2)				62.1	56.6	48.1	39.8	34.2	47.8	47.9	44.6	46.5	45.7	24	31	30.2	31	18.4	21.5	19.1	23.8	23.7	20.7
Zirconium	µg/L	n/v	4_a [E]	0.5	0.6	0.8	<0.3	<0.2	0.22	0.22	0.29	<0.3	<0.3	<0.2	<0.3	<0.3	<0.3	<0.2	<0.2	<0.3	<0.3	<0.3	<0.3

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Table
Summary of Surface Water Analytical Data - Lakes
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				MARLK (Continued)			MELLK	NDRP01							NDRP02			NDRP-02B	NDRP03						
Sample Date				31-Oct-23	21-Nov-23	5-Dec-23	16-Sep-22	8-Aug-21	24-Oct-21	24-Oct-21	29-May-22	30-Aug-22	13-Oct-22	5-Aug-21	31-May-22	13-Oct-22	31-Aug-22	5-Aug-21	20-Oct-21	2-Jun-22	30-Aug-22	30-Aug-22	13-Oct-22
Sample ID				MARLk	MARLk	MARLk	NDR-MelLk	NDR-P-01	NDR-P-01	CNC-DUP-02	NDR-P-01	NDR-P-01	NDR-P-01	NDR-P-02A	NDR-1-02	NDR-P-02	BDRP-02B	NDR-P-03	NDR-P-03	NDR-P-03	NDRP03	DUP01	NDR-P-03
Sampling Company				STANTEC	STANTEC	STANTEC	UNKNOWN	CNC	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	CNC	UNKNOWN	UNKNOWN	UNKNOWN	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				TESTMARK	TESTMARK	TESTMARK	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS
Laboratory Work Order				517852	519857	521073	WT2215061	L2625067	L2655497	L2655497	L2711537	WT2213093	WT2218393	L2623628	WT2204941	WT2218393	WT2213093	L2623628	L2657480	WT2205034	WT2213093	WT2213093	WT2218393
Laboratory Sample ID				1948016	1954955	1958860	WT2215061-002	L2625067-4	L2655497-6	L2655497-7	L2711537-2	WT2213093-012	WT2218393-003	L2623628-2	WT2204941-004	WT2218393-002	WT2213093-005	L2623628-3	L2657480-4	WT2205034-005	WT2213093-010	WT2213093-006	WT2218393-001
Sample Type	Units	CCME	PWQO							Field Duplicate												Field Duplicate	
Metals - Total																							
Aluminum	µg/L	$5/100_{VAR1}$ [B]	n/v	**235** [B]	**252** [B]	**318** [B]	3.8	87.2	**201** [B]	**198** [B]	**213** [B]	**166** [B]	**289** [B]	31	22.6	4.3	11.8	25.6	40.5	56.1	26.5	25.8	19.1
CWQG Aluminum Guideline				5	5	5	100	100	5	5	5	100	5	100	100	100	100	100	100	100	100	100	100
Antimony	µg/L	n/v	20^{E}	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	0.5	0.5	0.4	0.22	1.27	1.18	1.12	0.99	1.17	1.18	0.87	0.59	0.5	0.72	0.3	0.28	0.28	0.3	0.29	0.29
Barium	µg/L	n/v	n/v	4.5	4.1	4.1	13.9	6.99	3.31	3.24	5.56	9.01	5.96	3.77	2.47	2.07	4.18	1.67	2.94	19.9	2.41	2.34	2.83
Beryllium	µg/L	n/v	$11/1{,}100_{s3}$ [C]	<0.02	<0.02	<0.02	<0.02	<0.1	<0.1	<0.1	<0.1	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.1	<0.1	<0.02	<0.02	<0.02	<0.02
PWQO Beryllium Guideline				11	11	11	1100	11	11	11	11	11	11	1100	1100	1100	1100	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Boron	µg/L	$29{,}000^{A}$ $1{,}500^{B}$	200_{s} [E]	3	2	<2	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Cadmium	µg/L	1.0_{STB} [A] 0.09_{LTG} [B]	0.2^{C} $0.1/0.5_{s12}$ [E]	**0.05** [B]	0.04	0.04	<0.005	0.012	0.0183	0.016	0.0301	0.0185	0.0265	<0.005	0.0066	<0.005	<0.005	<0.005	0.005	0.0073	<0.005	<0.005	<0.005
CWQG Cadmium Guideline (STB)				0.42	0.45	0.35	2.87	0.8	0.71	0.71	0.71	0.79	0.68	1.59	2.25	1.85	1.78	0.89	0.92	0.75	0.84	0.82	0.89
CWQG Cadmium Guideline (LTG)				0.04	0.04	0.04	0.2	0.07	0.07	0.07	0.07	0.07	0.06	0.13	0.17	0.14	0.14	0.08	0.08	0.07	0.08	0.07	0.08
PWQO Cadmium Guideline				0.1	0.1	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	5,470	6,340	4,770	35,400	10,700	9,160	9,320	9,370	10,600	9,570	23,200	36,100	27,900	25,600	11,900	12,100	10,700	10,900	10,600	12,300
Cerium	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cesium	µg/L	n/v	n/v	0.02	0.02	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	µg/L	n/v	n/v	0.9	0.6	1.1	<0.5	<0.5	0.61	0.63	0.59	0.76	0.81	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	µg/L	n/v	0.9^{E}	<0.1	<0.1	0.3	<0.1	0.18	0.14	0.12	0.21	0.43	0.17	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Copper	µg/L	2_{TBC1} [B]	5^{C} $1/5_{s13}$ [E]	0.9	0.6	0.2	<0.5	<0.5	0.7	0.6	0.84	<0.5	0.72	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	<0.5	<0.5
CCME Copper Guideline				2	2	2	3.1	2	2	2	2	2	2	2	2.5	2.1	2.1	2	2	2	2	2	2
PWQO Copper Guideline				1	5	1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Europium	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gallium	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron	µg/L	300^{B}	300^{C}	**600** [BC]	**590** [BC]	**700** [BC]	<10	**397** [BC]	**631** [BC]	**629** [BC]	**430** [BC]	**777** [BC]	**733** [BC]	87	81	31	102	34	89	90	41	41	140
Lanthanum	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	µg/L	1_{TBC1} [B]	$5/10/20/25_{s14}$ [C] $1/3/5_{s15}$ [E]	0.72	0.53	0.53	<0.05	0.131	0.16	0.175	0.31	0.288	0.29	0.087	<0.05	<0.05	0.145	<0.05	0.099	0.126	<0.05	<0.05	<0.05
CCME Lead Guideline				1	1	1	4.7	1	1	1	1	1	1	2.3	3.5	2.7	2.6	1	1	1	1	1	1
PWQO Lead Guideline (s14)				5	5	5	25	10	5	10	10	5	5	20	25	25	25	20	20	10	10	10	20
PWQO Lead Guideline (s15)				1	1	1	5	3	3	3	3	3	3	3	5	5	5	3	3	3	3	3	3
Lithium	µg/L	n/v	n/v	<1	<1	<1	1.2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Magnesium	µg/L	n/v	n/v	1,530	1,690	1,300	11,800	2,870	2,790	2,740	2,150	2,830	2,240	4,480	4,640	4,900	5,340	3,250	3,390	2,820	3,110	2,990	2,940
Manganese	µg/L	$3{,}600_{EQ3}$ [A] 430_{EQ4} [B]	n/v	83.3	49.9	86.4	5.96	46.1	16	16	49	111	33.9	11.7	21.6	7.45	8.55	14.7	23.9	13	13.9	13.6	34
CCME Manganese Guideline (EQ3)				1970.8	1970.8	1970.8	8719.4	2879.2	2608.2	2614.9	2601.5	2872.7	2501.4	5249.3	7063.8	5973.5	5765.3	3179.2	3250.3	2740.9	3023.2	2944.8	3166.2
CCME Manganese Guideline (EQ4)				290	290	290	390	380	330	330	330	330	330	350	370	350	350	320	320	320	350	350	320
Mercury	µg/L	0.026^{B}	0.2^{C}	<0.01	<0.01	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury (Trace)	ng/L	n/v	n/v	3.37	3.06	2.84	<0.5	1.08	0.76	0.78	3.40	0.95	4.11	0.52	<0.5	0.62	<0.5	0.71	0.87	1.00	0.82	0.76	1.16
Methyl Mercury	ng/L	0.004^{B}	n/v	0.110	0.740	0.650	0.032	-	-	-	0.172	0.066	0.057	-	0.096	<0.02	<0.02	-	-	0.047	0.022	0.023	0.068
Molybdenum	µg/L	73^{B}	40^{E}	<0.05	<0.05	<0.05	0.088	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.077	0.281	0.062	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nickel	µg/L	25_{TBC1} [B]	25^{C}	0.5	<0.5	0.5	<0.5	0.53	0.56	<0.5	0.79	0.66	0.75	<0.5	<0.5	<0.5	<0.5	<0.5	0.52	1.11	<0.5	<0.5	<0.5
CCME Nickel Guideline				25	25	25	120.7	25	25	25	25	25	25	77.8	100.6	87	84.4	25	25	25	25	25	25
Niobium	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus	µg/L	n/v	30_{s4} [E]	-	-	-	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***
Potassium	µg/L	n/v	n/v	240	200	210	1,130	68	89	93	172	106	132	2,330	2,160	1,790	1,590	313	367	649	301	292	377
Rhodium	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rubidium	µg/L	n/v	n/v	1	0.8	1	1.95	0.38	0.55	0.5	0.29	0.47	0.26	2.4	1.75	1.45	1.42	0.58	0.65	0.78	0.56	0.54	0.71
Scandium	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	µg/L	1^{B}	100^{C}	0.13	0.08	<0.05	<0.05	0.147	0.147	0.161	0.151	0.155	0.159	<0.05	<0.05	<0.05	<0.05	0.068	0.057	<0.05	0.06	0.051	0.062
Silicon	µg/L	n/v	n/v	1,220	1,130	1,470	3,460	900	1,580	1,570	190	1,610	940	1,920	580	810	1,180	260	500	370	340	320	440
Silver	µg/L	0.25^{B}	0.1^{C}	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01
Sodium	µg/L	n/v	n/v	410	500	400	1,810	454	655	653	470	431	521	308	326	413	305	552	573	911	475	470	517
Strontium	µg/L	n/v	n/v	10.5	10.2	10	50.2	24	15.2	14.7	17.1	24.4	16.4	23.6	18.3	23.4	28.9	17.8	15.7	14.9	17.3	19.2	18.2
Sulfur	µg/L	n/v	n/v	1,300	<500	<500	1,610	<500	<500	<500	<500	<500	550	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
Tellurium	µg/L	n/v	n/v	<0.2	<0.2	<0.2	<0.2	0.21	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.32
Thallium	µg/L	0.8^{B}	0.3_{s} [E]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Thorium	µg/L	n/v	n/v	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tin	µg/L	n/v	n/v	0.2	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.31	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.16	<0.1	<0.1
Titanium	µg/L	n/v	n/v	7.5	7.9	11.4	<0.3	1.23	2.96	2.94	2.93	2.56	4.92	1.07	0.89	<0.3	0.53	<0.3	0.88	1.55	<0.3	<0.3	<0.3
Tungsten	µg/L	n/v	30_{s} [E]	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Uranium	µg/L	33^{A} 15^{B}	5_{s} [E]	0.04	0.05	0.03	0.184	0.013	0.012	0.012	0.017	0.012	0.016	<0.01	0.014	<0.01	<0.01	0.01	0.01	0.013	0.01	0.01	0.01
Vanadium	µg/L	n/v	6^{E}	0.8	0.6	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Yttrium	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	37_{EQ1} [A] 7.0_{EQ2} [B]	30^{C} 20^{E}	7	7	7	<3	4.2	7.7	7.5	**24.9** [E]	8.9	9.8	<3	<3	<3	3.6	<3	<3	11.2	<3	<3	<3
CCME Zinc Guideline (EQ1)				17.8	18.6	15.3	85.5	29.9	27.2	27.3	27.1	29.8	26.1	52.8	70	59.7	57.7	32.8	33.5	28.5	31.3	30.5	32.7
CCME Zinc Guideline (EQ2)				62.1	56.6	48.1	39.8	34.2	47.8	47.9	44.6	46.5	45.7	24	31	30.2	31	18.4	21.5	19.1	23.8	23.7	20.7
Zirconium	µg/L	n/v	4_{s} [E]	0.6	0.6	1.1	<0.2	<0.2	<0.2	<0.2	0.23	<0.2	0.24	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

See notes on last page

Table
Summary of Surface Water Analytical Data - Lakes
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				NDRP04					NDRP05		NDRP06		PRSLK				SUTHLK						
Sample Date				5-Aug-21	19-Oct-21	30-May-22	30-Aug-22	13-Oct-22	6-Jun-22	17-Sep-22	30-Aug-22	16-Oct-22	22-Feb-23	29-Jun-23	1-Sep-23	16-Nov-23	16-Sep-22	21-Oct-22	16-Feb-23	29-May-23	29-May-23	13-Jun-23	5-Jul-23
Sample ID				NDR-P-04	NDR-P-04	NDR-P-04	NDRP04	NDR-P-04	NDR-P-05	NDR-P-05	NDRP06	NDR-P-06	PRSLk	PRSLk	PRSLK	PRSLK	NDR-SutLk	NDR-SUFLK	SuthLK	SUTHLK-Bottom	SUTHLK-Top	NDR-SUTLK	SUTHLK
Sampling Company				CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	ALS	TESTMARK	TESTMARK	TESTMARK	ALS	TESTMARK
Laboratory Work Order				L2623628	L2657480	L2711537	WT2213093	WT2218393	WT2205411	WT2215061	WT2213095	WT2218393	492012	504499	511255	519511	WT2215061	WT2219907	491080	500662	500662	WT2317497	504954
Laboratory Sample ID				L2623628-1	L2657480-2	L2711537-6	WT2213093-009	WT2218393-005	WT2205411-004	WT2215061-005	WT2213095-009	WT2218393-007	1855427	1899326	1923365	1953845	WT2215061-003	WT2219907-007	1852150	1885912	1885911	WT2317497-004	1901004
Sample Type	Units	CCME	PWQO																				
Field Parameters																							
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	-	-	-	-	-	-	-	-	-	6.88	**6.18[BC]**	**4.35[BC]**	7.52	-	-	7.1	8.02	7.94	-	7.4
Temperature, Field	deg C	n/v	30_{wl}[C]	-	-	-	-	-	-	-	-	-	1.02	19.31	20.14	2.78	-	-	0	15.9	20.14	-	25.43
General Chemistry																							
Acidity as CaCO3	mg/L	n/v	n/v	6.3	8.2	4.3	<2.0	3.9	2.5	4.5	4.7	9.3	12	7	6	7	<2.0	<2.0	17	14	10	<2	7
Alkalinity, Total	mg/L	n/v	n/v	75.4	95.5	72.8	72.5	87.3	20.8	27.5	19.8	4.6	52	49	75	56	120	125	148	123	101	106	105
Ammonia (as N)	mg/L	$_{TBC2}$[B]	n/v	<0.010	0.022	0.014	0.0125	0.0108	0.0329	0.0295	0.0480	0.0183	0.055	0.059	0.046	0.05	0.0062	0.0347	0.07	0.013	0.009	0.0062	0.009
Bromide	mg/L	n/v	n/v	<0.10	<0.10	<0.10	-	-	<0.10	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-
Chloride	mg/L	640[A] 120[B]	n/v	<0.50	<0.50	0.51	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.3	0.2	0.5	0.5	<0.50	<0.50	0.5	0.5	0.3	<0.5	0.4
Chlorophyll a	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	1.66	-	-	-	-	-	-
Chrysotile Asbestos (>0.5 um)	MFL	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysotile Asbestos (>10 um)	MFL	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide	mg/L	0.0050[B]	n/v	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0029	0.0023	<0.0020	<0.0020	-	-	-	-	<0.0020	<0.0020	-	-	-	-	-
Cyanide (Free)	mg/L	0.0050[B]	0.0050[C]	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0022	0.0022	<0.0020	<0.0020	0.003	<0.001	0.003	<0.001	<0.0020	<0.0020	<0.001	0.003	0.002	<0.002	0.003
Cyanide (Strong Acid Dissociable)	mg/L	0.0050[B]	n/v	-	-	-	-	-	-	-	-	-	<0.002	0.004	0.003	0.004	-	-	<0.002	<0.002	<0.002	<0.002	<0.002
Cyanide (Weak Acid Dissociable)	mg/L	0.0050[B]	n/v	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0024	<0.0020	<0.0020	<0.0020	<0.001	0.005	0.002	0.003	<0.0020	<0.0020	<0.001	<0.001	<0.001	<0.002	0.003
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	39	21.1	18.5	30	-	-	8.4	8.7	7.9	-	7.7
Electrical Conductivity, Lab	µS/cm	n/v	n/v	150	169	122	142	165	46.9	61.2	46.2	28.3	103	96	153	107	218	236	256	223	184	199	213
Fluoride	mg/L	0.12[B]	n/v	0.027	0.026	0.029	0.028	0.023	<0.020	<0.020	<0.020	<0.020	<0.05	<0.05	<0.05	<0.05	0.036	0.030	<0.05	<0.05	<0.05	0.034	<0.05
Hardness (as CaCO3)	mg/L	n/v	n/v	80.4	89	68.2	74.5	85.6	35.4	40.4	31.3	19.6	55.2	35.1	72.4	60.7	112	119	115	100	89.7	110	105
Nitrate (as N)	mg/L	124[A] 3.0[B]	n/v	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.1	<0.1	<0.1	<0.1	<0.020	<0.020	0.1	0.7	<0.1	<0.02	<0.1
Nitrite (as N)	mg/L	0.060[B]	n/v	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.01	<0.01	0.03	0.04	<0.010	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	7.78	7.96	7.65	7.62	7.92	6.88	7.10	6.81	**5.77[BC]**	7.3	7.23	7.68	7.12	8.34	8.23	7.55	7.84	7.58	8.39	7.98
Phosphorus, Total	mg/L	n/v	0.020_{ol}[E]	0.0099	0.0106	0.0130	0.0050	0.0042	**0.0442[E]**	**0.0351[E]**	**0.115[E]**	**0.0742[E]**	**0.024[E]**	<0.002	0.015	**0.03[E]**	0.0078	0.0046	**0.022[E]**	0.005	<0.002	0.0086	**0.044[E]**
Radium-226	Bq/L	n/v	1[C]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.8	0.9	1.1	0.8	2.17	2.14	3.4	2.5	2.4	1.77	2.5
BC MECC Sulfate Guideline (s2)				309	309	218	218	309	218	218	218	128	218	218	218	218	309	309	309	309	309	309	309
Total Dissolved Solids	mg/L	n/v	n/v	99	97	77	75	100	93	117	87	84	120	100	105	110	104	123	200	140	115	98	90
Total Suspended Solids	mg/L	$_{SN}$[B]	n/v	<3.0	<3.0	<3.0	<3.0	<3.0	4.2	5.7	15.8	<3.0	<0.67	1.7	1.5	18.3	<3.0	<3.0	1.7	7	<0.67	<3	2

See notes on last page

Table
Summary of Surface Water Analytical Data - Lakes
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				NDRP04					NDRP05		NDRP06		PRSLK				SUTHLK						
Sample Date				5-Aug-21	19-Oct-21	30-May-22	30-Aug-22	13-Oct-22	6-Jun-22	17-Sep-22	30-Aug-22	16-Oct-22	22-Feb-23	29-Jun-23	1-Sep-23	16-Nov-23	16-Sep-22	21-Oct-22	16-Feb-23	29-May-23	29-May-23	13-Jun-23	5-Jul-23
Sample ID				NDR-P-04	NDR-P-04	NDR-P-04	NDRP04	NDR-P-04	NDR-P-05	NDR-P-05	NDRP06	NDR-P-06	PRSLk	PRSLk	PRSLK	PRSLK	NDR-SutLk	NDR-SUFLK	SuthLK	SUTHLK-Bottom	SUTHLK-Top	NDR-SUTLK	SUTHLK
Sampling Company				CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK
Laboratory Work Order				L2623628	L2657480	L2711537	WT2213093	WT2218393	WT2205411	WT2215061	WT2213095	WT2218393	492012	504499	511255	519511	WT2215061	WT2219907	491080	500662	500662	WT2317497	504954
Laboratory Sample ID				L2623628-1	L2657480-2	L2711537-6	WT2213093-009	WT2218393-005	WT2205411-004	WT2215061-005	WT2213095-009	WT2218393-007	1855427	1899326	1923365	1953845	WT2215061-003	WT2219907-007	1852150	1885912	1885911	WT2317497-004	1901004
Sample Type	Units	CCME	PWQO																				
Metals - Dissolved																							
Aluminum	µg/L	$5/100_{VAR1}$ [B]	n/v	3.4	2.3	12.9	4	4	**215** [B]	**147** [B]	95.9	**153** [B]	**206** [B]	12	67	**150** [B]	1.1	2.8	3	5	5	3.3	5
CWQG Aluminum Guideline				100	100	100	100	100	100	100	100	5	100	100	100	100	100	100	100	100	100	100	100
Aluminum (0.2u)	µg/L	n/v	75 [E]	-	-	-	-	-	-	-	-	-	-	-	61	-	-	-	-	2	4	-	10
Antimony	µg/L	n/v	20 [E]	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.5	-	0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.1	0.3
Arsenic	µg/L	5 [B]	100 [C] 5 [E]	0.29	0.27	0.34	0.28	0.27	1.19	1.23	0.92	0.66	<1	-	0.5	0.5	0.24	0.22	<1	<1	<1	0.23	0.2
Barium	µg/L	n/v	n/v	8.4	6.86	5.21	7.09	5.56	4.83	7.58	6.97	3.88	9	-	23.7	9.4	11.3	13	15	9	8	9.06	18.4
Beryllium	µg/L	n/v	$11/1,100_{s3}$ [C]	<0.1	<0.1	<0.1	<0.02	<0.02	<0.02	<0.2	<0.02	<0.02	<0.5	-	<0.02	<0.02	<0.02	<0.02	<0.5	<0.5	<0.5	<0.02	<0.02
PWQO Beryllium Guideline				1100	1100	11	11	1100	11	11	11	11	11	11	11	11	1100	1100	1100	1100	1100	1100	1100
Bismuth	µg/L	n/v	n/v	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	<1	-	0.06	<0.05	<0.05	<0.05	<1	<1	<1	<0.05	0.06
Boron	µg/L	$29,000_{A}$ $1,500_{B}$	200_{a} [E]	<10	<10	<10	<10	<10	<10	<100	<10	<10	<2	-	6	5	<10	<10	<2	5	4	<10	5
Cadmium	µg/L	1.0_{STB} [A] 0.09_{LTG} [B]	0.2 [C] $0.1/0.5_{s12}$ [E]	<0.005	<0.005	<0.005	<0.005	<0.005	0.0227	<0.05	0.0118	0.021	<0.1	-	0.01	0.02	<0.005	<0.005	<0.1	<0.1	<0.1	<0.005	0.007
CWQG Cadmium Guideline (STB)				1.68	1.86	1.42	1.56	1.79	0.73	0.84	0.64	0.4	1.15	0.72	1.51	1.26	2.36	2.5	2.42	2.1	1.88	2.31	2.21
CWQG Cadmium Guideline (LTG)				0.13	0.14	0.12	0.12	0.14	0.07	0.07	0.06	0.04	0.1	0.07	0.12	0.1	0.17	0.18	0.18	0.16	0.14	0.17	0.17
PWQO Cadmium Guideline				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.5	0.5	0.5	0.1	0.5	0.5
Calcium	µg/L	n/v	n/v	25,600	27,400	21,100	22,100	26,300	10,400	12,000	8,250	5,520	15,800	-	19,800	17,500	31,200	32,400	29,800	28,000	27,100	32,000	29,300
Cerium	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	-	<1	<1	-	-	<1	<1	<1	-	<1
Cesium	µg/L	n/v	n/v	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<1	-	<0.01	<0.01	<0.01	<0.01	<1	<1	<1	<0.01	<0.01
Chromium	µg/L	n/v	n/v	0.19	0.11	<0.5	<0.5	<0.5	0.62	<5	0.56	<0.5	2	-	1.1	1	<0.5	<0.5	4	<1	<1	<0.5	1.3
Cobalt	µg/L	n/v	0.9 [E]	<0.1	<0.1	<0.1	<0.1	<0.1	0.14	***<1***	<0.1	0.16	0.4	-	<0.1	<0.1	<0.1	<0.1	0.1	0.1	0.1	<0.1	<0.1
Copper	µg/L	2_{TBC1} [B]	5 [C] $1/5_{s13}$ [E]	<0.2	<0.2	0.25	<0.2	<0.2	1.27	<2	0.35	0.27	1	-	1.7	1.5	<0.2	<0.2	<1	<1	<1	<0.2	0.8
CCME Copper Guideline				2	2.1	2	2	2.1	2	2	2	2	2	2	2	2	2.6	2.7	2.7	2.4	2.2	2.6	2.5
PWQO Copper Guideline				5	5	5	5	5	5	5	5	1	5	5	5	5	5	5	5	5	5	5	5
Europium	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	-	<1	<1	-	-	<1	<1	<1	-	<1
Gallium	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	-	<1	<1	-	-	<1	<1	<1	-	<1
Iron	µg/L	300 [B]	300 [C]	31	27	81	50	48	**396** [BC]	**495** [BC]	**322** [BC]	**454** [BC]	**552** [BC]	-	290	**560** [BC]	<10	13	150	180	180	<10	190
Lanthanum	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	-	<1	<1	-	-	<1	<1	<1	-	<1
Lead	µg/L	1_{TBC1} [B]	$5/10/20/25_{s14}$ [C] $1/3/5_{s15}$ [E]	<0.05	<0.05	<0.05	<0.05	<0.05	0.159	<0.5	0.097	0.333	0.1	-	<0.05	0.14	<0.05	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05
CCME Lead Guideline				2.4	2.7	2	2.2	2.6	1	1	1	1	1	1	2.1	1.7	3.7	4	3.8	3.2	2.8	3.6	3.4
PWQO Lead Guideline (s14)				20	25	20	20	25	5	10	5	5	20	20	20	20	25	25	25	25	25	25	25
PWQO Lead Guideline (s15)				3	5	3	3	5	3	3	3	1	3	3	3	3	5	5	5	5	5	5	5
Lithium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<10	<1	<1	<5	-	<1	<1	<1	<1	<5	<5	<5	1.1	1
Magnesium	µg/L	n/v	n/v	4,690	5,180	3,730	4,690	4,840	2,280	2,540	2,600	1,420	3,770	-	5,180	4,250	8,240	9,220	8,180	6,370	5,920	7,320	7,520
Manganese	µg/L	$3,600_{EQ3}$ [A] 430_{EQ4} [B]	n/v	2.84	16.9	15.7	14.9	40.9	28.7	79.8	16.8	46.9	42	-	13.6	46.4	1.1	6.06	38	2	2	0.99	1.5
CCME Manganese Guideline (EQ3)				5496.1	6009.1	4756.7	5140.4	5807	2674.6	3003.6	2400.7	1970.8	3950.6	2654.7	5012.9	4294.2	7352.8	7754.8	7525.5	6656.4	6050.5	7237.4	6947.8
CCME Manganese Guideline (EQ4)				440	440	430	430	440	350	380	350	290	490	380	430	500	370	370	530	470	490	370	470
Mercury	µg/L	0.026 [B]	0.2 [C]	0.000028	0.000022	-	-	-	-	-	-	-	***<0.1***	-	***<0.1***	***<0.1***	-	-	***<0.1***	***<0.1***	***<0.1***	-	***<0.1***
Mercury (by CV)	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	<0.01	-	-	-	-	-	<0.01	<0.01	-	<0.01
Molybdenum	µg/L	73 [B]	40 [E]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	<1	-	0.2	0.13	<0.05	<0.05	<1	<1	<1	<0.05	0.08
Nickel	µg/L	25_{TBC1} [B]	25 [C]	<0.5	<0.5	<0.5	<0.5	<0.5	0.76	<5	<0.5	<0.5	<1	-	0.6	0.6	<0.5	<0.5	<1	<1	<1	<0.5	<0.5
CCME Nickel Guideline				81	87.5	71.5	76.4	84.9	25	25	25	25	25	25	74.8	65.4	104.2	109.1	106.3	95.6	88	102.8	99.2
Niobium	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	-	<1	<1	-	-	<1	<1	<1	-	<1
Phosphorus	µg/L	n/v	30_{s4} [E]	<30	<30	***<50***	***<50***	***<50***	***<50***	***<500***	***<50***	***<50***	***<50***	-	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***
Potassium	µg/L	n/v	n/v	567	807	734	504	735	110	<500	219	<50	370	-	550	460	758	906	980	800	700	739	810
Rhodium	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	-	<1	<1	-	-	<1	<1	<1	-	<1
Rubidium	µg/L	n/v	n/v	0.8	1.11	0.76	0.72	1.08	0.3	<2	0.67	<0.2	<1	-	1.3	1	1.34	1.49	2	1	1	1.23	1.3
Scandium	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	-	<1	1	-	-	1	<1	<1	-	<1
Selenium	µg/L	1 [B]	100 [C]	<0.05	<0.05	<0.05	<0.05	<0.05	0.213	<0.5	0.149	0.126	0.2	-	0.09	<0.05	0.053	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
Silicon	µg/L	n/v	n/v	1,080	1,780	1,080	1,280	1,910	66	2,030	2,040	749	2,000	-	1,720	2,310	1,970	2,590	3,200	1,400	1,300	1,350	1,740
Silver	µg/L	0.25 [B]	0.1 [C]	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.1	-	0.03	<0.01	<0.01	<0.01	0.1	<0.1	<0.1	<0.01	<0.01
Sodium	µg/L	n/v	n/v	548	563	571	520	555	716	<500	352	427	1,640	-	2,870	1,780	1,230	1,440	1,310	1,100	1,000	1,120	1,200
Strontium	µg/L	n/v	n/v	30.4	33.2	21.9	30.9	31.8	21.4	26	18.6	10.3	29	-	46.9	32.8	39.9	41.9	43	27	25	36.4	32.2
Sulfur	µg/L	n/v	n/v	<500	<500	<500	<500	<500	<500	<5,000	670	<500	860	-	<500	<500	810	940	1,300	4,000	3,900	590	2,000
Tellurium	µg/L	n/v	n/v	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<1	-	<0.2	<0.2	<0.2	<0.2	<1	<1	<1	<0.2	<0.2
Thallium	µg/L	0.8 [B]	0.3_{b} [E]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.1	-	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.01	<0.01
Thorium	µg/L	n/v	n/v	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<1	-	<0.1	<0.1	<0.1	<0.1	<1	<1	<1	<0.1	<0.1
Tin	µg/L	n/v	n/v	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<1	-	0.2	0.2	<0.1	0.12	<1	22	2	<0.1	0.3
Titanium	µg/L	n/v	n/v	<0.3	<0.3	0.36	<0.3	<0.3	2.68	<3	1.93	2.76	4	-	1.5	3.7	<0.3	<0.3	<1	<1	<1	<0.3	0.5
Tungsten	µg/L	n/v	30_{E} [E]	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<1	-	<0.1	<0.1	<0.1	<0.1	<1	<1	<1	<0.1	<0.1
Uranium	µg/L	33 [A] 15 [B]	5_{E} [E]	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.1	0.018	0.013	<1	-	0.06	0.08	0.063	0.084	<1	<1	<1	0.07	0.06
Vanadium	µg/L	n/v	6 [E]	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<1	-	0.6	0.6	<0.5	<0.5	1	<1	<1	<0.5	0.5
Yttrium	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	-	<1	<1	-	-	<1	<1	<1	-	<1
Zinc	µg/L	37_{EQ1} [A] 7.0_{EQ2} [B]	30 [C] 20 [E]	<1	<1	3.9	2.1	<1	12.3	<10	17.6	10.1	4	-	4	4	<1	<1	3	3	2	<1	3
CCME Zinc Guideline (EQ1)				55.2	60	48.1	51.8	58.1	27.9	31.1	25.1	17	40.3	27.7	50.6	43.7	72.7	76.5	74.3	66.2	60.4	71.6	68.9
CCME Zinc Guideline (EQ2)				37.9	36	36.1	40.2	35.9	36.3	34.4	34.2	51.2	51	27.5	36	58.2	32.9	38.1	45.3	31.7	34.1	31	28.2
Zirconium	µg/L	n/v	4_{a} [E]	<0.2	<0.2	<0.2	<0.3	<0.3	0.4	<3	<0.3	<0.3	1	-	0.8	0.8	<0.3	<0.3	<1	<1	<1	<0.3	<0.2

See notes on last page

Table
Summary of Surface Water Analytical Data - Lakes
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				NDRP04					NDRP05		NDRP06		PRSLK				SUTHLK						
Sample Date				5-Aug-21	19-Oct-21	30-May-22	30-Aug-22	13-Oct-22	6-Jun-22	17-Sep-22	30-Aug-22	16-Oct-22	22-Feb-23	29-Jun-23	1-Sep-23	16-Nov-23	16-Sep-22	21-Oct-22	16-Feb-23	29-May-23	29-May-23	13-Jun-23	5-Jul-23
Sample ID				NDR-P-04	NDR-P-04	NDR-P-04	NDRP04	NDR-P-04	NDR-P-05	NDR-P-05	NDRP06	NDR-P-06	PRSLk	PRSLk	PRSLK	PRSLK	NDR-SutLk	NDR-SUFLK	SuthLK	SUTHLK-Bottom	SUTHLK-Top	NDR-SUTLK	SUTHLK
Sampling Company				CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	ALS	TESTMARK	TESTMARK	TESTMARK	ALS	TESTMARK
Laboratory Work Order				L2623628	L2657480	L2711537	WT2213093	WT2218393	WT2205411	WT2215061	WT2213095	WT2218393	492012	504499	511255	519511	WT2215061	WT2219907	491080	500662	500662	WT2317497	504954
Laboratory Sample ID				L2623628-1	L2657480-2	L2711537-6	WT2213093-009	WT2218393-005	WT2205411-004	WT2215061-005	WT2213095-009	WT2218393-007	1855427	1899326	1923365	1953845	WT2215061-003	WT2219907-007	1852150	1885912	1885911	WT2317497-004	1901004
Sample Type	Units	CCME	PWQO																				
Metals - Total																							
Aluminum	µg/L	$5/100_{VAR1}$ [B]	n/v	15.6	7.4	20.7	15.6	37.4	**315** [B]	**212** [B]	**118** [B]	**166** [B]	**221** [B]	**130** [B]	81	**204** [B]	11.6	8.1	12	10	8	9	37
CWQG Aluminum Guideline				100	100	100	100	100	100	100	100	5	100	100	100	100	100	100	100	100	100	100	100
Antimony	µg/L	n/v	20^{E}	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.1	0.4
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	0.3	0.3	0.33	0.31	0.27	1.15	1.33	0.97	0.7	<1	0.4	0.5	0.5	0.25	0.24	<1	<1	<1	0.23	0.2
Barium	µg/L	n/v	n/v	8.08	7.46	5.13	7.77	5.76	6.42	8.49	9.04	3.93	9	8.1	11.9	9.5	12.7	13.7	14	8	8	9.3	9.8
Beryllium	µg/L	n/v	$11/1{,}100_{s3}$ [C]	<0.1	<0.1	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.5	<0.5	<0.5	<0.02	<0.02
PWQO Beryllium Guideline				1100	1100	11	11	1100	11	11	11	11	11	11	11	11	1100	1100	1100	1100	1100	1100	1100
Bismuth	µg/L	n/v	n/v	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<1	<1	<0.05	0.07
Boron	µg/L	$29{,}000^{A}$ $1{,}500^{B}$	200_{s} [E]	<10	<10	<10	<10	<10	<10	<10	<10	<10	<2	4	6	5	<10	<10	<2	4	4	<10	5
Cadmium	µg/L	1.0_{STB} [A] 0.09_{LTG} [B]	0.2^{C} $0.1/0.5_{s12}$ [E]	<0.005	<0.005	<0.005	<0.005	<0.005	0.029	0.011	0.0177	0.0222	0.03	0.02	0.01	0.03	<0.005	<0.005	<0.02	<0.02	<0.02	<0.005	0.005
CWQG Cadmium Guideline (STB)				1.68	1.86	1.42	1.56	1.79	0.73	0.84	0.64	0.4	1.15	0.72	1.51	1.26	2.36	2.5	2.42	2.1	1.88	2.31	2.21
CWQG Cadmium Guideline (LTG)				0.13	0.14	0.12	0.12	0.14	0.07	0.07	0.06	0.04	0.1	0.07	0.12	0.1	0.17	0.18	0.18	0.16	0.14	0.17	0.17
PWQO Cadmium Guideline				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.5	0.5	0.1	0.1	0.5	0.5
Calcium	µg/L	n/v	n/v	24,600	27,100	19,000	22,200	25,600	9,920	11,400	8,400	5,490	15,900	14,800	19,400	16,900	31,200	36,200	32,300	29,400	26,500	29,000	28,800
Cerium	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	<1	<1	<1	-	-	<1	<1	<1	-	<1
Cesium	µg/L	n/v	n/v	<0.01	<0.01	<0.01	<0.01	<0.01	0.013	<0.01	<0.01	<0.01	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<1	<1	<1	<0.01	<0.01
Chromium	µg/L	n/v	n/v	<0.5	<0.5	<0.5	<0.5	<0.5	0.92	0.84	<0.5	0.52	<1	2	0.7	0.7	<0.5	<0.5	<1	<1	<1	<0.5	0.4
Cobalt	µg/L	n/v	0.9^{E}	<0.1	<0.1	<0.1	<0.1	0.11	0.25	0.48	0.36	0.18	0.3	<0.1	<0.1	0.1	<0.1	<0.1	0.1	0.1	0.1	<0.1	<0.1
Copper	µg/L	2_{TBC1} [B]	5^{C} $1/5_{s13}$ [E]	<0.5	<0.5	<0.5	<0.5	<0.5	1.91	0.56	<0.5	<0.5	2	**4.1** [B]	1.1	1.7	<0.5	<0.5	1	<1	<1	<0.5	2.3
CCME Copper Guideline				2	2.1	2	2	2.1	2	2	2	2	2	2	2	2	2.6	2.7	2.7	2.4	2.2	2.6	2.5
PWQO Copper Guideline				5	5	5	5	5	5	5	5	1	5	5	5	5	5	5	5	5	5	5	5
Europium	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	<1	<1	<1	-	-	<1	<1	<1	-	<1
Gallium	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	<1	<1	<1	-	-	<1	<1	<1	-	<1
Iron	µg/L	300^{B}	300^{C}	65	68	88	87	163	**544** [BC]	**842** [BC]	**505** [BC]	**510** [BC]	**571** [BC]	**350** [BC]	**320** [BC]	**590** [BC]	16	20	160	190	170	17	210
Lanthanum	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	<1	<1	<1	-	-	<1	<1	<1	-	<1
Lead	µg/L	1_{TBC1} [B]	$5/10/20/25_{s14}$ [C] $1/3/5_{s15}$ [E]	0.067	<0.05	<0.05	0.195	<0.05	0.338	0.193	0.281	0.367	0.2	0.09	0.07	0.24	<0.05	<0.05	<0.1	0.1	<0.1	<0.05	0.1
CCME Lead Guideline				2.4	2.7	2	2.2	2.6	1	1	1	1	1	1	2.1	1.7	3.7	4	3.8	3.2	2.8	3.6	3.4
PWQO Lead Guideline (s14)				20	25	20	20	25	5	10	5	5	20	20	20	20	25	25	25	25	25	25	25
PWQO Lead Guideline (s15)				3	5	3	3	5	3	3	3	1	3	3	3	3	5	5	5	5	5	5	5
Lithium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<5	<5	<5	<1	1
Magnesium	µg/L	n/v	n/v	4,600	5,160	3,780	4,740	4,930	2,470	3,110	2,720	1,510	3,860	3,540	5,080	4,220	8,940	8,770	7,900	6,290	5,860	7,300	7,700
Manganese	µg/L	$3{,}600_{EQ3}$ [A] 430_{EQ4} [B]	n/v	13.5	43.3	10.9	21.3	62	42.9	176	114	49.6	44	15.8	18.4	49.2	12.4	47.2	52	13	8	11.7	18.9
CCME Manganese Guideline (EQ3)				5496.1	6009.1	4756.7	5140.4	5807	2674.6	3003.6	2400.7	1970.8	3950.6	2654.7	5012.9	4294.2	7352.8	7754.8	7525.5	6656.4	6050.5	7237.4	6947.8
CCME Manganese Guideline (EQ4)				440	440	430	430	440	350	380	350	290	490	380	430	500	370	370	530	470	490	370	470
Mercury	µg/L	0.026^{B}	0.2^{C}	-	-	-	-	-	-	-	-	-	***<0.1***	-	<0.01	<0.01	-	-	***<0.1***	-	-	-	-
Mercury (Trace)	ng/L	n/v	n/v	<0.50	<0.50	1.48	0.66	0.73	9.88	1.95	<0.5	2.60	7.53	4.78	2.98	4.66	0.55	0.81	0.58	2.31	1.09	<0.5	0.85
Methyl Mercury	ng/L	0.004^{B}	n/v	-	-	0.054	<0.02	0.025	0.413	0.112	0.045	0.052	-	0.070	0.130	1.200	0.028	0.031	-	0.250	0.060	-	0.060
Molybdenum	µg/L	73^{B}	40^{E}	<0.05	<0.05	<0.05	<0.05	<0.05	0.066	<0.05	<0.05	<0.05	<1	<0.05	0.18	0.08	<0.05	<0.05	<1	<1	<1	<0.05	0.08
Nickel	µg/L	25_{TBC1} [B]	25^{C}	<0.5	0.51	<0.5	<0.5	<0.5	1.08	0.82	0.51	0.5	<1	0.6	<0.5	0.5	<0.5	<0.5	<1	<1	<1	<0.5	<0.5
CCME Nickel Guideline				81	87.5	71.5	76.4	84.9	25	25	25	25	25	25	74.8	65.4	104.2	109.1	106.3	95.6	88	102.8	99.2
Niobium	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	<1	<1	<1	-	-	<1	<1	<1	-	<1
Phosphorus	µg/L	n/v	30_{s4} [E]	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	**55** [E]	***<50***	-	-	-	-	***<50***	***<50***	-	-	-	***<50***	-
Potassium	µg/L	n/v	n/v	550	823	783	497	784	262	162	221	<50	370	420	540	480	824	973	950	800	700	771	850
Rhodium	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	<1	<1	<1	-	-	<1	<1	<1	-	<1
Rubidium	µg/L	n/v	n/v	0.78	1.07	0.85	0.81	1.07	0.62	0.64	0.79	<0.2	<1	0.9	1.2	1.1	1.36	1.6	2	1	1	1.18	1.3
Scandium	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	1	<1	1	-	-	1	<1	<1	-	<1
Selenium	µg/L	1^{B}	100^{C}	<0.05	<0.05	<0.05	<0.05	<0.05	0.196	0.204	0.132	0.103	<0.2	0.16	0.08	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	0.05
Silicon	µg/L	n/v	n/v	1,140	1,740	1,060	1,300	2,060	340	2,550	2,100	810	2,100	1,710	1,690	2,280	2,130	2,690	2,900	1,500	1,300	1,520	1,690
Silver	µg/L	0.25^{B}	0.1^{C}	<0.05	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	0.07	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.01	<0.01
Sodium	µg/L	n/v	n/v	574	624	606	525	569	926	672	339	441	1,680	1,810	2,850	1,770	1,720	1,420	1,280	1,100	900	1,180	1,270
Strontium	µg/L	n/v	n/v	31	32.8	21.5	29.6	32.1	21.4	29.2	19.4	10.2	30	30	45.7	32.6	42.6	44.1	42	27	24	35.6	32.6
Sulfur	µg/L	n/v	n/v	<500	<500	<500	<500	<500	<500	<500	<500	<500	930	1,600	<500	<500	950	970	1,300	4,000	4,100	820	2,000
Tellurium	µg/L	n/v	n/v	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<1	<1	<0.2	<0.2
Thallium	µg/L	0.8^{B}	0.3_{p} [E]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.01	<0.01
Thorium	µg/L	n/v	n/v	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<1	<0.1	<0.1
Tin	µg/L	n/v	n/v	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	0.3	0.1	0.3	0.14	<0.1	<1	24	9	<0.1	0.4
Titanium	µg/L	n/v	n/v	0.49	<0.3	0.63	0.58	1.41	7.55	4.23	2.74	3.29	5	2.9	2	5	0.38	<0.3	<1	<1	<1	<0.3	1.4
Tungsten	µg/L	n/v	30_{E} [E]	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<1	<0.1	<0.1
Uranium	µg/L	33^{A} 15^{B}	5_{E} [E]	<0.01	<0.01	<0.01	<0.01	<0.01	0.025	0.018	0.021	0.016	<1	0.07	0.07	0.08	0.07	0.089	<1	<1	<1	0.074	0.06
Vanadium	µg/L	n/v	6^{E}	<0.5	<0.5	<0.5	<0.5	<0.5	0.72	0.52	<0.5	<0.5	<1	0.5	<0.5	0.6	<0.5	<0.5	<1	<1	<1	<0.5	<0.5
Yttrium	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	<1	<1	<1	-	-	<1	<1	<1	-	<1
Zinc	µg/L	37_{EQ1} [A] 7.0_{EQ2} [B]	30^{C} 20^{E}	<3	<3	7.1	3.1	<3	**33.7** [CE]	8.6	10.1	9.4	5	13	2	5	7.1	<3	4	4	<1	<3	9
CCME Zinc Guideline (EQ1)				55.2	60	48.1	51.8	58.1	27.9	31.1	25.1	17	40.3	27.7	50.6	43.7	72.7	76.5	74.3	66.2	60.4	71.6	68.9
CCME Zinc Guideline (EQ2)				37.9	36	36.1	40.2	35.9	36.3	34.4	34.2	51.2	51	27.5	36	58.2	32.9	38.1	45.3	31.7	34.1	31	28.2
Zirconium	µg/L	n/v	4_{s} [E]	<0.2	<0.2	<0.2	<0.2	<0.2	0.38	0.3	0.29	<0.2	1	0.7	0.8	1	<0.2	<0.2	<1	<1	<1	<0.2	<0.2

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Table
Summary of Surface Water Analytical Data - Lakes
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				SUTHLK (Continued)		
Sample Date				14-Jul-23	3-Oct-23	3-Oct-23
Sample ID				NDR-SUTLK	SUTHLK - Bottom	SUTHLK - Top
Sampling Company				UNKNOWN	STANTEC	STANTEC
Laboratory				ALS	TESTMARK	TESTMARK
Laboratory Work Order				WT2322070	515655	515655
Laboratory Sample ID				WT2322070-003	1939879	1939878
Sample Type	Units	CCME	PWQO			
Field Parameters						
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	-	**5.38[BC]**	**5.38[BC]**
Temperature, Field	deg C	n/v	$30_{\Delta 6}$[C]	-	18.61	18.61
General Chemistry						
Acidity as CaCO3	mg/L	n/v	n/v	<2	13	9
Alkalinity, Total	mg/L	n/v	n/v	111	161	128
Ammonia (as N)	mg/L	TBC2[B]	n/v	0.005	<0.005	<0.005
Bromide	mg/L	n/v	n/v	<0.1	-	-
Chloride	mg/L	640[A] 120[B]	n/v	<0.5	0.6	0.5
Chlorophyll a	µg/L	n/v	n/v	-	-	-
Chrysotile Asbestos (>0.5 um)	MFL	n/v	n/v	-	-	-
Chrysotile Asbestos (>10 um)	MFL	n/v	n/v	-	-	-
Cyanide	mg/L	0.0050[B]	n/v	-	-	-
Cyanide (Free)	mg/L	0.0050[B]	0.0050[C]	<0.002	0.003	0.005
Cyanide (Strong Acid Dissociable)	mg/L	0.0050[B]	n/v	<0.002	0.003	0.003
Cyanide (Weak Acid Dissociable)	mg/L	0.0050[B]	n/v	<0.002	0.003	<0.001
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	-	5.9	6.5
Electrical Conductivity, Lab	µS/cm	n/v	n/v	213	299	231
Fluoride	mg/L	0.12[B]	n/v	0.035	<0.05	<0.05
Hardness (as CaCO3)	mg/L	n/v	n/v	112	138	109
Nitrate (as N)	mg/L	124[A] 3.0[B]	n/v	<0.02	<0.1	<0.1
Nitrite (as N)	mg/L	0.060[B]	n/v	<0.01	<0.01	<0.01
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	8.26	7.5	7.89
Phosphorus, Total	mg/L	n/v	$0.020_{\Delta 4}$[E]	0.005	**0.029[E]**	0.012
Radium-226	Bq/L	n/v	1[C]	-	-	-
Sulfate	mg/L	n/v	n/v	1.83	3.6	2.9
BC MECC Sulfate Guideline (s2)				309	309	309
Total Dissolved Solids	mg/L	n/v	n/v	104	135	110
Total Suspended Solids	mg/L	$_{SN}$[B]	n/v	<3	3.7	<0.67

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Table
Summary of Surface Water Analytical Data - Lakes
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				SUTHLK (Continued)		
Sample Date				14-Jul-23	3-Oct-23	3-Oct-23
Sample ID				NDR-SUTLK	SUTHLK - Bottom	SUTHLK - Top
Sampling Company				UNKNOWN	STANTEC	STANTEC
Laboratory				ALS	TESTMARK	TESTMARK
Laboratory Work Order				WT2322070	515655	515655
Laboratory Sample ID				WT2322070-003	1939879	1939878
Sample Type	Units	CCME	PWQO			
Metals - Dissolved						
Aluminum	µg/L	$5/100_{VAR1}$ [B]	n/v	2.6	<1	<1
CWQG Aluminum Guideline				100	100	100
Aluminum (0.2u)	µg/L	n/v	75 [E]	-	-	-
Antimony	µg/L	n/v	20 [E]	<0.1	<0.1	<0.1
Arsenic	µg/L	5 [B]	100 [C] 5 [E]	0.24	0.2	0.1
Barium	µg/L	n/v	n/v	9.97	15.6	11
Beryllium	µg/L	n/v	$11/1,100_{s3}$ [C]	<0.02	<0.02	<0.02
PWQO Beryllium Guideline				1100	1100	1100
Bismuth	µg/L	n/v	n/v	<0.05	<0.05	<0.05
Boron	µg/L	$29,000$ [A] $1,500$ [B]	200_a [E]	<10	5	5
Cadmium	µg/L	1.0_{STB} [A] 0.09_{LTG} [B]	0.2 [C] $0.1/0.5_{s12}$ [E]	<0.005	<0.005	<0.005
CWQG Cadmium Guideline (STB)				2.36	2.91	2.29
CWQG Cadmium Guideline (LTG)				0.17	0.21	0.17
PWQO Cadmium Guideline				0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	31,400	40,100	30,900
Cerium	µg/L	n/v	n/v	-	<1	<1
Cesium	µg/L	n/v	n/v	<0.01	<0.01	<0.01
Chromium	µg/L	n/v	n/v	<0.5	1	2
Cobalt	µg/L	n/v	0.9 [E]	<0.1	<0.1	<0.1
Copper	µg/L	2_{TBC1} [B]	5 [C] $1/5_{s13}$ [E]	<0.2	0.9	1.1
CCME Copper Guideline				2.6	3.1	2.5
PWQO Copper Guideline				5	5	5
Europium	µg/L	n/v	n/v	-	<1	<1
Gallium	µg/L	n/v	n/v	-	<1	<1
Iron	µg/L	300 [B]	300 [C]	<10	230	180
Lanthanum	µg/L	n/v	n/v	-	<1	<1
Lead	µg/L	1_{TBC1} [B]	$5/10/20/25_{s14}$ [C] $1/3/5_{s15}$ [E]	<0.05	<0.05	<0.05
CCME Lead Guideline				3.7	4.8	3.6
PWQO Lead Guideline (s14)				25	25	25
PWQO Lead Guideline (s15)				5	5	5
Lithium	µg/L	n/v	n/v	1.3	2	2
Magnesium	µg/L	n/v	n/v	8,170	9,630	8,260
Manganese	µg/L	$3,600_{EQ3}$ [A] 430_{EQ4} [B]	n/v	0.82	306	1.2
CCME Manganese Guideline (EQ3)				7352.8	8831.9	7179.6
CCME Manganese Guideline (EQ4)				370	570	470
Mercury	µg/L	0.026 [B]	0.2 [C]	-	-	-
Mercury (by CV)	µg/L	n/v	n/v	-	-	-
Molybdenum	µg/L	73 [B]	40 [E]	<0.05	0.15	<0.05
Nickel	µg/L	25_{TBC1} [B]	25 [C]	<0.5	<0.5	<0.5
CCME Nickel Guideline				104.2	122.1	102
Niobium	µg/L	n/v	n/v	-	<1	<1
Phosphorus	µg/L	n/v	30_{s4} [E]	***<50***	***<50***	***<50***
Potassium	µg/L	n/v	n/v	827	1,030	860
Rhodium	µg/L	n/v	n/v	-	<1	<1
Rubidium	µg/L	n/v	n/v	1.44	1.7	1.5
Scandium	µg/L	n/v	n/v	-	3	1
Selenium	µg/L	1 [B]	100 [C]	0.051	<0.05	<0.05
Silicon	µg/L	n/v	n/v	1,340	4,580	2,040
Silver	µg/L	0.25 [B]	0.1 [C]	<0.01	<0.01	<0.01
Sodium	µg/L	n/v	n/v	1,540	1,530	1,360
Strontium	µg/L	n/v	n/v	39.8	41.3	36.6
Sulfur	µg/L	n/v	n/v	880	1,500	1,600
Tellurium	µg/L	n/v	n/v	<0.2	<0.2	<0.2
Thallium	µg/L	0.8 [B]	0.3_a [E]	<0.01	<0.01	<0.01
Thorium	µg/L	n/v	n/v	<0.1	<0.1	<0.1
Tin	µg/L	n/v	n/v	<0.1	<0.1	0.1
Titanium	µg/L	n/v	n/v	<0.3	1.6	0.6
Tungsten	µg/L	n/v	30_a [E]	<0.1	<0.1	<0.1
Uranium	µg/L	33 [A] 15 [B]	5_a [E]	0.075	0.08	0.07
Vanadium	µg/L	n/v	6 [E]	<0.5	<0.5	<0.5
Yttrium	µg/L	n/v	n/v	-	<1	<1
Zinc	µg/L	37_{EQ1} [A] 7.0_{EQ2} [B]	30 [C] 20 [E]	<1	3	2
CCME Zinc Guideline (EQ1)				72.7	86.5	71.1
CCME Zinc Guideline (EQ2)				35.1	48.7	29.4
Zirconium	µg/L	n/v	4_a [E]	<0.3	<0.2	<0.2

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Table
Summary of Surface Water Analytical Data - Lakes
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				SUTHLK (Continued)		
Sample Date				14-Jul-23	3-Oct-23	3-Oct-23
Sample ID				NDR-SUTLK	SUTHLK - Bottom	SUTHLK - Top
Sampling Company				UNKNOWN	STANTEC	STANTEC
Laboratory				ALS	TESTMARK	TESTMARK
Laboratory Work Order				WT2322070	515655	515655
Laboratory Sample ID				WT2322070-003	1939879	1939878
Sample Type	Units	CCME	PWQO			
Metals - Total						
Aluminum	µg/L	$5/100_{VAR1}$ [B]	n/v	20.6	6	8
CWQG Aluminum Guideline				100	100	100
Antimony	µg/L	n/v	20 [E]	<0.1	<0.1	<0.1
Arsenic	µg/L	5 [B]	100 [C] 5 [E]	0.24	0.2	0.2
Barium	µg/L	n/v	n/v	10.2	15.8	11
Beryllium	µg/L	n/v	$11/1,100_{s3}$ [C]	<0.02	<0.02	<0.02
PWQO Beryllium Guideline				1100	1100	1100
Bismuth	µg/L	n/v	n/v	<0.05	<0.05	<0.05
Boron	µg/L	$29,000$ [A] $1,500$ [B]	200_a [E]	<10	5	5
Cadmium	µg/L	1.0_{STB} [A] 0.09_{LTG} [B]	0.2 [C] $0.1/0.5_{s12}$ [E]	<0.005	<0.005	<0.005
CWQG Cadmium Guideline (STB)				2.36	2.91	2.29
CWQG Cadmium Guideline (LTG)				0.17	0.21	0.17
PWQO Cadmium Guideline				0.5	0.5	0.5
Calcium	µg/L	n/v	n/v	32,100	40,400	30,300
Cerium	µg/L	n/v	n/v	-	<1	<1
Cesium	µg/L	n/v	n/v	<0.01	<0.01	<0.01
Chromium	µg/L	n/v	n/v	<0.5	0.5	2
Cobalt	µg/L	n/v	0.9 [E]	<0.1	<0.1	<0.1
Copper	µg/L	2_{TBC1} [B]	5 [C] $1/5_{s13}$ [E]	<0.5	0.2	0.7
CCME Copper Guideline				2.6	3.1	2.5
PWQO Copper Guideline				5	5	5
Europium	µg/L	n/v	n/v	-	<1	<1
Gallium	µg/L	n/v	n/v	-	<1	<1
Iron	µg/L	300 [B]	300 [C]	25	230	170
Lanthanum	µg/L	n/v	n/v	-	<1	<1
Lead	µg/L	1_{TBC1} [B]	$5/10/20/25_{s14}$ [C] $1/3/5_{s15}$ [E]	<0.05	0.06	0.11
CCME Lead Guideline				3.7	4.8	3.6
PWQO Lead Guideline (s14)				25	25	25
PWQO Lead Guideline (s15)				5	5	5
Lithium	µg/L	n/v	n/v	1.1	2	2
Magnesium	µg/L	n/v	n/v	8,080	9,640	8,210
Manganese	µg/L	$3,600_{EQ3}$ [A] 430_{EQ4} [B]	n/v	10.9	342	7.7
CCME Manganese Guideline (EQ3)				7352.8	8831.9	7179.6
CCME Manganese Guideline (EQ4)				370	570	470
Mercury	µg/L	0.026 [B]	0.2 [C]	-	**0.12** [B]	<0.01
Mercury (Trace)	ng/L	n/v	n/v	0.78	565	0.3
Methyl Mercury	ng/L	0.004 [B]	n/v	0.040	0.350	0.030
Molybdenum	µg/L	73 [B]	40 [E]	0.054	<0.05	<0.05
Nickel	µg/L	25_{TBC1} [B]	25 [C]	<0.5	<0.5	<0.5
CCME Nickel Guideline				104.2	122.1	102
Niobium	µg/L	n/v	n/v	-	<1	<1
Phosphorus	µg/L	n/v	30_{s4} [E]	***<50***	-	-
Potassium	µg/L	n/v	n/v	820	1,030	830
Rhodium	µg/L	n/v	n/v	-	<1	<1
Rubidium	µg/L	n/v	n/v	1.44	1.7	1.5
Scandium	µg/L	n/v	n/v	-	3	1
Selenium	µg/L	1 [B]	100 [C]	<0.05	0.12	<0.05
Silicon	µg/L	n/v	n/v	1,410	4,300	1,860
Silver	µg/L	0.25 [B]	0.1 [C]	<0.01	<0.01	<0.01
Sodium	µg/L	n/v	n/v	1,250	1,530	1,340
Strontium	µg/L	n/v	n/v	40.8	41.1	35.5
Sulfur	µg/L	n/v	n/v	900	2,000	1,400
Tellurium	µg/L	n/v	n/v	<0.2	<0.2	<0.2
Thallium	µg/L	0.8 [B]	0.3_{s5} [E]	<0.01	<0.01	<0.01
Thorium	µg/L	n/v	n/v	<0.1	<0.1	<0.1
Tin	µg/L	n/v	n/v	<0.1	0.1	<0.1
Titanium	µg/L	n/v	n/v	<0.9	1.8	0.9
Tungsten	µg/L	n/v	30_a [E]	<0.1	<0.1	<0.1
Uranium	µg/L	33 [A] 15 [B]	5_a [E]	0.082	0.07	0.07
Vanadium	µg/L	n/v	6 [E]	<0.5	<0.5	<0.5
Yttrium	µg/L	n/v	n/v	-	<1	<1
Zinc	µg/L	37_{EQ1} [A] 7.0_{EQ2} [B]	30 [C] 20 [E]	<3	3	1
CCME Zinc Guideline (EQ1)				72.7	86.5	71.1
CCME Zinc Guideline (EQ2)				35.1	48.7	29.4
Zirconium	µg/L	n/v	4_a [E]	<0.2	<0.2	<0.2

See notes on last page

Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					BS-SW-01						JCRK-01							JCRK-02					
Sample Date					27-Mar-23	19-Apr-23	25-May-23	22-Jun-23	31-Jul-23	26-Aug-23	30-May-23	20-Jun-23	19-Jul-23	14-Aug-23	21-Sep-23	16-Oct-23	14-Nov-23	23-Feb-23	19-Apr-23	24-May-23	7-Jun-23	7-Jun-23	4-Jul-23
Sample ID					SW-BS-01	BS-SW-01	BS-SW-01	BS-SW-01	BS-SW-01	BS-SW-01	JCRK-01	JCRK-01	JCRK-01	JCRK-01	JCRK-01	JCRK-01	JCRK-01	JCRK-02	JCRK-02	JCRK-02	JCRK-02	SWDup	JCRK-02
Sampling Company					UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory					TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK
Laboratory Work Order					494524	496342	500390	503673	507838	510587	501084	503549	506589	509147	513650	516043	519511	492012	496973	500390	502041	502041	504663
Laboratory Sample ID					1864167	1870249	1884837	1896405	1911308	1920989	1887387	1896031	1906650	1916181	1931820	1941585	1953843	1855431	1872511	1884828	1890729	1890731	1899888
Sample Type	Units	CCME	PWQO	BC MECC																		Field Duplicate	
Field Parameters																							
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	**4.41**[BC]	**5.21**[BC]	-	**5.02**[BC]	**3.72**[BC]	**3.46**[BC]	7.49	7.59	**5.89**[BC]	**6.29**[BC]	**5.1**[BC]	**4.66**[BC]	7.59	**5.9**[BC]	**6.09**[BC]	-	6.97	-	**5.44**[BC]
Temperature, Field	deg C	n/v	30_{s6}[C]	n/v	0.88	0.27	7.75	19.23	15.62	15.17	20.2	23.02	21.47	21.05	15.23	8.52	2.72	0	1.41	10.63	15.9	-	20.78
General Chemistry																							
Acidity as CaCO3	mg/L	n/v	n/v	n/v	-	8	14	27	21	29	17	11	7	<5	<5	12	<5	14	6	10	7	7	8
Alkalinity, Total	mg/L	n/v	n/v	n/v	12	3	5	14	13	8	40	53	79	59	46	44	41	20	8	14	20	21	25
Ammonia (as N)	mg/L	[B] TBC2	n/v	n/v	0.308	0.025	0.05	0.06	0.069	0.076	0.028	0.02	0.03	0.03	0.018	0.037	0.023	0.141	0.035	0.044	0.051	0.05	0.062
Bromide	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640[A] 120[B]	n/v	n/v	0.5	<0.2	<0.2	0.6	0.3	0.4	4.1	2.3	3.1	2.7	1.7	3.1	2.1	0.4	3	3.4	0.3	<0.2	5.1
Chrysotile Asbestos (>0.5 um)	MFL	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysotile Asbestos (>10 um)	MFL	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide	mg/L	0.0050[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide (Free)	mg/L	0.0050[B]	0.0050[C]	n/v	0.003	0.001	0.005	<0.001	0.003	0.003	0.004	<0.001	0.002	0.003	0.003	<0.001	<0.001	0.004	0.003	0.004	0.002	<0.001	0.001
Cyanide (Strong Acid Dissociable)	mg/L	0.0050[B]	n/v	n/v	0.002	0.005	<0.002	<0.002	0.005	<0.002	0.002	0.005	<0.002	<0.002	<0.002	<0.002	**0.006**[B]	<0.002	0.004	<0.002	0.003	<0.002	0.005
Cyanide (Weak Acid Dissociable)	mg/L	0.0050[B]	n/v	n/v	0.005	0.002	0.002	0.004	**0.007**[B]	0.004	0.002	0.003	**0.006**[B]	**0.007**[B]	**0.009**[B]	<0.001	0.003	0.002	0.003	0.001	0.002	<0.001	0.002
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	44.1	21	29.8	38.8	41	48.5	19.3	12	13.2	10.3	15.7	30.5	13.9	30.1	22	25.7	31.2	31.1	38.5
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	40	16	23	35	39	37	120	116	133	132	109	92	96	48	35	43	41	42	70
Fluoride	mg/L	0.12[B]	n/v	n/v	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	<0.05
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	19.5	6.3	11.9	19.8	22.2	20.9	49.5	53.2	60.4	60.5	51.1	46.6	46.3	24.6	14	17.2	29.2	29.2	30.8
Nitrate (as N)	mg/L	124[A] 3.0[B]	n/v	n/v	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1
Nitrite (as N)	mg/L	0.060[B]	n/v	n/v	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.05	0.02	<0.01	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	**5.55**[BC]	**4.99**[BC]	**5.29**[BC]	**5.64**[BC]	**5.63**[BC]	**5.32**[BC]	6.78	7.28	7.33	7.64	7.53	7.08	7.37	**6.44**[BC]	**6.26**[BC]	**6.17**[BC]	6.68	6.76	6.69
Phosphorus, Total	mg/L	n/v	0.030_{s4}[E]	n/v	**0.052**[E]	0.016	0.012	0.025	0.022	0.02	0.013	0.01	0.016	0.017	**0.033**[E]	0.019	0.008	**0.046**[E]	0.02	0.009	0.025	0.027	0.022
Radium-226	Bq/L	n/v	1[C]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	128-429[F] $_{s2}$	<0.5	<0.5	<0.5	<0.5		<0.5	14.8	3.7	3.7	3.4	2.9	4.3	3.9	2.5	<0.5	0.7	<0.5	<0.5	<0.5
BC MECC Sulfate Guideline (s2)					128	128	128	128	128	128	218	218	218	218	218	218	218	128	128	128	128	128	128
Total Dissolved Solids	mg/L	n/v	n/v	n/v	135	50	75	80	110	80	125	80	35	90	70	85	75	100	55	75	85	100	120
Total Suspended Solids	mg/L	[B] SN	n/v	n/v	5	2.7	2	8.5	5.3	2.3	7.33	4.3	3.7	5	5	5	5	7.5	2.5	2	8.67	8	5.7

See notes on last page

Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					BS-SW-01						JCRK-01							JCRK-02					
Sample Date					27-Mar-23	19-Apr-23	25-May-23	22-Jun-23	31-Jul-23	26-Aug-23	30-May-23	20-Jun-23	19-Jul-23	14-Aug-23	21-Sep-23	16-Oct-23	14-Nov-23	23-Feb-23	19-Apr-23	24-May-23	7-Jun-23	7-Jun-23	4-Jul-23
Sample ID					SW-BS-01	BS-SW-01	BS-SW-01	BS-SW-01	BS-SW-01	BS-SW-01	JCRK-01	JCRK-01	JCRK-01	JCRK-01	JCRK-01	JCRK-01	JCRK-01	JCRK-02	JCRK-02	JCRK-02	JCRK-02	SWDup	JCRK-02
Sampling Company					UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory					TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK
Laboratory Work Order					494524	496342	500390	503673	507838	510587	501084	503549	506589	509147	513650	516043	519511	492012	496973	500390	502041	502041	504663
Laboratory Sample ID					1864167	1870249	1884837	1896405	1911308	1920989	1887387	1896031	1906650	1916181	1931820	1941585	1953843	1855431	1872511	1884828	1890729	1890731	1899888
Sample Type	Units	CCME	PWQO	BC MECC																		Field Duplicate	
Metals - Dissolved																							
Aluminum	µg/L	$5/100_{VAR1}$ [B]	n/v	n/v	**93** [B]	**32** [B]	**66** [B]	**107** [B]	**100** [B]	**140** [B]	77	63	38	25	42	**121** [B]	43	**211** [B]	**129** [B]	**168** [B]	**262** [B]	**248** [B]	**212** [B]
CWQG Aluminum Guideline					5	5	5	5	5	5	100	100	100	100	100	100	100	5	5	5	100	100	100
Aluminum (0.2u)	µg/L	n/v	75^{E}	n/v	**88** [E]	33	**84** [E]	**100** [E]	-	**128** [E]	68	41	26	15	-	-	-	-	**101** [E]	**144** [E]	**180** [E]	**181** [E]	-
Antimony	µg/L	n/v	20^{E}	n/v	<0.5	<0.5	<0.5	0.2	<0.1	<0.1	0.1	0.1	0.1	0.3	0.5	<0.1	<0.1	<0.5	<0.5	<0.5	0.1	<0.1	-
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	<1	<1	<1	0.7	0.8	0.7	0.6	0.5	0.8	0.9	0.5	0.6	0.4	<1	<1	<1	1.1	1.1	-
Barium	µg/L	n/v	n/v	n/v	4	13	2	13.8	8.5	11.2	5.5	15.6	17	15.8	5	5.7	4.7	4	4	4	4	5	-
Beryllium	µg/L	n/v	$11/1,100_{83}$ [C]	n/v	<0.5	<0.5	<0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.5	<0.5	<0.5	0.02	0.02	-
PWQO Beryllium Guideline					11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	n/v	<1	<1	<1	0.16	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<1	<1	<1	<0.05	<0.05	-
Boron	µg/L	$29,000^{A}$ $1,500^{B}$	200_{a} [E]	n/v	<2	<2	<2	<2	<2	<2	5	9	11	7	8	7	6	<2	<2	<2	5	5	-
Cadmium	µg/L	1.0_{STB} [A] 0.09_{LTG} [B]	0.2^{C} $0.1/0.5_{s12}$ [E]	n/v	**<0.1**	**<0.1**	**<0.1**	0.03	0.02	0.03	0.06	0.02	0.01	0.01	0.01	0.04	0.01	**<0.1**	**<0.1**	**<0.1**	0.06	**0.07** [B]	-
CWQG Cadmium Guideline (STB)					0.4	0.13	0.24	0.4	0.45	0.43	1.03	1.11	1.26	1.26	1.06	0.97	0.96	0.5	0.28	0.35	0.6	0.6	0.63
CWQG Cadmium Guideline (LTG)					0.04	0.04	0.04	0.04	0.05	0.04	0.09	0.09	0.1	0.1	0.09	0.08	0.08	0.05	0.04	0.04	0.06	0.06	0.06
PWQO Cadmium Guideline					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	n/v	5,430	1,830	2,840	4,900	5,610	5,900	14,100	15,700	17,000	17,000	15,400	14,300	13,200	7,270	4,320	4,920	8,000	8,370	-
Cerium	µg/L	n/v	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-
Cesium	µg/L	n/v	n/v	n/v	<1	<1	<1	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<1	<1	<1	<0.01	<0.01	-
Chromium	µg/L	n/v	n/v	n/v	2	<1	<1	1.4	1	1	0.3	0.8	1.2	1.1	1.1	1.1	0.5	2	<1	<1	1	1.1	-
Cobalt	µg/L	n/v	0.9^{E}	n/v	0.3	<0.1	0.1	0.2	0.3	0.3	<0.1	0.2	0.1	<0.1	<0.1	<0.1	<0.1	0.3	0.1	0.1	0.4	0.4	-
Copper	µg/L	2_{TBC1} [B]	5^{C} $1/5_{s13}$ [E]	n/v	<1	**2** [E]	**2** [E]	**1.9** [E]	**3.1** [B]	**1.5** [E]	**2.8** [B]	1.8	1.5	2	1.3	**2.8** [B]	1.7	2	**3** [BE]	**3** [BE]	**2.4** [B]	**2.1** [B]	-
CCME Copper Guideline					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline					1	1	1	1	5	1	5	5	5	5	5	5	5	5	1	1	5	5	5
Europium	µg/L	n/v	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-
Gallium	µg/L	n/v	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-
Iron	µg/L	300^{B}	300^{C}	n/v	**625** [BC]	120	220	**650** [BC]	**480** [BC]	**800** [BC]	260	280	240	130	180	**430** [BC]	180	**660** [BC]	230	300	**530** [BC]	**530** [BC]	-
Lanthanum	µg/L	n/v	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-
Lead	µg/L	1_{TBC1} [B]	$5/10/20/25_{s14}$ [C] $1/3/5_{s15}$ [E]	n/v	0.3	0.2	0.4	0.39	0.3	0.43	0.16	0.09	0.05	0.07	<0.05	0.1	<0.05	0.4	0.3	0.3	0.33	0.32	-
CCME Lead Guideline					1	1	1	1	1	1	1	1	1.7	1.7	1	1	1	1	1	1	1	1	1
PWQO Lead Guideline (s14)					5	5	5	5	5	5	10	20	20	20	20	20	20	5	5	5	5	10	10
PWQO Lead Guideline (s15)					1	1	1	1	1	1	3	3	3	3	3	3	3	1	1	1	1	1	1
Lithium	µg/L	n/v	n/v	n/v	<5	<5	<5	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<5	<5	<5	1	1	-
Magnesium	µg/L	n/v	n/v	n/v	1,360	529	722	1,370	1,400	1,520	2,980	3,100	3,690	3,720	3,520	3,430	3,170	1,730	864	947	1,970	1,960	-
Manganese	µg/L	$3,600_{EQ3}$ [A] 430_{EQ4} [B]	n/v	n/v	80	17	29	49.3	56.2	73.9	12.7	3.9	3.1	6	10.9	17.8	9.4	21	28	19	67.5	68.8	-
CCME Manganese Guideline (EQ3)					1970.8	1970.8	1970.8	1970.8	1970.8	1970.8	3590.1	3824.7	4275.6	4281.8	3691.8	3404.7	3385.5	1970.8	1970.8	1970.8	2258.6	2258.6	2367
CCME Manganese Guideline (EQ4)					290	290	290	290	290	290	350	490	490	430	430	380	380	310	290	290	330	350	330
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	-
Mercury (by CV)	µg/L	n/v	n/v	n/v	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01
Molybdenum	µg/L	73^{B}	40^{E}	n/v	<1	<1	<1	0.33	<0.05	<0.05	1.37	0.2	0.36	3.63	<0.05	0.07	0.1	<1	<1	<1	2	0.23	-
Nickel	µg/L	25_{TBC1} [B]	25^{C}	n/v	<1	<1	<1	2.3	0.6	0.8	<0.5	1.4	0.8	0.7	0.6	0.9	<0.5	<1	<1	<1	1	0.9	-
CCME Nickel Guideline					25	25	25	25	25	25	25	25	65.2	65.2	25	25	25	25	25	25	25	25	25
Niobium	µg/L	n/v	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-
Phosphorus	µg/L	n/v	30_{s4} [E]	n/v	***<50***	***<50***	***<50***	**50** [E]	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	-
Potassium	µg/L	n/v	n/v	n/v	330	150	<100	970	50	<50	400	580	480	450	410	410	350	300	300	200	330	330	-
Rhodium	µg/L	n/v	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-
Rubidium	µg/L	n/v	n/v	n/v	1	<1	<1	4.8	<0.2	<0.2	0.8	1.2	1.2	1.2	1	1	0.9	1	<1	<1	1.1	1	-
Scandium	µg/L	n/v	n/v	n/v	1	<1	<1	<1	<1	<1	<1	1	2	<1	1	2	1	<1	<1	<1	<1	<1	-
Selenium	µg/L	1^{B}	100^{C}	n/v	<0.5	<0.2	<0.5	0.1	<0.05	<0.05	0.15	0.09	0.13	**1.31** [B]	<0.05	<0.05	<0.05	<0.2	<0.2	<0.5	<0.05	<0.05	-
Silicon	µg/L	n/v	n/v	n/v	2,500	760	<600	1,130	1,710	540	1,090	2,730	3,040	1,770	2,950	2,180	2,330	2,500	1,000	<600	910	900	-
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	<0.1	<0.1	<0.1	0.01	<0.01	0.02	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	0.01	0.01	-
Sodium	µg/L	n/v	n/v	n/v	440	270	300	370	50	400	3,280	2,190	2,740	2,480	2,030	2,510	2,060	900	3,600	2,000	840	810	-
Strontium	µg/L	n/v	n/v	n/v	11	3	5	10.5	9.9	11.9	26	20.8	24.2	24.5	21.9	22.6	19.5	14	9	10	14.9	15.2	-
Sulfur	µg/L	n/v	n/v	n/v	<800	<800	<800	<500	<500	900	1,500	4,200	3,300	900	4,100	1,900	1,600	<800	1,000	<800	<500	1,000	-
Tellurium	µg/L	n/v	n/v	n/v	<1	<1	<1	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<1	<1	<0.2	<0.2	-
Thallium	µg/L	0.8^{B}	0.3_{b} [E]	n/v	<0.1	<0.1	<0.1	0.03	<0.01	<0.01	0.09	<0.01	<0.01	0.01	0.02	<0.01	<0.01	<0.1	<0.1	<0.1	0.09	<0.01	-
Thorium	µg/L	n/v	n/v	n/v	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<1	0.2	0.2	-
Tin	µg/L	n/v	n/v	n/v	<1	<1	<1	0.6	0.2	0.5	1.7	0.3	0.2	0.4	0.2	0.2	0.2	<1	<1	<1	<0.1	<0.1	-
Titanium	µg/L	n/v	n/v	n/v	2	<1	1	3.4	3	3.5	2	2	1.8	1	1.8	3.1	1.3	9	4	4	8.1	7.9	-
Tungsten	µg/L	n/v	30_{a} [E]	n/v	<1	<1	<1	0.2	<0.1	<0.1	<0.1	<0.1	0.1	0.2	<0.1	<0.1	<0.1	<1	<1	<1	<0.1	<0.1	-
Uranium	µg/L	33^{A} 15^{B}	5_{a} [E]	n/v	<1	<1	<1	0.02	<0.01	<0.01	0.05	0.07	0.07	0.06	0.05	0.05	0.06	<1	<1	<1	0.05	0.05	-
Vanadium	µg/L	n/v	6^{E}	n/v	<1	<1	<1	0.6	<0.5	<0.5	<0.5	0.5	0.7	0.6	0.6	0.6	<0.5	<1	<1	<1	1.1	1.1	-
Yttrium	µg/L	n/v	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-
Zinc	µg/L	37_{EQ1} [A] 7.0_{EQ2} [B]	30^{C} 20^{E}	n/v	**20** [A]	5	8	13	6	13	9	4	3	4	2	7	3	7	8	9	7	7	-
CCME Zinc Guideline (EQ1)					17	12.7	12.7	17.2	18.9	18	36.8	39.1	43.5	43.5	37.8	35	34.8	20.6	12.9	15.3	23.7	23.7	24.8
CCME Zinc Guideline (EQ2)					83.2	33.5	55.1	74.6	85.7	111.4	53.1	31.3	35.2	24.8	27.4	47.1	27.1	43.1	25.9	36	42.3	39.6	48
Zirconium	µg/L	n/v	4_{a} [E]	n/v	<1	<1	<1	0.6	0.6	0.7	0.7	0.5	0.9	0.5	0.8	0.8	0.4	2	<1	<1	1.6	1.6	-

See notes on last page

Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location					BS-SW-01						JCRK-01							JCRK-02					
Sample Date					27-Mar-23	19-Apr-23	25-May-23	22-Jun-23	31-Jul-23	26-Aug-23	30-May-23	20-Jun-23	19-Jul-23	14-Aug-23	21-Sep-23	16-Oct-23	14-Nov-23	23-Feb-23	19-Apr-23	24-May-23	7-Jun-23	7-Jun-23	4-Jul-23
Sample ID					SW-BS-01	BS-SW-01	BS-SW-01	BS-SW-01	BS-SW-01	BS-SW-01	JCRK-01	JCRK-01	JCRK-01	JCRK-01	JCRK-01	JCRK-01	JCRK-01	JCRK-02	JCRK-02	JCRK-02	JCRK-02	SWDup	JCRK-02
Sampling Company					UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory					TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK
Laboratory Work Order					494524	496342	500390	503673	507838	510587	501084	503549	506589	509147	513650	516043	519511	492012	496973	500390	502041	502041	504663
Laboratory Sample ID					1864167	1870249	1884837	1896405	1911308	1920989	1887387	1896031	1906650	1916181	1931820	1941585	1953843	1855431	1872511	1884828	1890729	1890731	1899888
Sample Type	Units	CCME	PWQO	BC MECC																		Field Duplicate	
Metals - Total																							
Aluminum	µg/L	$5/100_{VAR1}$ [B]	n/v	n/v	**131** [B]	**40** [B]	**99** [B]	**147** [B]	**119** [B]	**153** [B]	**292** [B]	**190** [B]	**139** [B]	**112** [B]	**145** [B]	**217** [B]	100	**1,020** [B]	**248** [B]	**331** [B]	**410** [B]	**598** [B]	**612** [B]
CWQG Aluminum Guideline					5	5	5	5	5	5	100	100	100	100	100	100	100	5	5	5	100	100	100
Antimony	µg/L	n/v	20^{E}	n/v	<0.5	<0.5	<0.5	0.2	<0.1	0.5	0.1	<0.1	<0.1	0.2	1.2	<0.1	<0.1	<0.5	<0.5	<0.5	0.2	<0.1	<0.1
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	<1	<1	<1	0.7	0.8	0.7	0.6	0.6	0.7	0.9	0.5	0.6	0.4	<1	<1	<1	1	1.1	1.2
Barium	µg/L	n/v	n/v	n/v	5	1	2	4.9	3.7	4.3	6.6	7.1	7.6	6.4	5.9	6.6	5	12	4	4	6.3	7.3	7.3
Beryllium	µg/L	n/v	$11/1,100_{s3}$ [C]	n/v	<0.5	<0.5	<0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.5	<0.5	<0.5	0.02	0.03	0.03
Beryllium	µg/L	n/v	$11/1,100_{s3}$ [C]	n/v	<0.5	<0.5	<0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.5	<0.5	<0.5	0.02	0.03	0.03
PWQO Beryllium Guideline					11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	n/v	<1	<1	<1	0.08	<0.05	<0.05	<0.05	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<1	<1	0.07	<0.05	<0.05
Boron	µg/L	$29,000^{A}$ $1,500^{B}$	200_{a} [E]	n/v	<2	<2	<2	<2	<2	<2	5	8	10	8	7	7	6	<2	<2	<2	5	4	3
Cadmium	µg/L	1.0_{STB} [A] 0.09_{LTG} [B]	0.2^{C} $0.1/0.5_{s12}$ [E]	n/v	0.03	**0.06** [B]	0.02	0.03	0.02	0.03	0.07	0.03	0.01	0.01	0.02	0.05	0.01	0.04	0.04	**0.05** [B]	**0.08** [B]	**0.07** [B]	0.06
CWQG Cadmium Guideline (STB)					0.4	0.13	0.24	0.4	0.45	0.43	1.03	1.11	1.26	1.26	1.06	0.97	0.96	0.5	0.28	0.35	0.6	0.6	0.63
CWQG Cadmium Guideline (LTG)					0.04	0.04	0.04	0.04	0.05	0.04	0.09	0.09	0.1	0.1	0.09	0.08	0.08	0.05	0.04	0.04	0.06	0.06	0.06
PWQO Cadmium Guideline					0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	n/v	5,480	1,970	3,110	5,170	5,750	5,620	14,400	15,600	17,100	16,600	14,400	14,300	13,000	6,910	4,090	4,920	8,350	8,210	9,030
Cerium	µg/L	n/v	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	1	1	1
Cesium	µg/L	n/v	n/v	n/v	<1	<1	<1	0.04	<0.01	<0.01	0.03	0.02	0.01	0.01	0.01	0.01	<0.01	<1	<1	<1	0.03	0.04	0.04
Chromium	µg/L	n/v	n/v	n/v	<1	<1	<1	1	0.6	1.2	0.5	1.2	0.8	0.5	1.1	1.1	0.5	3	<1	1	1.2	1.4	1.8
Cobalt	µg/L	n/v	0.9^{E}	n/v	0.3	<0.1	0.1	0.3	0.3	0.4	0.2	0.1	0.1	0.1	0.1	<0.1	<0.1	0.6	0.1	0.2	0.5	0.5	0.4
Copper	µg/L	2_{TBC1} [B]	5^{C} $1/5_{s13}$ [E]	n/v	<1	<1	<1	1	1	0.6	**2.5** [B]	**2.1** [B]	2	1.7	0.9	**2.1** [B]	1.1	2	**2** [E]	**27** [BCE]	**5.1** [BCE]	**4.1** [B]	**6.1** [BCE]
CCME Copper Guideline					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline					1	1	1	1	5	1	5	5	5	5	5	5	5	5	1	1	5	5	5
Europium	µg/L	n/v	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Gallium	µg/L	n/v	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Iron	µg/L	300^{B}	300^{C}	n/v	**650** [BC]	130	260	**800** [BC]	**500** [BC]	**900** [BC]	**500** [BC]	**490** [BC]	**370** [BC]	260	300	**570** [BC]	270	**1,500** [BC]	**320** [BC]	**430** [BC]	**700** [BC]	**800** [BC]	**800** [BC]
Lanthanum	µg/L	n/v	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Lead	µg/L	1_{TBC1} [B]	$5/10/20/25_{s14}$ [C] $1/3/5_{s15}$ [E]	n/v	0.3	0.3	0.4	0.44	0.33	0.6	0.27	0.32	0.15	0.16	0.12	0.25	0.11	0.8	0.3	0.4	0.52	0.57	0.57
CCME Lead Guideline					1	1	1	1	1	1	1	1	1.7	1.7	1	1	1	1	1	1	1	1	1
PWQO Lead Guideline (s14)					5	5	5	5	5	5	10	20	20	20	20	20	20	5	5	5	5	10	10
PWQO Lead Guideline (s15)					1	1	1	1	1	1	3	3	3	3	3	3	3	1	1	1	1	1	1
Lithium	µg/L	n/v	n/v	n/v	<5	<5	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<5	<5	1	2	1
Magnesium	µg/L	n/v	n/v	n/v	1,340	559	775	1,460	1,420	1,550	3,110	3,160	3,670	3,800	3,400	3,490	3,190	1,870	870	990	2,040	2,060	2,050
Manganese	µg/L	$3,600_{EQ3}$ [A] 430_{EQ4} [B]	n/v	n/v	81	18	32	61.4	58.4	74.8	23.2	13.6	24.3	29.7	24.6	26.6	14	39	30	21	74.5	75.1	76.5
CCME Manganese Guideline (EQ3)					1970.8	1970.8	1970.8	1970.8	1970.8	1970.8	3590.1	3824.7	4275.6	4281.8	3691.8	3404.7	3385.5	1970.8	1970.8	1970.8	2258.6	2258.6	2367
CCME Manganese Guideline (EQ4)					290	290	290	290	290	290	350	490	490	430	430	380	380	310	290	290	330	350	330
Mercury	µg/L	0.026^{B}	0.2^{C}	n/v	***<0.1***	***<0.1***	-	-	-	-	-	-	-	-	<0.01	<0.01	<0.01	***<0.1***	***<0.1***	-	-	-	-
Mercury (Trace)	ng/L	n/v	n/v	n/v	2.34	3.98	3.89	2.12	1.65	2.12	4.65	2.1	2.25	1.43	3.03	4.7	2.18	5.54	6.94	6.09	4.09	3.58	5.89
Mercury (by CV)	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl Mercury	ng/L	4^{B}	n/v	n/v	-	-	0.15	0.19	<0.02	0.03	0.16	0.14	0.13	0.12	0.12	0.11	0.13	-	-	0.13	0.21	0.20	0.20
Molybdenum	µg/L	73^{B}	40^{E}	n/v	<1	<1	<1	0.2	0.05	<0.05	1.48	0.15	0.18	2.65	<0.05	0.07	0.09	<1	<1	<1	0.86	0.13	<0.05
Nickel	µg/L	25_{TBC1} [B]	25^{C}	n/v	<1	<1	<1	2.9	<0.5	0.9	<0.5	1.3	<0.5	<0.5	0.5	0.9	<0.5	2	<1	<1	0.6	1.1	1.4
CCME Nickel Guideline					25	25	25	25	25	25	25	25	65.2	65.2	25	25	25	25	25	25	25	25	25
Niobium	µg/L	n/v	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Phosphorus	µg/L	n/v	30_{s4} [E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Potassium	µg/L	n/v	n/v	n/v	360	200	<100	1,170	<50	<50	460	650	480	450	420	440	360	500	300	200	380	410	310
Rhodium	µg/L	n/v	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Rubidium	µg/L	n/v	n/v	n/v	1	<1	<1	5.7	<0.2	<0.2	1.2	1.3	1.4	1.4	1.1	1.1	0.9	3	<1	<1	1.4	1.7	1.5
Scandium	µg/L	n/v	n/v	n/v	1	<1	<1	<1	<1	<1	1	1	2	1	1	2	1	2	<1	<1	<1	<1	2
Selenium	µg/L	1^{B}	100^{C}	n/v	<0.5	<0.2	<0.5	0.1	<0.05	<0.05	0.25	0.1	0.16	**1.08** [B]	0.15	0.17	<0.05	<0.2	<0.2	<0.5	<0.05	<0.05	0.05
Silicon	µg/L	n/v	n/v	n/v	2,400	840	<600	1,150	1,510	630	1,460	2,500	2,940	1,880	2,970	2,350	2,360	3,800	1,300	700	1,190	1,560	2,950
Silver	µg/L	0.25^{B}	0.1^{C}	n/v	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01	0.08	<0.01	<0.01	<0.01	0.03	<0.01	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01
Sodium	µg/L	n/v	n/v	n/v	460	310	300	410	60	370	3,380	2,100	2,700	2,440	1,850	2,490	2,120	1,070	3,400	2,100	940	840	5,130
Strontium	µg/L	n/v	n/v	n/v	11	4	6	10.8	9.8	11.2	27.2	20	24.5	24.8	21.6	22.6	19.2	16	8	11	15.5	15.2	19
Sulfur	µg/L	n/v	n/v	n/v	<800	<800	<800	<500	<500	800	2,000	2,500	3,000	900	3,300	2,000	1,400	<800	800	<800	<500	<500	1,200
Tellurium	µg/L	n/v	n/v	n/v	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<1	<1	<0.2	<0.2	<0.2
Thallium	µg/L	0.8^{B}	0.3_{b} [E]	n/v	<0.1	<0.1	<0.1	0.04	<0.01	<0.01	0.07	<0.01	<0.01	0.01	0.05	<0.01	<0.01	<0.1	<0.1	<0.1	0.06	0.01	<0.01
Thorium	µg/L	n/v	n/v	n/v	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<1	0.1	0.1	0.2
Tin	µg/L	n/v	n/v	n/v	<1	<1	<1	0.9	0.2	0.4	1.8	0.5	<0.1	0.4	0.4	0.2	0.3	<1	<1	<1	<0.1	<0.1	0.2
Titanium	µg/L	n/v	n/v	n/v	4	1	3	4.9	3.9	4.2	10.1	8.7	5.3	4.1	5.5	6.1	2.9	42	8	10	13.2	20.5	21.5
Tungsten	µg/L	n/v	30_{E} [E]	n/v	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<1	<0.1	<0.1	<0.1
Uranium	µg/L	33^{A} 15^{B}	5_{a} [E]	n/v	<1	<1	<1	0.02	0.01	<0.01	0.06	0.07	0.07	0.07	0.05	0.05	0.06	<1	<1	<1	0.05	0.05	0.07
Vanadium	µg/L	n/v	6^{E}	n/v	<1	<1	<1	<0.5	<0.5	<0.5	0.7	0.8	0.7	<0.5	0.6	0.7	<0.5	2	<1	<1	1.4	1.6	1.6
Yttrium	µg/L	n/v	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Zinc	µg/L	37_{EQ1} [A] 7.0_{EQ2} [B]	30^{C} 20^{E}	n/v	**19** [A]	4	7	9	8	16	11	8	3	4	2	9	4	10	8	7	8	8	10
CCME Zinc Guideline (EQ1)					17	12.7	12.7	17.2	18.9	18	36.8	39.1	43.5	43.5	37.8	35	34.8	20.6	12.9	15.3	23.7	23.7	24.8
CCME Zinc Guideline (EQ2)					83.2	33.5	55.1	74.6	85.7	111.4	53.1	31.3	35.2	24.8	27.4	47.1	27.1	43.1	25.9	36	42.3	39.6	48
Zirconium	µg/L	n/v	4_{a} [E]	n/v	<1	<1	<1	0.5	0.6	0.7	1	0.9	1	0.9	1	1	0.5	2	<1	1	1.6	1.8	2.3

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Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				JCRK-02 (Continued)					JCRK-03										JC-S-01				
Sample Date				8-Aug-23	11-Sep-23	30-Oct-23	21-Nov-23	6-Dec-23	27-Feb-23	22-Mar-23	17-Apr-23	29-May-23	13-Jun-23	5-Jul-23	8-Aug-23	8-Aug-23	26-Sep-23	18-Oct-23	29-May-22	30-Aug-22	18-Oct-22	27-Feb-23	22-Mar-23
Sample ID				JCRK-02	JCRK-02	JCRK-02	JCRK-02	JCRK-02	JCRK-03	JCRK-03	JCRK-03	JCRK-03	JCRK-03	JCRK-03	JCRK-03	SWDup	CNC	JCRK-03	JC-S-01	JCS01	JC-S-01	JC-S-01	JC-S-01
Sampling Company				UNKNOWN	STANTEC	STANTEC	STANTEC	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	ALS	ALS	TESTMARK	TESTMARK
Laboratory Work Order				508852	512131	517457	519857	521230	492012	493768	496175	500662	502693	504954	508852	508852	513823	516339	L2711537	WT2213095	WT2219907	492012	493768
Laboratory Sample ID				1914996	1926482	1946539	1954958	1959314	1855432	1861617	1869712	1885913	1893194	1901005	1914997	1914998	1932453	1942679	L2711537-4	WT2213095-006	WT2219907-011	1855434	1861618
Sample Type	Units	CCME	PWQO													Field Duplicate							
Field Parameters																							
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	**4.91**[BC]	**4.92**[BC]	**5.7**[BC]	**5.14**[BC]	6.6	**6.07**[BC]	7.42	6.52	7.83	7.43	**6.44**[BC]	**6.17**[BC]	-	**4.31**[BC]	**4.73**[BC]	-	-	-	**5.93**[BC]	**6.17**[BC]
Temperature, Field	deg C	n/v	$30_{\mu6}$[C]	16.44	13.32	3.34	0.76	1.32	0.86	0.35	0.43	16.56	15.56	21.15	17.47	-	12.81	6.48	-	-	-	0	0.07
General Chemistry																							
Acidity as CaCO3	mg/L	n/v	n/v	7	6	10	11	10	8	8	10	8	16	11	8	7	11	11	14.8	11.3	6.3	15	14
Alkalinity, Total	mg/L	n/v	n/v	29	25	11	11	14	129	134	16	43	126	72	84	88	35.7	24	2.4	3.4	4.5	15	22
Ammonia (as N)	mg/L	[B] TBC2	n/v	0.071	0.056	0.055	0.055	0.064	0.086	0.062	0.046	0.046	0.039	0.07	0.054	0.056	0.0565	0.07	<0.010	0.0220	0.0131	0.244	0.299
Bromide	mg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10	-	-	-	-
Chloride	mg/L	640[A] 120[B]	n/v	2	0.2	0.5	0.8	0.5	6.6	5.8	3.1	3	3.9	4.1	4.2	4.5	2.64	2.9	6.54	10.4	14.1	40.9	56.9
Chrysotile Asbestos (>0.5 um)	MFL	n/v	n/v	-	-	-	-	<0.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysotile Asbestos (>10 um)	MFL	n/v	n/v	-	-	-	-	<0.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide	mg/L	0.0050[B]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	<0.0020	<0.0020	-	-
Cyanide (Free)	mg/L	0.0050[B]	0.0050[C]	0.003	0.002	<0.001	**0.006**[BC]	0.003	0.004	0.003	0.004	0.002	0.003	0.002	0.001	0.001	0.0025	0.003	<0.0020	<0.0020	<0.0020	**0.006**[BC]	**0.007**[BC]
Cyanide (Strong Acid Dissociable)	mg/L	0.0050[B]	n/v	<0.002	<0.002	<0.002	0.005	<0.002	<0.002	0.002	0.005	**0.006**[B]	<0.002	<0.002	0.002	<0.002	0.0048	<0.002	-	-	-	0.002	**0.006**[B]
Cyanide (Weak Acid Dissociable)	mg/L	0.0050[B]	n/v	**0.008**[B]	0.001	0.003	0.003	0.004	0.001	0.003	0.002	<0.001	0.005	0.004	**0.008**[B]	**0.007**[B]	0.004	0.002	<0.0020	<0.0020	<0.0020	<0.001	0.005
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	19.9	42	46	43	29	18.3	18.7	18.2	23.6	19.6	28.4	23.3	24.4	44.5	46.1	-	-	-	36.6	36.3
Electrical Conductivity, Lab	µS/cm	n/v	n/v	67	57	31	35	39	257	266	46	94	232	163	180	180	78.4	61	47.5	67.5	78.1	170	224
Fluoride	mg/L	0.12[B]	n/v	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.020	<0.020	<0.020	<0.05	<0.05
Hardness (as CaCO3)	mg/L	n/v	n/v	36.7	31.3	22.2	23.6	21.9	111	115	20	45.2	115	76.5	89.9	88.8	44.2	34.7	16.6	25.8	23.2	33	40
Nitrate (as N)	mg/L	124[A] 3.0[B]	n/v	<0.1	<0.1	<0.1	0.1	<0.1	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.048	<0.020	<0.020	<0.1	<0.1
Nitrite (as N)	mg/L	0.060[B]	n/v	0.03	<0.01	0.01	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	0.03	0.01	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	6.94	6.93	**5.88**[BC]	**5.92**[BC]	**6.07**[BC]	7.71	7.76	6.65	7.05	7.45	7.41	7.45	7.57	6.8	6.77	**5.31**[BC]	**5.21**[BC]	**5.67**[BC]	**6.01**[BC]	**6.33**[BC]
Phosphorus, Total	mg/L	n/v	$0.030_{\mu4}$[E]	**0.034**[E]	**0.041**[E]	0.014	0.023	0.017	**0.035**[E]	**0.039**[E]	**0.039**[E]	0.015	0.023	**0.048**[E]	0.028	**0.034**[E]	0.0266	0.019	0.0074	0.0024	0.0073	**0.068**[E]	**0.119**[E]
Radium-226	Bq/L	n/v	1[C]	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	<0.5	<0.5	<0.5	<0.5	<0.5	2.9	2.3	0.6	0.7	1.3	1	0.9	1.1	0.63	0.6	<0.30	<0.30	<0.30	<0.5	<0.5
BC MECC Sulfate Guideline (s2)				218	218	128	128	128	309	309	128	218	309	309	309	309	218	218	128	128	128	218	218
Total Dissolved Solids	mg/L	n/v	n/v	105	105	75	115	110	180	170	45	90	155	95	150	130	95	115	57	120	122	165	180
Total Suspended Solids	mg/L	[B] SN	n/v	8.67	5.3	2.3	3.7	3.3	7	9	14	10.3	14.7	16.3	9	11.7	10	9.33	<3.0	<3.0	<3.0	9.33	62.7

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Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				JCRK-02 (Continued)					JCRK-03										JC-S-01				
Sample Date				8-Aug-23	11-Sep-23	30-Oct-23	21-Nov-23	6-Dec-23	27-Feb-23	22-Mar-23	17-Apr-23	29-May-23	13-Jun-23	5-Jul-23	8-Aug-23	8-Aug-23	26-Sep-23	18-Oct-23	29-May-22	30-Aug-22	18-Oct-22	27-Feb-23	22-Mar-23
Sample ID				JCRK-02	JCRK-02	JCRK-02	JCRK-02	JCRK-02	JCRK-03	JCRK-03	JCRK-03	JCRK-03	JCRK-03	JCRK-03	JCRK-03	SWDup	JCRK-03	JCRK-03	JC-S-01	JCS01	JC-S-01	JC-S-01	JC-S-01
Sampling Company				UNKNOWN	STANTEC	STANTEC	STANTEC	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	CNC	STANTEC	UNKNOWN	ALS	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	ALS	ALS	TESTMARK	TESTMARK
Laboratory Work Order				508852	512131	517457	519857	521230	492012	493768	496175	500662	502693	504954	508852	508852	513823	516339	L2711537	WT2213095	WT2219907	492012	493768
Laboratory Sample ID				1914996	1926482	1946539	1954958	1959314	1855432	1861617	1869712	1885913	1893194	1901005	1914997	1914998	1932453	1942679	L2711537-4	WT2213095-006	WT2219907-011	1855434	1861618
Sample Type	Units	CCME	PWQO													Field Duplicate							
Metals - Dissolved																							
Aluminum	µg/L	$5/100_{VAR1}$ [B]	n/v	**226** [B]	**150** [B]	**223** [B]	**237** [B]	**191** [B]	**125** [B]	50	90	**125** [B]	41	**113** [B]	98	95	**212** [B]	**240** [B]	**106** [B]	**150** [B]	**114** [B]	**103** [B]	**92** [B]
CWQG Aluminum Guideline				100	100	5	5	5	100	100	100	100	100	100	100	100	100	100	5	5	5	5	5
Aluminum (0.2u)	µg/L	n/v	75^{E}	**172** [E]	-	-	-	-	-	59	75	**91** [E]	29	**103** [E]	75	**76** [E]	-	-	-	-	-	-	**128** [E]
Antimony	µg/L	n/v	20^{E}	<0.1	0.4	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	0.2	0.4	<0.1	<0.1	1.13	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	1.2	1.1	0.8	0.8	0.6	<1	<1	<1	<1	0.9	1	1	1	1.15	0.8	0.7	1.2	0.72	<1	<1
Barium	µg/L	n/v	n/v	15.6	4.4	4.1	4.4	4.6	13	15	4	7	23.6	20.5	9.4	20.6	6.32	5.8	3.26	5.38	3.97	6	8
Beryllium	µg/L	n/v	$11/1,100_{s3}$ [C]	<0.02	0.02	<0.02	<0.02	<0.02	<0.5	<0.5	<0.5	<0.5	0.02	<0.02	<0.02	<0.02	0.029	<0.02	<0.1	<0.02	<0.02	<0.5	<0.5
PWQO Beryllium Guideline				11	11	11	11	11	1100	1100	11	11	1100	1100	1100	1100	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<1	<1	<1	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<1
Boron	µg/L	$29,000_{a}$ [A] $1,500_{LTG}$ [B]	200_{a} [E]	<2	3	2	2	<2	<2	5	<2	4	8	6	2	3	3.5	<2	<10	<10	<10	<2	<2
Cadmium	µg/L	1.0_{STB} [A] 0.09_{LTG} [B]	0.2^{C} $0.1/0.5_{s12}$ [E]	0.04	0.03	**0.06** [B]	**0.06** [B]	**0.07** [B]	<0.1	<0.1	**<0.1**	**<0.1**	0.04	0.03	0.03	0.03	0.045	0.04	**0.0503** [B]	**0.0534** [B]	0.0338	**<0.1**	**<0.1**
CWQG Cadmium Guideline (STB)				0.76	0.64	0.45	0.48	0.45	2.33	2.42	0.41	0.94	2.42	1.6	1.88	1.86	0.92	0.72	0.34	0.53	0.48	0.68	0.83
CWQG Cadmium Guideline (LTG)				0.07	0.06	0.05	0.05	0.04	0.17	0.18	0.04	0.08	0.18	0.13	0.15	0.14	0.08	0.07	0.04	0.05	0.05	0.06	0.07
PWQO Cadmium Guideline				0.1	0.1	0.1	0.1	0.1	0.5	0.5	0.1	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	11,400	8,960	6,030	6,850	6,570	33,100	32,400	5,420	13,000	33,400	24,200	26,600	26,000	11,900	9,580	4,870	7,560	6,880	9,440	9,980
Cerium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	<1	<1
Cesium	µg/L	n/v	n/v	<0.01	<0.01	<0.01	<0.01	<0.01	<1	<1	<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<1	<1
Chromium	µg/L	n/v	n/v	1.7	1.1	1	0.8	1	3	2	<1	<1	1	1.5	2.2	2.1	1.09	0.8	<0.5	0.52	<0.5	1	1
Cobalt	µg/L	n/v	0.9^{E}	<0.1	0.2	0.1	<0.1	0.2	0.4	0.1	0.1	0.1	0.1	0.1	<0.1	<0.1	<0.1	<0.1	0.11	0.21	0.1	0.8	0.2
Copper	µg/L	2_{TBC1} [B]	5^{C} $1/5_{s13}$ [E]	**2.7** [B]	**2.3** [B]	**2.6** [B]	2	1.8	<1	<1	**2** [E]	2	2	**2.5** [B]	1.3	1.9	**2.96** [B]	2	**1.24** [E]	0.83	0.91	<1	1
CCME Copper Guideline				2	2	2	2	2	2.6	2.7	2	2	2.7	2	2.2	2.1	2	2	2	2	2	2	2
PWQO Copper Guideline				5	5	5	5	5	5	5	1	5	5	5	5	5	5	5	1	5	5	5	5
Europium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	<1	<1
Gallium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	<1	<1
Iron	µg/L	300^{B}	300^{C}	**700** [BC]	**500** [BC]	**500** [BC]	**520** [BC]	**650** [BC]	**607** [BC]	**594** [BC]	180	**320** [BC]	**510** [BC]	**580** [BC]	**630** [BC]	**620** [BC]	**470** [BC]	**570** [BC]	242	**470** [BC]	**330** [BC]	**480** [BC]	**514** [BC]
Lanthanum	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	<1	<1
Lead	µg/L	1_{TBC1} [B]	$5/10/20/25_{s14}$ [C] $1/3/5_{s15}$ [E]	0.26	0.23	0.37	0.4	0.43	0.2	<0.1	0.1	0.2	0.11	0.16	0.13	0.14	0.21	0.25	0.816	**1.25** [BE]	0.804	0.7	0.6
CCME Lead Guideline				1	1	1	1	1	3.6	3.8	1	1	3.8	2.3	2.8	2.7	1	1	1	1	1	1	1
PWQO Lead Guideline (s14)				10	10	5	5	5	25	25	5	20	25	20	25	25	10	10	5	5	5	5	10
PWQO Lead Guideline (s15)				3	3	1	1	1	5	5	1	3	5	3	5	5	3	3	1	1	1	3	3
Lithium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<5	<5	<5	<5	1	1	1	<1	<1	<1	<1	<1	<1	<5	<5
Magnesium	µg/L	n/v	n/v	2,460	2,150	1,420	1,630	1,610	7,880	7,660	1,270	2,890	7,940	5,320	6,260	6,300	2,710	2,390	1,080	1,670	1,460	2,160	2,340
Manganese	µg/L	$3,600_{EQ3}$ [A] 430_{EQ4} [B]	n/v	34.7	34.5	25.7	33.9	69.4	57	3	49	50	93.8	72.4	35.1	35.5	27.6	21.4	41.9	51.7	31.6	98	86
CCME Manganese Guideline (EQ3)				2760.7	2400.7	1970.8	1970.8	1970.8	7295.2	7525.5	1970.8	3314.8	7525.5	5261.3	6062.4	5997.2	3250.3	2628.2	1970.8	2026	1970.8	2514.8	2977.5
CCME Manganese Guideline (EQ4)				350	350	290	290	290	470	470	330	380	610	560	560	490	350	350	290	290	290	290	310
Mercury	µg/L	0.026^{B}	0.2^{C}	**0.1** [B]	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	**0.1** [B]	**0.1** [B]	***<0.1***	***<0.1***	-	-	-	***<0.1***	***<0.1***
Mercury (by CV)	µg/L	n/v	n/v	<0.01	<0.01	<0.01	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	<0.05	0.27	<0.05	0.08	0.12	<1	<1	<1	<1	0.94	0.12	<0.05	<0.05	0.952	<0.05	<0.05	<0.05	<0.05	<1	<1
Nickel	µg/L	25_{TBC1} [B]	25^{C}	1.5	0.9	0.6	0.6	0.8	<1	<1	<1	<1	0.7	1	1.1	1.3	1.2	1	<0.5	0.53	<0.5	<1	<1
CCME Nickel Guideline				25	25	25	25	25	103.5	106.3	25	25	106.3	78	88.1	87.3	25	25	25	25	25	25	25
Niobium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	<1	<1
Phosphorus	µg/L	n/v	30_{s4} [E]	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***
Potassium	µg/L	n/v	n/v	260	370	110	110	140	1,040	980	430	400	840	590	680	680	300	230	90	<50	223	190	260
Rhodium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	<1	<1
Rubidium	µg/L	n/v	n/v	0.9	1.5	0.4	0.4	0.6	2	2	1	<1	1.5	1.2	1.2	1.1	0.89	0.6	0.24	<0.2	0.42	<1	<1
Scandium	µg/L	n/v	n/v	1	2	<1	<1	<1	2	2	<1	<1	2	2	2	2	1.2	1	-	-	-	1	1
Selenium	µg/L	1^{B}	100^{C}	0.15	0.11	0.13	<0.05	0.08	<0.2	<0.5	<0.2	<0.2	0.54	0.06	<0.05	<0.05	0.45	<0.05	0.134	0.226	0.126	0.2	<0.5
Silicon	µg/L	n/v	n/v	2,770	2,960	1,230	1,580	1,920	4,100	4,300	950	1,000	2,910	2,940	3,700	3,630	2,220	1,600	670	1,610	1,420	2,900	3,300
Silver	µg/L	0.25^{B}	0.1^{C}	0.02	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	0.01	0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.1	<0.1
Sodium	µg/L	n/v	n/v	2,660	840	680	910	680	5,900	5,170	2,250	2,600	4,580	4,170	4,490	4,510	2,200	2,270	4,410	6,660	8,080	19,100	24,200
Strontium	µg/L	n/v	n/v	19.6	18.9	11.6	11.6	12.2	59	56	9	20	62.9	41.3	44.3	44	24.6	18.4	9.7	14.5	12.3	16	18
Sulfur	µg/L	n/v	n/v	1,800	<500	<500	<500	1,200	880	1,200	<800	3,200	2,800	1,000	2,100	2,300	<500	<500	<500	<500	<500	<800	<800
Tellurium	µg/L	n/v	n/v	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<1
Thallium	µg/L	0.8^{B}	0.3_{b} [E]	<0.01	0.02	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	0.01	<0.01	<0.01	<0.01	0.108	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1
Thorium	µg/L	n/v	n/v	0.1	0.1	<0.1	<0.1	<0.1	<1	<1	<1	<1	<0.1	0.1	<0.1	<0.1	0.11	<0.1	<0.1	<0.1	<0.1	<1	<1
Tin	µg/L	n/v	n/v	0.6	0.2	0.2	0.3	<0.1	<1	<1	<1	<1	<0.1	0.3	0.2	0.5	<0.1	0.2	<0.1	<0.1	<0.1	<1	<1
Titanium	µg/L	n/v	n/v	8.1	5.9	4.8	5.2	6.2	6	4	3	4	2.4	4.5	4.7	4.8	6.17	4.9	1.33	2.05	1.7	3	3
Tungsten	µg/L	n/v	30_{E} [E]	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1
Uranium	µg/L	33^{A} 15^{B}	5_{a} [E]	0.05	0.04	0.03	0.04	0.03	<1	<1	<1	<1	0.09	0.07	0.08	0.07	0.04	0.04	<0.01	<0.01	<0.01	<1	<1
Vanadium	µg/L	n/v	6^{E}	1.1	0.7	0.6	<0.5	0.6	1	<1	<1	<1	0.7	1.1	1.1	1.1	1.1	0.6	<0.5	<0.5	<0.5	<1	<1
Yttrium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	<1	<1
Zinc	µg/L	37_{EQ1} [A] 7.0_{EQ2} [B]	30^{C} 20^{E}	10	7	10	10	15	12	1	4	4	1	5	3	4	6.1	9	11.5	16.3	11.9	10	12
CCME Zinc Guideline (EQ1)				28.7	25.1	18.9	19.9	18.7	72.2	74.3	17.3	34.1	74.3	52.9	60.5	59.9	33.5	27.4	14.8	21.4	19.6	26.3	30.8
CCME Zinc Guideline (EQ2)				35.6	41.5	73.1	73	51.5	52.4	52.4	24.5	42.4	68.8	56	58.4	53.3	65.5	54.1	75.6	124.6	77.4	87.4	80.6
Zirconium	µg/L	n/v	4_{a} [E]	2.3	2.7	0.8	1	1.4	2	1	<1	1	1.2	1.8	1.9	1.9	2.36	1.4	<0.2	<0.3	<0.3	<1	<1

See notes on last page

Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				JCRK-02 (Continued)					JCRK-03										JC-S-01				
Sample Date				8-Aug-23	11-Sep-23	30-Oct-23	21-Nov-23	6-Dec-23	27-Feb-23	22-Mar-23	17-Apr-23	29-May-23	13-Jun-23	5-Jul-23	8-Aug-23	8-Aug-23	26-Sep-23	18-Oct-23	29-May-22	30-Aug-22	18-Oct-22	27-Feb-23	22-Mar-23
Sample ID				JCRK-02	JCRK-02	JCRK-02	JCRK-02	JCRK-02	JCRK-03	JCRK-03	JCRK-03	JCRK-03	JCRK-03	JCRK-03	JCRK-03	SWDup	JCRK-03	JCRK-03	JC-S-01	JCS01	JC-S-01	JC-S-01	JC-S-01
Sampling Company				UNKNOWN	STANTEC	STANTEC	STANTEC	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	CNC	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	ALS	ALS	TESTMARK	TESTMARK
Laboratory Work Order				508852	512131	517457	519857	521230	492012	493768	496175	500662	502693	504954	508852	508852	513823	516339	L2711537	WT2213095	WT2219907	492012	493768
Laboratory Sample ID				1914996	1926482	1946539	1954958	1959314	1855432	1861617	1869712	1885913	1893194	1901005	1914997	1914998	1932453	1942679	L2711537-4	WT2213095-006	WT2219907-011	1855434	1861618
Sample Type																Field Duplicate							
Metals - Total																							
Aluminum	µg/L	$5/100_{VAR1}$ [B]	n/v	**614** [B]	**245** [B]	**294** [B]	**416** [B]	**457** [B]	**522** [B]	**581** [B]	**386** [B]	**324** [B]	**192** [B]	**256** [B]	**567** [B]	**515** [B]	**536** [B]	**476** [B]	**111** [B]	**157** [B]	**119** [B]	**208** [B]	**713** [B]
CWQG Aluminum Guideline				100	100	5	5	5	100	100	100	100	100	100	100	100	100	100	5	5	5	5	5
Antimony	µg/L	n/v	20^{E}	<0.1	0.3	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	0.4	0.4	<0.1	<0.1	1.23	0.2	<0.1	<0.1	<0.1	<0.5	<0.5
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	1.2	1	0.7	0.8	0.8	<1	<1	<1	<1	0.9	1	1	1	0.89	0.8	0.69	1.11	0.77	<1	<1
Barium	µg/L	n/v	n/v	7.8	5	4.8	5.4	5.6	16	21	6	8	14.5	11	14.8	13	8.11	7.9	3.26	5.25	4.06	7	19
Beryllium	µg/L	n/v	$11/1,100_{s3}$ [C]	<0.02	<0.02	<0.02	<0.02	<0.02	<0.5	<0.5	<0.5	<0.5	0.03	<0.02	0.02	<0.02	0.025	0.02	<0.1	<0.02	<0.02	<0.5	<0.5
Beryllium	µg/L	n/v	$11/1,100_{s3}$ [C]	<0.02	<0.02	<0.02	<0.02	<0.02	<0.5	<0.5	<0.5	<0.5	0.03	<0.02	0.02	<0.02	0.025	0.02	<0.1	<0.02	<0.02	<0.5	<0.5
PWQO Beryllium Guideline				11	11	11	11	11	1100	1100	11	11	1100	1100	1100	1100	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<1	<1	<1	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<1
Boron	µg/L	$29,000^{A}$ $1,500^{B}$	200_{a} [E]	<2	3	<2	2	<2	<2	4	<2	4	7	6	2	2	2.4	<2	<10	<10	<10	<2	<2
Cadmium	µg/L	1.0_{STB} [A] 0.09_{LTG} [B]	0.2^{C} $0.1/0.5_{s12}$ [E]	0.05	0.03	0.05	**0.06** [B]	**0.07** [B]	0.03	0.05	0.04	0.05	0.04	0.04	0.03	0.04	0.045	0.05	**0.0428** [B]	**0.0595** [B]	0.0375	0.05	**0.19** [BE]
CWQG Cadmium Guideline (STB)				0.76	0.64	0.45	0.48	0.45	2.33	2.42	0.41	0.94	2.42	1.6	1.88	1.86	0.92	0.72	0.34	0.53	0.48	0.68	0.83
CWQG Cadmium Guideline (LTG)				0.07	0.06	0.05	0.05	0.04	0.17	0.18	0.04	0.08	0.18	0.13	0.15	0.14	0.08	0.07	0.04	0.05	0.05	0.06	0.07
PWQO Cadmium Guideline				0.1	0.1	0.1	0.1	0.1	0.5	0.5	0.1	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	11,400	8,720	6,270	6,990	6,700	33,400	29,900	5,670	13,200	32,300	22,200	27,600	27,000	11,300	9,380	4,780	7,720	6,800	9,730	11,200
Cerium	µg/L	n/v	n/v	1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	1	1	1	<1	-	-	-	<1	1
Cesium	µg/L	n/v	n/v	0.05	0.01	<0.01	0.02	0.03	<1	<1	<1	<1	0.01	0.02	0.05	0.04	0.034	0.03	<0.01	<0.01	0.01	<1	<1
Chromium	µg/L	n/v	n/v	2.5	1.1	1.2	1.1	1.4	2	2	<1	1	1.3	1.1	1.9	1.8	1.65	1.1	<0.5	0.57	0.51	1	3
Cobalt	µg/L	n/v	0.9^{E}	0.2	0.2	0.2	0.2	0.3	0.5	0.4	0.3	0.3	0.2	0.2	0.3	0.2	0.17	0.1	0.12	0.22	0.12	0.6	0.9
Copper	µg/L	2_{TBC1} [B]	5^{C} $1/5_{s13}$ [E]	**2.1** [B]	1.5	**2.6** [B]	1.7	1.1	1	2	**2** [E]	2	1.3	2	1.8	1.8	1.8	**2.4** [B]	**1.25** [E]	0.87	0.92	1	**3** [B]
CCME Copper Guideline				2	2	2	2	2	2.6	2.7	2	2	2.7	2	2.2	2.1	2	2	2	2	2	2	2
PWQO Copper Guideline				5	5	5	5	5	5	5	1	5	5	5	5	5	5	5	1	5	5	5	5
Europium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	<1	<1
Gallium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	<1	<1
Iron	µg/L	300^{B}	300^{C}	**1,000** [BC]	**600** [BC]	**580** [BC]	**570** [BC]	**900** [BC]	**1,100** [BC]	**1,200** [BC]	**449** [BC]	**540** [BC]	**700** [BC]	**600** [BC]	**1,100** [BC]	**1,000** [BC]	**820** [BC]	**700** [BC]	251	**499** [BC]	**341** [BC]	**648** [BC]	**1,400** [BC]
Lanthanum	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	<1	<1
Lead	µg/L	1_{TBC1} [B]	$5/10/20/25_{s14}$ [C] $1/3/5_{s15}$ [E]	0.4	0.28	0.45	0.56	0.54	0.4	0.4	0.4	0.3	0.24	0.28	0.35	0.41	0.44	0.38	0.773	**1.26** [BE]	0.88	0.9	**3.5** [BE]
CCME Lead Guideline				1	1	1	1	1	3.6	3.8	1	1	3.8	2.3	2.8	2.7	1	1	1	1	1	1	1
PWQO Lead Guideline (s14)				10	10	5	5	5	25	25	5	20	25	20	25	25	10	10	5	5	5	5	10
PWQO Lead Guideline (s15)				3	3	1	1	1	5	5	1	3	5	3	5	5	3	3	1	1	1	3	3
Lithium	µg/L	n/v	n/v	<1	<1	<1	1	<1	<5	<5	<5	<5	2	1	1	1	<1	<1	<1	<1	<1	<5	<5
Magnesium	µg/L	n/v	n/v	2,610	2,100	1,490	1,710	1,690	7,990	7,280	1,420	2,920	8,000	5,460	6,660	6,600	2,730	2,430	1,050	1,700	1,480	2,170	2,590
Manganese	µg/L	$3,600_{EQ3}$ [A] 430_{EQ4} [B]	n/v	42	37.3	28.6	61.7	73.6	64	81	59	54	105	86.8	58.9	55.5	33.6	31	40.5	52.3	33	126	175
CCME Manganese Guideline (EQ3)				2760.7	2400.7	1970.8	1970.8	1970.8	7295.2	7525.5	1970.8	3314.8	7525.5	5261.3	6062.4	5997.2	3250.3	2628.2	1970.8	2026	1970.8	2514.8	2977.5
CCME Manganese Guideline (EQ4)				350	350	290	290	290	470	470	330	380	610	560	560	490	350	350	290	290	290	290	310
Mercury	µg/L	0.026^{B}	0.2^{C}	-	-	-	<0.01	<0.01	***<0.1***	***<0.1***	***<0.1***	-	-	-	-	-	-	<0.01	-	-	-	***<0.1***	***<0.1***
Mercury (Trace)	ng/L	n/v	n/v	4.8	4.76	6.9	3.89	3.28	3.08	2.32	6.23	4.95	2.43	4.99	3.24	3.03	5.83	4.42	2.90	3.00	2.70	6.43	9.13
Mercury (by CV)	ng/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	-	-	-	-	-	-
Methyl Mercury	ng/L	4^{B}	n/v	0.15	0.16	0.30	0.10	0.13	-	-	-	0.17	0.28	0.26	0.17	0.20	0.16	0.10	0.23	0.10	0.16	-	-
Molybdenum	µg/L	73^{B}	40^{E}	<0.05	0.48	0.05	<0.05	<0.05	<1	<1	<1	<1	0.79	0.13	<0.05	<0.05	0.5	0.05	<0.05	<0.05	<0.05	<1	<1
Nickel	µg/L	25_{TBC1} [B]	25^{C}	1.5	1.2	0.5	0.7	1	1	<1	<1	<1	1.8	1.2	1.6	1.5	1.3	1.2	0.53	0.59	<0.5	<1	4
CCME Nickel Guideline				25	25	25	25	25	103.5	106.3	25	25	106.3	78	88.1	87.3	25	25	25	25	25	25	25
Niobium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	<1	<1
Phosphorus	µg/L	n/v	30_{s4} [E]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	***<50***	***<50***	***<50***	-	-
Potassium	µg/L	n/v	n/v	370	390	160	150	200	1,110	1,040	500	400	870	620	830	800	350	250	83	<50	220	220	450
Rhodium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	<1	<1
Rubidium	µg/L	n/v	n/v	1.5	1.5	0.6	0.7	1	2	2	2	1	1.8	1.4	1.9	1.8	1.4	0.9	0.24	<0.2	0.47	<1	2
Scandium	µg/L	n/v	n/v	2	2	<1	<1	<1	2	2	<1	<1	2	2	2	2	1.4	1	-	-	-	1	2
Selenium	µg/L	1^{B}	100^{C}	<0.05	0.09	0.11	0.12	<0.05	<0.2	<0.5	<0.2	<0.2	0.58	0.08	<0.05	<0.05	0.22	0.14	0.132	0.178	0.157	<0.2	<0.5
Silicon	µg/L	n/v	n/v	3,840	2,990	1,410	1,780	2,280	4,600	4,700	1,500	1,300	3,680	3,070	4,890	4,770	2,890	1,890	700	1,610	1,480	3,100	4,200
Silver	µg/L	0.25^{B}	0.1^{C}	0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	0.1	<0.01	0.01	0.01	0.013	<0.01	<0.05	<0.01	<0.01	<0.1	<0.1
Sodium	µg/L	n/v	n/v	2,890	900	760	930	710	5,790	4,870	2,240	2,600	4,510	4,220	4,520	4,580	2,160	2,210	4,160	6,870	8,340	19,500	21,800
Strontium	µg/L	n/v	n/v	20.2	18.8	12.2	12.2	13	60	57	9	21	63.5	41.8	46.8	45.9	24.7	19.3	9.3	14.7	12.4	17	24
Sulfur	µg/L	n/v	n/v	1,500	<500	<500	<500	1,100	910	<800	<800	3,300	3,700	600	2,200	2,300	<500	<500	<500	<500	<500	<800	<800
Tellurium	µg/L	n/v	n/v	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<1
Thallium	µg/L	0.8^{B}	0.3_{s} [E]	<0.01	0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	0.02	<0.01	<0.01	<0.01	0.049	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1
Thorium	µg/L	n/v	n/v	0.2	0.1	<0.1	<0.1	<0.1	<1	<1	<1	<1	<0.1	0.1	0.2	0.2	0.16	0.1	<0.1	<0.1	<0.1	<1	<1
Tin	µg/L	n/v	n/v	0.4	0.1	0.3	0.4	<0.1	<1	<1	<1	9	0.5	0.4	0.5	0.4	0.41	0.2	<0.1	<0.1	<0.1	<1	<1
Titanium	µg/L	n/v	n/v	22.8	7.6	7.2	10.9	14.8	23	26	14	11	8	9.3	24.1	22.2	18.2	11.6	1.82	2.36	1.9	7	28
Tungsten	µg/L	30_{a} [E]	5_{a} [E]	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1
Uranium	µg/L	33^{A} 15^{B}	6^{E}	0.06	0.04	0.04	0.04	0.04	<1	<1	<1	<1	0.11	0.07	0.08	0.08	0.056	0.05	<0.01	<0.01	<0.01	<1	<1
Vanadium	µg/L	n/v	n/v	1.6	0.7	0.7	0.7	0.9	1	1	<1	1	1	1.1	1.5	1.4	1.3	0.9	<0.5	<0.5	<0.5	<1	1
Yttrium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	<1	<1
Zinc	µg/L	37_{EQ1} [A] 7.0_{EQ2} [B]	30^{C} 20^{E}	10	6	13	11	13	18	5	6	5	3	5	7	7	7.5	10	10	14.2	10.7	11	**31** [CE]
CCME Zinc Guideline (EQ1)				28.7	25.1	18.9	19.9	18.7	72.2	74.3	17.3	34.1	74.3	52.9	60.5	59.9	33.5	27.4	14.8	21.4	19.6	26.3	30.8
CCME Zinc Guideline (EQ2)				35.6	41.5	73.1	73	51.5	52.4	52.4	24.5	42.4	68.8	56	58.4	53.3	65.5	54.1	75.6	124.6	77.4	87.4	80.6
Zirconium	µg/L	n/v	4_{a} [E]	3.1	2.4	0.9	1.1	1.7	1	2	2	1	1.5	2	2.8	2.7	3.06	1.6	<0.2	<0.2	<0.2	<1	1

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Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				JC-S-01 (Continued)										KC-01				MATR-01					
Sample Date				17-Apr-23	24-May-23	7-Jun-23	4-Jul-23	2-Aug-23	11-Sep-23	30-Oct-23	21-Nov-23	6-Dec-23	16-Feb-23	16-Feb-23	22-Mar-23	17-Apr-23	17-Apr-23	28-Oct-21	8-Jun-22	2-Sep-22	25-Oct-22	25-May-23	21-Jun-23
Sample ID				JC-S-01	JC-S-01	JC-S-01	JC-S-01	JC-S-01	JC-S-01	JC-S-01	JC-S-01	JC-S-01	KC-01	Dup1	KC-01	KC-01	Dup1	MATR-01	MATR-01	MATR01	MATR-01	MATR-01	MATR-01
Sampling Company				UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	STANTEC	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	CNC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	ALS	ALS	ALS	TESTMARK	TESTMARK
Laboratory Work Order				496175	500390	502041	504663	507996	512131	517457	519857	521230	491080	491080	493768	496175	496175	L2657407	WT2205383	WT2213093	WT2219907	500390	503549
Laboratory Sample ID				1869714	1884827	1890728	1899887	1911841	1926481	1946540	1954957	1959315	1852149	1852151	1861616	1869713	1869716	L2657407-1	WT2205383-001	WT2213093-001	WT2219907-002	1884829	1896033
Sample Type														Field Duplicate			Field Duplicate						
Field Parameters																							
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	6.67	-	**4.9[BC]**	**4.21[BC]**	**4.53[BC]**	**4.19[BC]**	**4.24[BC]**	**4.83[BC]**	**5.86[BC]**	**6.43[BC]**	-	7.35	7.08	-	-	-	-	-	-	7.62
Temperature, Field	deg C	n/v	30_{s6}[C]	1.55	9.82	12.68	17.52	15	12.21	3.66	0.1	0.45	0	-	0.91	0.41	-	-	-	-	-	12.48	17.89
General Chemistry																							
Acidity as CaCO3	mg/L	n/v	n/v	11	12	9	19	11	12	16	17	14	15	18	-	15	<5	3.5	<2.0	<2.0	<2.0	13	10
Alkalinity, Total	mg/L	n/v	n/v	18	6	8	10	14	10	8	11	8	48	51	63	41	35	64.9	39.9	60.7	35.5	37	53
Ammonia (as N)	mg/L	TBC2[B]	n/v	0.019	0.042	0.049	0.054	0.059	0.065	0.057	0.082	0.06	0.131	0.127	0.079	0.059	0.058	0.016	0.0176	0.0324	0.0189	0.026	0.018
Bromide	mg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10	-	-	-	-	-
Chloride	mg/L	640[A] 120[B]	n/v	21.1	7.2	14.6	10.9	34.5	26.2	12.4	4.9	14.1	30	29.7	33.6	4.1	4.1	3.62	2.26	4.54	1.83	1.5	2
Chrysotile Asbestos (>0.5 um)	MFL	n/v	n/v	-	-	-	-	-	-	-	-	<0.17	-	-	-	-	-	-	-	-	-	-	-
Chrysotile Asbestos (>10 um)	MFL	n/v	n/v	-	-	-	-	-	-	-	-	<0.17	-	-	-	-	-	-	-	-	-	-	-
Cyanide	mg/L	0.0050[B]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	0.0029	<0.0020	<0.0020	-	-
Cyanide (Free)	mg/L	0.0050[B]	0.0050[C]	**0.006[BC]**	0.004	<0.001	0.002	0.005	0.002	<0.001	**0.009[BC]**	0.001	0.001	<0.001	0.003	0.004	**0.006[BC]**	<0.0020	<0.0020	<0.0020	<0.0020	0.004	<0.001
Cyanide (Strong Acid Dissociable)	mg/L	0.0050[B]	n/v	**0.008[B]**	<0.002	<0.002	0.005	0.003	<0.002	<0.002	0.004	<0.002	<0.002	<0.002	0.003	0.004	**0.006[B]**	-	-	-	-	<0.002	0.002
Cyanide (Weak Acid Dissociable)	mg/L	0.0050[B]	n/v	0.001	<0.001	0.003	0.003	0.003	0.004	0.003	0.003	0.004	<0.001	<0.001	0.003	0.002	0.002	<0.0020	<0.0020	<0.0020	<0.0020	0.001	<0.001
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	15.1	27.6	33.7	40.2	46	52	52	58	47	18.5	18.6	19	17.8	18.1	-	-	-	-	12.8	10.4
Electrical Conductivity, Lab	µS/cm	n/v	n/v	104	49	74	72	158	131	76	58	83	575	533	542	97	98	133	82.8	148	83.3	82	111
Fluoride	mg/L	0.12[B]	n/v	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.16[B]**	**0.15[B]**	0.12	<0.05	<0.05	0.037	0.031	0.035	0.025	<0.05	<0.05
Hardness (as CaCO3)	mg/L	n/v	n/v	14.1	13.7	22.1	22.4	30.4	28.7	23.6	33.4	23	189	186	180	52.9	54.1	65.6	41.4	72.0	43.7	39.8	54
Nitrate (as N)	mg/L	124[A] 3.0[B]	n/v	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	0.6	0.7	0.8	<0.1	0.2	0.094	0.079	0.081	0.035	0.2	<0.1
Nitrite (as N)	mg/L	0.060[B]	n/v	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.01	<0.01
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	6.62	**5.28[BC]**	**5.93[BC]**	**5.89[BC]**	**6[BC]**	**5.68[BC]**	**5.38[BC]**	**5.52[BC]**	**5.4[BC]**	7.29	6.96	7.49	7.35	7.25	7.72	7.36	7.63	7.67	7.08	6.99
Phosphorus, Total	mg/L	n/v	0.030_{s4}[E]	**0.034[E]**	<0.002	0.004	<0.002	0.013	0.013	0.011	0.015	0.008	**0.049[E]**	**0.031[E]**	**0.043[E]**	**0.096[E]**	**0.088[E]**	0.0191	0.0161	0.0128	0.0062	0.008	0.004
Radium-226	Bq/L	n/v	1[C]	-	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	<0.0020	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.7	<0.5	201	199	158	6.9	6.9	5.1	2.55	5.52	2.32	3	3.5
BC MECC Sulfate Guideline (s2)				128	128	128	128	128	128	128	218	128	429	429	309	218	218	218	218	218	218	218	218
Total Dissolved Solids	mg/L	n/v	n/v	85	80	115	125	125	105	100	105	120	435	440	375	115	105	99	70	85	81	65	95
Total Suspended Solids	mg/L	SN[B]	n/v	1.7	1.3	1	1.7	1	1	1.7	1	1	7.67	8	14.7	80	75.5	<3.0	5.0	<3.0	5.8	4.7	3.3

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Sample Location				JC-S-01 (Continued)										KC-01				MATR-01					
Sample Date				17-Apr-23	24-May-23	7-Jun-23	4-Jul-23	2-Aug-23	11-Sep-23	30-Oct-23	21-Nov-23	6-Dec-23	16-Feb-23	16-Feb-23	22-Mar-23	17-Apr-23	17-Apr-23	28-Oct-21	8-Jun-22	2-Sep-22	25-Oct-22	25-May-23	21-Jun-23
Sample ID				JC-S-01	JC-S-01	JC-S-01	JC-S-01	JC-S-01	JC-S-01	JC-S-01	JC-S-01	JC-S-01	KC-01	Dup1	KC-01	KC-01	Dup1	MATR-01	MATR-01	MATR01	MATR-01	MATR-01	MATR-01
Sampling Company				UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	STANTEC	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	CNC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	ALS	ALS	ALS	TESTMARK	TESTMARK
Laboratory Work Order				496175	500390	502041	504663	507996	512131	517457	519857	521230	491080	491080	493768	496175	496175	L2657407	WT2205383	WT2213093	WT2219907	500390	503549
Laboratory Sample ID				1869714	1884827	1890728	1899887	1911841	1926481	1946540	1954957	1959315	1852149	1852151	1861616	1869713	1869716	L2657407-1	WT2205383-001	WT2213093-001	WT2219907-002	1884829	1896033
Sample Type														Field Duplicate			Field Duplicate						
Metals - Dissolved																							
Aluminum	µg/L	$5/100_{VAR1}$ [B]	n/v	49	**62** [B]	**112** [B]	**118** [B]	**133** [B]	**65** [B]	**121** [B]	**302** [B]	**116** [B]	**120** [B]	70	60	82	84	68.1	63.7	54.9	100	54	45
CWQG Aluminum Guideline				100	5	5	5	5	5	5	5	5	100	100	100	100	100	100	100	100	100	100	100
Aluminum (0.2u)	µg/L	n/v	75^{E}	29	63	**108** [E]	-	-	-	-	-	-	-	-	59	52	52	-	-	-	-	46	38
Antimony	µg/L	n/v	20^{E}	<0.5	<0.5	<0.1	-	<0.1	1.4	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	<1	<1	0.6	-	0.8	0.8	0.6	1	0.7	<1	<1	<1	<1	<1	0.76	0.52	0.88	0.52	<1	0.4
Barium	µg/L	n/v	n/v	14	3	4	-	17.9	5	3.6	5.8	3.5	12	12	12	5	15	7.2	5.55	7.5	5.07	5	15.9
Beryllium	µg/L	n/v	$11/1,100_{s3}$ [C]	<0.5	<0.5	<0.02	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.02	<0.02	<0.02	<0.5	<0.02
PWQO Beryllium Guideline				11	11	11	11	11	11	11	11	11	1100	1100	1100	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	<1	<1	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<1	<1	<1	<1	<0.05	<0.05	<0.05	<0.05	<1	<0.05
Boron	µg/L	$29,000^{A}$ $1,500^{B}$	200_{a} [E]	<2	<2	5	-	<2	2	<2	<2	<2	24	25	29	3	3	14	<10	16	<10	4	9
Cadmium	µg/L	1.0_{STB} [A] 0.09_{LTG} [B]	0.2^{C} $0.1/0.5_{s12}$ [E]	**<0.1**	**<0.1**	0.05	-	0.05	0.04	0.04	0.05	0.04	0.2	0.2	0.2	**<0.1**	<0.1	0.0131	0.0149	0.0099	0.0146	**<0.1**	0.007
CWQG Cadmium Guideline (STB)				0.29	0.28	0.45	0.46	0.63	0.59	0.48	0.69	0.47	4.01	3.94	3.81	1.1	1.12	1.37	0.86	1.5	0.91	0.82	1.12
CWQG Cadmium Guideline (LTG)				0.04	0.04	0.05	0.05	0.06	0.06	0.05	0.06	0.05	0.27	0.27	0.26	0.09	0.1	0.11	0.08	0.12	0.08	0.07	0.1
PWQO Cadmium Guideline				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	4,240	3,780	6,180	-	9,500	8,340	6,630	9,530	7,100	57,000	42,100	53,600	12,400	12,600	19,400	12,100	20,700	12,800	11,100	15,500
Cerium	µg/L	n/v	n/v	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	1	1	-	-	-	-	<1	<1
Cesium	µg/L	n/v	n/v	<1	<1	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<1	<1	<1	<1	<1	<0.01	<0.01	<0.01	<0.01	<1	<0.01
Chromium	µg/L	n/v	n/v	<1	<1	0.4	-	0.6	0.7	0.8	0.8	0.7	2	2	2	<1	<1	0.37	<0.5	<0.5	<0.5	<1	0.7
Cobalt	µg/L	n/v	0.9^{E}	<0.1	<0.1	0.4	-	0.2	0.2	0.1	<0.1	0.2	0.4	0.4	0.3	0.2	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	0.2
Copper	µg/L	2_{TBC1} [B]	5^{C} $1/5_{s13}$ [E]	**2** [E]	**2** [E]	**2.2** [B]	-	1.7	1.9	**2.2** [B]	**2.3** [B]	1.1	3	3	3	2	**3** [B]	1.2	1.07	1.17	1.03	2	1.3
CCME Copper Guideline				2	2	2	2	2	2	2	2	2	4	4	3.9	2	2	2	2	2	2	2	2
PWQO Copper Guideline				1	1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Europium	µg/L	n/v	n/v	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	<1	<1
Gallium	µg/L	n/v	n/v	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	<1	<1
Iron	µg/L	300^{B}	300^{C}	100	180	280	-	**520** [BC]	**480** [BC]	**330** [BC]	**460** [BC]	**310** [BC]	**635** [BC]	**563** [BC]	**650** [BC]	206	205	235	141	148	218	170	280
Lanthanum	µg/L	n/v	n/v	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	<1	<1
Lead	µg/L	1_{TBC1} [B]	$5/10/20/25_{s14}$ [C] $1/3/5_{s15}$ [E]	0.1	0.6	0.7	-	0.68	0.76	0.77	0.29	0.73	0.2	0.1	0.1	0.1	0.2	0.058	0.056	0.057	0.065	<0.1	0.06
CCME Lead Guideline				1	1	1	1	1	1	1	1	1	7	7	6.7	1	1	1.9	1	2.1	1	1	1
PWQO Lead Guideline (s14)				5	5	5	5	5	5	5	5	5	20	20	20	20	10	20	10	20	10	10	20
PWQO Lead Guideline (s15)				1	1	1	1	1	1	3	1	1	5	5	5	3	3	3	3	3	3	3	3
Lithium	µg/L	n/v	n/v	<5	<5	1	-	<1	<1	<1	1	<1	9	10	7	<5	<5	<1	<1	<1	<1	<5	<1
Magnesium	µg/L	n/v	n/v	776	711	1,380	-	1,670	1,720	1,490	2,200	1,590	9,240	9,400	9,520	2,190	2,150	4,900	2,720	4,930	2,850	2,550	3,300
Manganese	µg/L	$3,600_{EQ3}$ [A] 430_{EQ4} [B]	n/v	5	24	53.9	-	52.9	50.2	30.4	18.7	44.4	50	50	39	51	51	18	9.51	5.53	10.4	6	2.4
CCME Manganese Guideline (EQ3)				1970.8	1970.8	1970.8	1970.8	2339.9	2224.7	1970.8	2541.5	1970.8	11640.6	11478.2	11152.5	3805.7	3881.4	4597.1	3068.8	4988.6	3218	2964.4	3875.1
CCME Manganese Guideline (EQ4)				330	290	290	290	290	290	290	290	290	730	840	730	490	490	390	380	430	350	380	490
Mercury	µg/L	0.026^{B}	0.2^{C}	***<0.1***	***<0.1***	***<0.1***	-	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	0.000148	-	-	-	***<0.1***	***<0.1***
Mercury (by CV)	µg/L	n/v	n/v	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01
Molybdenum	µg/L	73^{B}	40^{E}	<1	<1	0.19	-	<0.05	1.32	<0.05	0.06	<0.05	<1	<1	<1	<1	<1	0.118	0.086	0.125	0.063	<1	0.17
Nickel	µg/L	25_{TBC1} [B]	25^{C}	<1	<1	0.5	-	0.7	<0.5	<0.5	0.6	0.7	1	1	<1	<1	<1	0.55	<0.5	0.55	<0.5	<1	0.5
CCME Nickel Guideline				25	25	25	25	25	25	25	25	25	150	150	149.4	25	25	69.4	25	74.5	25	25	25
Niobium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	<1	<1
Phosphorus	µg/L	n/v	30_{s4} [E]	***<50***	***<50***	***<50***	-	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	<30	***<50***	***<50***	***<50***	***<50***	***<50***
Potassium	µg/L	n/v	n/v	540	100	90	-	150	60	60	<50	<50	2,250	2,300	2,470	470	460	513	364	527	311	400	500
Rhodium	µg/L	n/v	n/v	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	<1	<1
Rubidium	µg/L	n/v	n/v	1	<1	0.2	-	0.3	<0.2	<0.2	<0.2	<0.2	4	4	4	1	1	1.23	1.12	1.3	0.9	<1	1.1
Scandium	µg/L	n/v	n/v	<1	<1	<1	-	<1	1	<1	1	<1	<1	<1	1	<1	<1	-	-	-	-	1	1
Selenium	µg/L	1^{B}	100^{C}	<0.2	0.5	0.19	-	0.25	0.36	0.15	0.2	0.08	**2.6** [B]	**2.5** [B]	**2.5** [B]	<0.2	<0.2	0.109	0.094	0.106	0.115	<0.5	0.2
Silicon	µg/L	n/v	n/v	790	<600	1,150	-	1,880	1,800	1,370	1,950	1,870	1,600	1,600	3,000	1,000	1,000	2,710	2,160	2,370	2,260	2,800	1,950
Silver	µg/L	0.25^{B}	0.1^{C}	<0.1	<0.1	<0.01	-	<0.01	0.01	<0.01	<0.01	<0.01	**0.2** [C]	0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01	<0.1	0.02
Sodium	µg/L	n/v	n/v	15,600	4,600	9,560	-	20,000	14,100	7,610	3,180	8,710	20,800	21,400	24,500	3,230	3,140	3,240	2,030	3,660	1,610	1,600	2,080
Strontium	µg/L	n/v	n/v	8	7	10.3	-	15.7	14.7	10.2	13.6	10.7	204	211	153	18	18	33.2	20.7	35.9	21.1	17	19.9
Sulfur	µg/L	n/v	n/v	<800	<800	900	-	<500	<500	<500	<500	1,100	51,900	53,700	46,800	1,200	1,200	1,870	780	2,260	860	<800	4,200
Tellurium	µg/L	n/v	n/v	<1	<1	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<1	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<1	<0.2
Thallium	µg/L	0.8^{B}	0.3_{s} [E]	<0.1	<0.1	<0.01	-	<0.01	0.07	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01
Thorium	µg/L	n/v	n/v	<1	<1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<1	<0.1
Tin	µg/L	n/v	n/v	<1	<1	<0.1	-	0.3	0.2	0.2	0.3	<0.1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<1	0.3
Titanium	µg/L	n/v	n/v	2	<1	1.7	-	2.3	2.4	1.6	3.3	1.7	4	2	4	4	4	2.07	1.26	1.78	1.9	2	1.7
Tungsten	µg/L	n/v	30_{a} [E]	<1	<1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<1	<0.1
Uranium	µg/L	33^{A} 15^{B}	5_{a} [E]	<1	<1	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<1	<1	<1	<1	<1	0.069	0.074	0.065	0.049	<1	0.07
Vanadium	µg/L	n/v	6^{E}	<1	<1	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	1	<1	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5
Yttrium	µg/L	n/v	n/v	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	<1	<1
Zinc	µg/L	37_{EQ1} [A] 7.0_{EQ2} [B]	30^{C} 20^{E}	4	11	14	-	13	10	9	9	12	**28** [E]	**27** [E]	**38** [CE]	12	13	2.1	2	2.5	3.3	3	3
CCME Zinc Guideline (EQ1)				12.9	12.7	18.8	19	24.5	23.4	19.9	26.5	19.5	112.4	110.9	108	38.9	39.7	46.6	31.7	50.3	33.2	30.7	39.6
CCME Zinc Guideline (EQ2)				16.7	61.6	61.8	69.3	89.3	115.3	122.3	158.4	112.8	122.6	158.3	100.5	34.4	38.4	39	33.8	45.8	27.6	28.7	38
Zirconium	µg/L	n/v	4_{a} [E]	<1	<1	0.3	-	0.7	0.8	0.3	0.9	0.5	<1	<1	<1	1	1	0.25	<0.3	<0.3	<0.3	<1	0.4

See notes on last page

Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				JC-S-01 (Continued)										KC-01				MATR-01					
Sample Date				17-Apr-23	24-May-23	7-Jun-23	4-Jul-23	2-Aug-23	11-Sep-23	30-Oct-23	21-Nov-23	6-Dec-23	16-Feb-23	16-Feb-23	22-Mar-23	17-Apr-23	17-Apr-23	28-Oct-21	8-Jun-22	2-Sep-22	25-Oct-22	25-May-23	21-Jun-23
Sample ID				JC-S-01	JC-S-01	JC-S-01	JC-S-01	JC-S-01	JC-S-01	JC-S-01	JC-S-01	JC-S-01	KC-01	Dup1	KC-01	KC-01	Dup1	MATR-01	MATR-R-01	MATR01	MATR-01	MATR-01	MATR-01
Sampling Company				UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	STANTEC	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	CNC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	ALS	ALS	ALS	TESTMARK	TESTMARK
Laboratory Work Order				496175	500390	502041	504663	507996	512131	517457	519857	521230	491080	491080	493768	496175	496175	L2657407	WT2205383	WT2213093	WT2219907	500390	503549
Laboratory Sample ID				1869714	1884827	1890728	1899887	1911841	1926481	1946540	1954957	1959315	1852149	1852151	1861616	1869713	1869716	L2657407-1	WT2205383-001	WT2213093-001	WT2219907-002	1884829	1896033
Sample Type														Field Duplicate			Field Duplicate						
Metals - Total																							
Aluminum	µg/L	$5/100_{VAR1}$ [B]	n/v	89	**81** [B]	**134** [B]	**247** [B]	**148** [B]	**152** [B]	**133** [B]	**324** [B]	**128** [B]	**319** [B]	**268** [B]	**673** [B]	**3,210** [B]	**2,790** [B]	**202** [B]	**308** [B]	**218** [B]	**324** [B]	**197** [B]	**140** [B]
CWQG Aluminum Guideline				100	5	5	5	5	5	5	5	5	100	100	100	100	100	100	100	100	100	100	100
Antimony	µg/L	n/v	20 [E]	<0.5	<0.5	<0.1	<0.1	<0.1	1.2	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1
Arsenic	µg/L	5 [B]	100^{C} 5^{E}	<1	<1	0.7	0.8	0.9	0.8	0.6	0.9	0.6	<1	<1	<1	<1	<1	0.82	0.59	0.93	0.61	<1	0.5
Barium	µg/L	n/v	n/v	2	3	4.4	5.3	5.7	5.3	4.8	5.4	3.5	14	13	17	22	21	8.23	7.28	8.8	7.13	5	6.5
Beryllium	µg/L	n/v	$11/1{,}100_{63}$ [C]	<0.5	<0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.02	<0.02	<0.02	<0.5	<0.02
Beryllium	µg/L	n/v	$11/1{,}100_{63}$ [C]	<0.5	<0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.02	<0.02	<0.02	<0.5	<0.02
PWQO Beryllium Guideline				11	11	11	11	11	11	11	11	11	1100	1100	1100	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	<1	<1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<1	<1	<1	<1	<0.05	<0.05	<0.05	<0.05	<1	<0.05
Boron	µg/L	$29{,}000^{A}$ $1{,}500$ [B]	200_{a} [E]	<2	<2	5	<2	<2	<2	<2	<2	<2	25	24	25	3	3	12	<10	15	<10	4	10
Cadmium	µg/L	1.0_{STB} [A] 0.09_{LTG} [B]	0.2^{C} $0.1/0.5_{s12}$ [E]	<0.02	0.03	0.05	0.05	0.04	0.05	0.04	0.05	0.04	**0.23** [C]	**0.23** [C]	**0.33** [BC]	**0.28** [BCE]	**0.28** [BCE]	0.0151	0.0126	0.013	0.0165	<0.02	0.01
CWQG Cadmium Guideline (STB)				0.29	0.28	0.45	0.46	0.63	0.59	0.48	0.69	0.47	4.01	3.94	3.81	1.1	1.12	1.37	0.86	1.5	0.91	0.82	1.12
CWQG Cadmium Guideline (LTG)				0.04	0.04	0.05	0.05	0.06	0.06	0.05	0.06	0.05	0.27	0.27	0.26	0.09	0.1	0.11	0.08	0.12	0.08	0.07	0.1
PWQO Cadmium Guideline				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	4,270	3,780	6,320	6,940	8,990	8,210	6,870	9,550	7,230	59,700	54,100	50,300	15,200	15,800	18,400	12,300	19,600	12,900	10,700	15,500
Cerium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	6	5	-	-	-	-	<1	<1
Cesium	µg/L	n/v	n/v	<1	<1	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<1	<1	<1	<1	<1	0.019	0.032	0.022	0.028	<1	0.02
Chromium	µg/L	n/v	n/v	<1	<1	1.1	1.2	0.7	0.9	1.1	0.8	0.8	2	1	2	6	6	0.69	0.93	0.78	0.96	<1	0.9
Cobalt	µg/L	n/v	0.9 [E]	<0.1	<0.1	0.4	0.3	0.3	0.3	0.1	<0.1	0.2	0.5	0.5	0.7	**1.6** [E]	**1.5** [E]	0.17	0.22	0.16	0.19	0.1	0.1
Copper	µg/L	2_{TBC1} [B]	5^{C} $1/5_{s13}$ [E]	1	**2** [E]	**4.4** [B]	**16.3** [BCE]	0.9	1.7	**2.3** [B]	1.1	<0.2	4	**5** [B]	**4** [B]	**6** [BCE]	**6** [BCE]	1.33	1.3	1.44	1.34	<1	1.8
CCME Copper Guideline				2	2	2	2	2	2	2	2	2	4	4	3.9	2	2	2	2	2	2	2	2
PWQO Copper Guideline				1	1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Europium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	<1	<1
Gallium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	2	-	-	-	-	<1	<1
Iron	µg/L	300 [B]	300^{C}	130	190	**320** [BC]	**490** [BC]	**540** [BC]	**530** [BC]	**350** [BC]	**490** [BC]	**330** [BC]	**1,100** [BC]	**740** [BC]	**1,700** [BC]	**3,330** [BC]	**2,910** [BC]	**448** [BC]	**462** [BC]	**358** [BC]	**498** [BC]	**330** [BC]	**320** [BC]
Lanthanum	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	3	3	-	-	-	-	<1	<1
Lead	µg/L	1_{TBC1} [B]	$5/10/20/25_{s14}$ [C] $1/3/5_{s15}$ [E]	0.2	0.6	0.75	**1.14** [BE]	0.7	0.85	0.84	0.28	0.76	0.4	0.4	0.5	**1.5** [B]	**1.5** [B]	0.125	0.19	0.13	0.195	0.1	0.13
CCME Lead Guideline				1	1	1	1	1	1	1	1	1	7	7	6.7	1	1	1.9	1	2.1	1	1	1
PWQO Lead Guideline (s14)				5	5	5	5	5	5	5	5	5	20	20	20	20	10	20	10	20	10	10	20
PWQO Lead Guideline (s15)				1	1	1	1	1	1	1	3	1	5	5	5	3	3	3	3	3	3	3	3
Lithium	µg/L	n/v	n/v	<5	<5	1	<1	<1	<1	<1	1	<1	10	10	7	<5	<5	<1	<1	<1	<1	<5	<1
Magnesium	µg/L	n/v	n/v	786	699	1,410	1,420	1,660	1,720	1,500	2,320	1,650	9,450	9,490	9,290	4,200	4,190	4,780	2,900	4,960	3,030	2,490	3,210
Manganese	µg/L	$3{,}600_{EQ3}$ [A] 430_{EQ4} [B]	n/v	6	24	56	64.1	51.5	50.5	31.8	20.1	45.8	58	55	73	111	111	31.9	29.7	30.6	22.6	16	16.7
CCME Manganese Guideline (EQ3)				1970.8	1970.8	1970.8	1970.8	2339.9	2224.7	1970.8	2541.5	1970.8	11640.6	11478.2	11152.5	3805.7	3881.4	4597.1	3068.8	4988.6	3218	2964.4	3875.1
CCME Manganese Guideline (EQ4)				330	290	290	290	290	290	290	290	290	730	840	730	490	490	390	380	430	350	380	490
Mercury	µg/L	0.026 [B]	0.2^{C}	***<0.1***	-	-	-	-	-	-	0.02	<0.01	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	-	-	-	-	-	-
Mercury (Trace)	ng/L	n/v	n/v	5.43	4.69	2.92	3.36	2.84	2.46	4.96	10.8	2.21	2.94	1.68	3.09	7.57	7.4	2.00	3.62	2.16	3.77	3.77	2.27
Mercury (by CV)	ng/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl Mercury	ng/L	4 [B]	n/v	-	0.16	0.25	0.22	0.47	0.22	0.89	0.82	0.18	-	-	-	-	-	-	0.000141	0.000110	0.000077	0.00013	0.00016
Molybdenum	µg/L	73 [B]	40^{E}	<1	<1	0.16	<0.05	<0.05	1.44	<0.05	<0.05	<0.05	<1	<1	<1	<1	<1	0.132	0.105	0.136	0.079	<1	0.13
Nickel	µg/L	25_{TBC1} [B]	25^{C}	<1	<1	<0.5	0.8	0.7	<0.5	0.8	1	<0.5	2	1	3	4	4	0.7	0.77	0.7	0.81	<1	0.7
CCME Nickel Guideline				25	25	25	25	25	25	25	25	25	150	150	149.4	25	25	69.4	25	74.5	25	25	25
Niobium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	<1	<1
Phosphorus	µg/L	n/v	30_{s4} [E]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	***<50***	***<50***	***<50***	***<50***	-	-
Potassium	µg/L	n/v	n/v	550	<100	90	70	140	90	70	<50	<50	2,230	2,260	2,520	1,160	1,160	584	453	570	439	400	470
Rhodium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	<1	<1
Rubidium	µg/L	n/v	n/v	1	<1	0.2	0.3	0.4	0.2	<0.2	<0.2	<0.2	4	4	5	6	6	1.47	1.42	1.67	1.28	1	1.2
Scandium	µg/L	n/v	n/v	<1	<1	<1	1	<1	1	<1	1	<1	<1	<1	2	3	3	-	-	-	-	1	1
Selenium	µg/L	1 [B]	100^{C}	<0.2	<0.5	0.36	0.18	0.19	0.28	0.2	0.17	0.06	**2.1** [B]	**2.3** [B]	**2.2** [B]	<0.2	<0.2	0.115	0.093	0.112	0.125	<0.5	0.18
Silicon	µg/L	n/v	n/v	900	<600	1,230	1,780	1,880	1,900	1,450	1,940	1,870	1,800	1,800	3,800	5,700	5,300	2,990	2,700	2,580	2,850	2,600	2,450
Silver	µg/L	0.25 [B]	0.1^{C}	<0.1	<0.1	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.01	<0.01	<0.01	<0.1	0.05
Sodium	µg/L	n/v	n/v	14,900	4,400	9,480	7,280	19,000	14,500	7,720	3,200	8,550	21,100	21,200	23,800	3,400	3,440	3,690	2,110	3,800	1,780	1,500	2,110
Strontium	µg/L	n/v	n/v	8	7	10.6	12.2	15.2	15	10.8	13.7	10.9	211	213	151	25	26	34.7	20	34.1	21	17	19.1
Sulfur	µg/L	n/v	n/v	<800	<800	<500	1,300	<500	<500	600	<500	1,100	52,500	52,400	41,900	890	970	1,770	1,060	1,900	960	<800	2,600
Tellurium	µg/L	n/v	n/v	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<1	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<1	<0.2
Thallium	µg/L	0.8 [B]	0.3_{s} [E]	<0.1	<0.1	<0.01	<0.01	<0.01	0.05	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01
Thorium	µg/L	n/v	n/v	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<1	<0.1
Tin	µg/L	n/v	n/v	<1	<1	<0.1	0.9	0.3	0.2	0.3	0.5	<0.1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<1	0.4
Titanium	µg/L	n/v	n/v	3	2	2.5	6.6	3.6	3.2	2.1	3.6	2.1	12	9	35	123	113	6.84	10.9	8.08	10.4	7	6.6
Tungsten	µg/L	n/v	30_{E} [E]	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<1	<0.1
Uranium	µg/L	33^{A} 15^{B}	5_{a} [E]	<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<1	<1	<1	<1	<1	0.074	0.08	0.071	0.062	<1	0.07
Vanadium	µg/L	n/v	6^{E}	<1	<1	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	1	1	2	5	5	0.63	0.9	0.8	0.79	<1	0.7
Yttrium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	1	-	-	-	-	<1	<1
Zinc	µg/L	37_{EQ1} [A] 7.0_{EQ2} [B]	30^{C} 20^{E}	4	7	8	16	14	10	15	10	10	**30** [E]	**31** [CE]	**54** [CE]	**36** [BCE]	**38** [CE]	3.2	3.6	<3	4.9	3	3
CCME Zinc Guideline (EQ1)				12.9	12.7	18.8	19	24.5	23.4	19.9	26.5	19.5	112.4	110.9	108	38.9	39.7	46.6	31.7	50.3	33.2	30.7	39.6
CCME Zinc Guideline (EQ2)				16.7	61.6	61.8	69.3	89.3	115.3	122.3	158.4	112.8	122.6	158.3	100.5	34.4	38.4	39	33.8	45.8	27.6	28.7	38
Zirconium	µg/L	n/v	4_{a} [E]	<1	<1	0.3	0.6	0.7	0.8	0.3	0.8	0.5	<1	<1	2	**8** [E]	**8** [E]	0.29	0.32	0.33	0.37	<1	0.7

See notes on last page

Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				MATR-01 (Continued)												MATR-02								MATR-REF
Sample Date				16-Jul-23	26-Aug-23	22-Sep-23	16-Oct-23	1-Nov-23	28-Oct-21	28-Oct-21	8-Jun-22	2-Sep-22	25-Oct-22	25-Oct-22	17-Feb-23	23-Mar-23	18-Apr-23	25-May-23	16-Jul-23	16-Oct-23	1-Nov-23	4-Dec-23	30-May-23
Sample ID				MATR-01	MATR-01	MATR-01	MATR-01	MATR-01	MATR-02	DUP-01	MAT-R-02	MATR02	MATR-02	MATR-02	MATR-02	MATR-02	MATR-02	MATR-02	MATR-02	MATR-02	MATR-02	MATR-02	MATR-02	MATR-REF
Sampling Company				UNKNOWN	UNKNOWN	STANTEC	STANTEC	STANTEC	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	STANTEC	UNKNOWN	UNKNOWN
Laboratory				TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	ALS	ALS	ALS	ALS	ALS	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK
Laboratory Work Order				506589	510587	513650	516043	517852	L2657407	L2657407	WT2205383	WT2213093	WT2219907	WT2219907	491080	493844	496175	500390	506589	516043	517852	520817	501084	501084
Laboratory Sample ID				1906646	1920988	1931819	1941584	1948017	L2657407-2	L2657407-3 Field Duplicate	WT2205383-002	WT2213093-002	WT2219907-001	WT2219907-009 Field Duplicate	1852153	1861884	1869717	1884830	1906647	1941586	1948018	1958005	1887384	1887384
Sample Type	Units	CCME	PWQO																					
Field Parameters																								
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	7.62	**5.31[BC]**	**5.48[BC]**	**5.21[BC]**	**6.48[BC]**	-	-	-	-	-	-	**6.39[BC]**	7.74	7.31	-	7.53	**5.4[BC]**	6.53	**5.48[BC]**	7.59
Temperature, Field	deg C	n/v	$30_{\mu6}$[C]	21.7	19.41	15.25	9.11	5.78	-	-	-	-	-	-	0	0.08	0.67	12.62	21.5	9.08	5.75	0.27	17.7
General Chemistry																								
Acidity as CaCO3	mg/L	n/v	n/v	6	<5	5	7	<5	3.5	-	<2.0	<2.0	<2.0	<2.0	8	-	<5	18	7	7	<5	<5	15
Alkalinity, Total	mg/L	n/v	n/v	55	57	46	49	42	63.6	-	38.3	28.6	36.5	33.9	49	52	45	37	55	46	44	46	43
Ammonia (as N)	mg/L	[B] TBC2	n/v	0.039	0.03	0.02	0.025	0.022	0.019	0.018	0.0203	0.0410	0.0140	0.0161	0.026	0.026	0.035	0.027	0.033	0.025	0.02	0.021	0.024
Bromide	mg/L	n/v	n/v	-	-	-	-	-	<0.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640[A] 120[B]	n/v	2.9	2.6	1.7	2.8	1.8	3.67	-	2.15	4.62	1.76	1.73	1.6	2.4	1.5	1.4	2.8	2.8	1.8	1.6	1.7
Chrysotile Asbestos (>0.5 um)	MFL	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.20	-
Chrysotile Asbestos (>10 um)	MFL	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.20	-
Cyanide	mg/L	0.0050[B]	n/v	-	-	-	-	-	<0.0020	-	<0.0020	<0.0020	<0.0020	<0.0020	-	-	-	-	-	-	-	-	-
Cyanide (Free)	mg/L	0.0050[B]	0.0050[C]	0.001	0.002	0.004	<0.001	<0.001	<0.0020	-	<0.0020	<0.0020	<0.0020	<0.0020	<0.001	0.003	0.004	-	-	-	-	0.002	-
Cyanide (Strong Acid Dissociable)	mg/L	0.0050[B]	n/v	0.002	<0.002	<0.002	0.003	<0.002	-	-	-	-	-	-	<0.002	0.002	0.004	-	-	-	-	<0.002	-
Cyanide (Weak Acid Dissociable)	mg/L	0.0050[B]	n/v	0.004	0.003	**0.008[B]**	<0.001	0.002	<0.0020	-	<0.0020	<0.0020	<0.0020	<0.0020	<0.001	0.002	0.002	-	-	-	-	<0.001	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	13	10	15.9	21.4	16.8	-	-	-	-	-	-	13	12	15.8	12.9	13	21.8	17	13.8	11.6
Electrical Conductivity, Lab	µS/cm	n/v	n/v	127	121	98	96	91	131	-	83.1	147	82.8	81.5	101	112	77	82	131	99	90	105	87
Fluoride	mg/L	0.12[B]	n/v	<0.05	<0.05	<0.05	<0.05	<0.05	0.035	-	0.030	0.035	0.024	0.026	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Hardness (as CaCO3)	mg/L	n/v	n/v	57.6	56.3	50.8	47.7	46.5	73.1	-	42.3	71.1	40.9	44.5	40.7	50.4	43.2	39.6	57.5	47.5	46.8	47.2	39
Nitrate (as N)	mg/L	124[A] 3.0[B]	n/v	<0.1	<0.1	<0.1	0.1	<0.1	0.1	-	0.076	0.087	0.032	0.037	0.1	0.2	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrite (as N)	mg/L	0.060[B]	n/v	<0.01	<0.01	0.02	<0.01	<0.01	<0.010	-	<0.010	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.04	<0.01
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	7.47	7.44	7.39	7.25	7.25	8.01	-	7.40	7.66	7.68	6.65	7.43	7.6	7.23	6.96	7.51	7.32	7.29	7.57	6.92
Phosphorus, Total	mg/L	n/v	0.030_{s4}[E]	0.016	0.017	0.018	0.018	0.014	0.018	0.018	0.0157	0.0158	0.0047	0.0119	0.016	0.017	**0.053[E]**	0.007	0.016	0.018	0.016	0.012	0.006
Radium-226	Bq/L	n/v	1[C]	-	-	-	-	-	0.0021	0.0022	-	-	-	-	-	-	-	-	-	-	-	0.009	-
Sulfate	mg/L	n/v	n/v	3.6	4.1	2.9	3.8	3.3	4.96	-	2.54	5.67	2.27	2.12	3.7	4.3	2	2.8	3.5	3.8	3.2	3.2	2.6
BC MECC Sulfate Guideline (s2)				218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218
Total Dissolved Solids	mg/L	n/v	n/v	15	85	125	20	80	86	-	66	83	90	85	110	75	90	75	<10	10	65	45	95
Total Suspended Solids	mg/L	[B] SN	n/v	3	3	3.5	3.3	3	4.1	-	6.4	<3.0	5.0	5.7	2.7	1	43.7	4.5	4	4	4	4	5

See notes on last page

Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				MATR-01 (Continued)					MATR-02													MATR-REF
Sample Date				16-Jul-23	26-Aug-23	22-Sep-23	16-Oct-23	1-Nov-23	28-Oct-21	28-Oct-21	8-Jun-22	2-Sep-22	25-Oct-22	25-Oct-22	17-Feb-23	23-Mar-23	18-Apr-23	25-May-23	16-Jul-23	16-Oct-23	1-Nov-23	4-Dec-23	30-May-23
Sample ID				MATR-01	MATR-01	MATR-01	MATR-01	MATR-01	MATR-02	DUP-01	MAT-R-02	MATR02	MATR-02	CNC-DUP-02	MATR-02	MATR-02	MATR-02	MATR-02	MATR-02	MATR-02	MATR-02	MATR-02	MATR-REF
Sampling Company				UNKNOWN	UNKNOWN	STANTEC	STANTEC	STANTEC	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	STANTEC	UNKNOWN
Laboratory				TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	ALS	ALS	ALS	ALS	ALS	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK
Laboratory Work Order				506589	510587	513650	516043	517852	L2657407	L2657407	WT2205383	WT2213093	WT2219907	WT2219907	491080	493844	496175	500390	506589	516043	517852	520817	501084
Laboratory Sample ID				1906646	1920988	1931819	1941584	1948017	L2657407-2	L2657407-3 Field Duplicate	WT2205383-002	WT2213093-002	WT2219907-001	WT2219907-009 Field Duplicate	1852153	1861884	1869717	1884830	1906647	1941586	1948018	1958005	1887384
Sample Type	Units	CCME	PWQO																				
Metals - Dissolved																							
Aluminum	µg/L	$5/100_{VAR1}$[B]	n/v	50	21	46	69	61	65.5	66.6	60.6	59.3	**106**[B]	**180**[B]	47	38	80	56	49	69	57	45	46
CWQG Aluminum Guideline				100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aluminum (0.2u)	µg/L	n/v	75^{E}	32	16	-	-	-	-	-	-	-	-	-	-	-	56	46	32	-	-	-	37
Antimony	µg/L	n/v	20^{E}	<0.1	0.1	1.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	0.7	0.9	0.6	0.5	0.4	0.78	0.76	0.48	0.9	0.51	0.54	<1	<1	<1	<1	0.7	0.5	0.4	0.4	0.5
Barium	µg/L	n/v	n/v	7.9	15.3	5	5.6	5.3	7.25	7.31	5.36	7.7	5.1	6.33	6	6	15	5	11.5	5.6	5.2	5.8	4.9
Beryllium	µg/L	n/v	$11/1,100_{s3}$[C]	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.1	<0.02	<0.02	<0.02	<0.02	<0.5	<0.5	<0.5	<0.5	<0.02	<0.02	<0.02	<0.02	<0.02
PWQO Beryllium Guideline				11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<1	<1	<1	<0.05	<0.05	<0.05	<0.05	<0.05
Boron	µg/L	$29,000^{A}$ $1,500^{B}$	200_{a}[E]	10	5	8	8	9	15	15	<10	15	<10	<10	<2	5	5	4	10	9	9	6	4
Cadmium	µg/L	1.0_{STB}[A] 0.09_{LTG}[B]	0.2^{C} $0.1/0.5_{s12}$[E]	0.01	0.008	0.01	0.01	0.01	0.0105	0.0108	0.0113	0.0101	0.0122	0.0146	**<0.1**	**<0.1**	**<0.1**	**<0.1**	0.01	0.02	0.01	0.01	0.01
CWQG Cadmium Guideline (STB)				1.2	1.17	1.05	0.99	0.96	1.53	0.89	0.88	1.48	0.85	0.92	0.84	1.05	0.89	0.82	1.2	0.99	0.97	0.98	0.81
CWQG Cadmium Guideline (LTG)				0.1	0.1	0.09	0.09	0.08	0.12	0.08	0.08	0.12	0.08	0.08	0.08	0.09	0.08	0.07	0.1	0.09	0.08	0.08	0.07
PWQO Cadmium Guideline				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	16,900	16,000	15,400	14,500	13,500	19,600	19,900	12,400	19,900	11,400	12,500	11,800	14,100	10,500	11,000	16,700	14,700	13,500	13,800	10,900
Cerium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cesium	µg/L	n/v	n/v	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.013	<1	<1	<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	µg/L	n/v	n/v	1	0.8	1.1	1	0.6	0.35	0.41	<0.5	<0.5	0.57	0.65	1	<1	<1	<1	0.9	1	0.9	3.7	0.3
Cobalt	µg/L	n/v	0.9^{E}	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.13	0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Copper	µg/L	2_{TBC1}[B]	5^{C} $1/5_{s13}$[E]	1.2	1.6	1.9	1.2	0.9	1.16	1.19	1	1.2	1.02	1.16	<1	<1	**10**[BCE]	1	**5.3**[BCE]	1.2	1	1.6	1.5
CCME Copper Guideline				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline				5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Europium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Gallium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Iron	µg/L	300^{B}	300^{C}	250	120	180	**320**[BC]	210	239	241	137	160	218	**344**[BC]	160	180	180	180	250	**330**[BC]	210	170	160
Lanthanum	µg/L	n/v	n/v	<1	<1	<1	<1	<1	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Lead	µg/L	1_{TBC1}[B]	$5/10/20/25_{s14}$[C] $1/3/5_{s15}$[E]	0.08	0.05	<0.05	0.06	<0.05	0.058	0.061	<0.05	0.094	0.068	0.148	<0.1	<0.1	0.1	0.1	0.07	0.05	<0.05	0.07	0.08
CCME Lead Guideline				1	1	1	1	1	2.1	1	1	2.1	1	1	1	1	1	1	1	1	1	1	1
PWQO Lead Guideline (s14)				20	20	20	20	20	20	10	10	10	10	10	20	20	20	10	20	20	20	20	20
PWQO Lead Guideline (s15)				3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Lithium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<5	<5	<5	<1	<1	<1	<1	<1
Magnesium	µg/L	n/v	n/v	3,690	3,520	3,470	3,640	3,290	5,100	5,070	2,750	5,200	3,030	3,220	2,740	3,190	2,290	2,520	3,650	3,630	3,270	3,130	2,490
Manganese	µg/L	$3,600_{EQ3}$[A] 430_{EQ4}[B]	n/v	2.7	11.5	9.1	12.6	10.4	16.3	16.3	9.56	4.66	10.4	20.9	7	5	28	6	2.2	12.4	10.6	11.1	4.5
CCME Manganese Guideline (EQ3)				4101	4019.6	3672.7	3475.2	3398.3	5055.5	3172.7	3127.3	4933.8	3036.2	3269.7	3023.2	3647.3	3185.6	2951.3	4094.8	3462.4	3417.6	3443.2	2912
CCME Manganese Guideline (EQ4)				490	490	490	380	380	320	350	380	430	350	330	380	430	380	350	430	380	380	350	350
Mercury	µg/L	0.026^{B}	0.2^{C}	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	-	0.000157	-	-	-	-	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***
Mercury (by CV)	µg/L	n/v	n/v	<0.01	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	0.07	<0.05	<0.05	0.08	0.12	0.134	0.132	0.089	0.132	0.072	0.071	<1	<1	<1	<1	0.08	0.07	0.08	0.13	0.14
Nickel	µg/L	25_{TBC1}[B]	25^{C}	0.9	0.6	0.6	0.7	0.5	0.57	0.56	<0.5	0.54	0.55	0.64	<1	<1	<1	<1	1	0.7	0.5	0.6	<0.5
CCME Nickel Guideline				25	25	25	25	25	75.3	25	25	73.8	25	25	25	25	25	25	25	25	25	25	25
Niobium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Phosphorus	µg/L	n/v	30_{s4}[E]	***<50***	***<50***	***<50***	***<50***	***<50***	<30	<30	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	**560**[E]	***<50***	***<50***
Potassium	µg/L	n/v	n/v	480	390	410	440	370	535	536	360	537	321	373	310	370	440	400	480	450	370	350	340
Rhodium	µg/L	n/v	n/v	<1	<1	-	<1	<1	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Rubidium	µg/L	n/v	n/v	1.2	1.1	1	1	1	1.33	1.36	1.09	1.24	0.88	1.02	<1	<1	<1	<1	1.2	1.1	0.9	0.8	0.9
Scandium	µg/L	n/v	n/v	2	<1	1	2	<1	-	-	-	-	-	-	<1	1	<1	1	2	2	<1	<1	1
Selenium	µg/L	1^{B}	100^{C}	<0.05	0.95	0.1	0.08	0.11	0.083	0.073	0.099	0.124	0.108	0.108	<0.2	<0.5	<0.2	<0.5	<0.05	<0.05	0.14	<0.05	0.07
Silicon	µg/L	n/v	n/v	3,010	1,430	2,960	2,350	2,450	2,760	2,730	2,130	2,360	2,280	2,520	2,300	3,000	1,500	2,700	2,970	2,370	2,470	2,330	1,870
Silver	µg/L	0.25^{B}	0.1^{C}	<0.01	0.08	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01
Sodium	µg/L	n/v	n/v	2,660	2,160	1,940	2,190	1,870	3,250	3,320	2,080	3,740	1,670	1,690	1,590	2,200	1,280	1,600	2,610	2,250	1,850	1,880	1,510
Strontium	µg/L	n/v	n/v	24.3	25.4	21.5	21.4	20.8	33.4	33.9	20	35.5	20.2	20.5	21	18	13	17	24.1	22	20.7	19.8	15.4
Sulfur	µg/L	n/v	n/v	3,200	2,100	4,000	1,600	2,700	1,810	2,010	850	2,160	940	860	870	<800	<800	<800	3,400	1,900	2,800	1,600	<500
Tellurium	µg/L	n/v	n/v	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/L	0.8^{B}	0.3_{s}[E]	<0.01	0.02	0.09	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01
Thorium	µg/L	n/v	n/v	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1
Tin	µg/L	n/v	n/v	<0.1	0.4	0.2	0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<1	<1	<0.1	0.2	0.2	<0.1	1.6
Titanium	µg/L	n/v	n/v	2.1	0.8	1.7	2.4	1.5	1.85	1.88	1.21	1.96	2.17	5.06	<1	1	3	2	2.2	2.1	3.4	1.1	1.3
Tungsten	µg/L	n/v	30_{E}[E]	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1
Uranium	µg/L	33^{A} 15^{B}	5_{a}[E]	0.05	0.05	0.05	0.05	0.05	0.075	0.073	0.072	0.065	0.047	0.051	<1	<1	<1	<1	0.05	0.05	0.05	0.05	0.05
Vanadium	µg/L	n/v	6^{E}	0.6	0.5	0.6	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<1	<1	<1	<1	0.7	0.5	<0.5	<0.5	<0.5
Yttrium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Zinc	µg/L	37_{EQ1}[A] 7.0_{EQ2}[B]	30^{C} 20^{E}	<1	4	2	3	2	1.9	2.1	1.6	1.9	3.2	4.1	1	1	5	3	2	4	4	3	5
CCME Zinc Guideline (EQ1)				41.8	41	37.6	35.7	35	51	32.8	32.3	49.8	31.4	33.7	31.3	37.4	32.9	30.6	41.7	35.6	35.1	35.4	30.2
CCME Zinc Guideline (EQ2)				29.9	27	30.7	36.4	32.3	34.1	55.3	33.4	44.2	25.7	64.6	22.2	22.9	29.9	31.6	28.9	34.5	31.6	23.3	30.9
Zirconium	µg/L	n/v	4_{a}[E]	0.5	0.5	0.7	0.6	0.4	0.25	0.28	<0.3	<0.3	<0.3	0.33	<1	<1	<1	<1	0.6	0.6	0.4	0.3	0.4

See notes on last page

Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				MATR-01 (Continued)					MATR-02														MATR-REF
Sample Date				16-Jul-23	26-Aug-23	22-Sep-23	16-Oct-23	1-Nov-23	28-Oct-21	28-Oct-21	8-Jun-22	2-Sep-22	25-Oct-22	25-Oct-22	17-Feb-23	23-Mar-23	18-Apr-23	25-May-23	16-Jul-23	16-Oct-23	1-Nov-23	4-Dec-23	30-May-23
Sample ID				MATR-01	MATR-01	MATR-01	MATR-01	MATR-01	MATR-02	DUP-01	MAT-R-02	MATR02	MATR-02	CNC-DUP-02	MATR-02	MATR-02	MATR-02	MATR-02	MATR-02	MATR-02	MATR-02	MATR-02	MATR-REF
Sampling Company				UNKNOWN	UNKNOWN	STANTEC	STANTEC	STANTEC	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	STANTEC	UNKNOWN
Laboratory				TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	ALS	ALS	ALS	ALS	ALS	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK
Laboratory Work Order				506589	510587	513650	516043	517852	L2657407	L2657407	WT2205383	WT2213093	WT2219907	WT2219907	491080	493844	496175	500390	506589	516043	517852	520817	501084
Laboratory Sample ID				1906646	1920988	1931819	1941584	1948017	L2657407-2	L2657407-3 Field Duplicate	WT2205383-002	WT2213093-002	WT2219907-001	WT2219907-009 Field Duplicate	1852153	1861884	1869717	1884830	1906647	1941586	1948018	1958005	1887384
Sample Type	Units	CCME	PWQO																				
Metals - Total																							
Aluminum	µg/L	$5/100_{VAR1}$[B]	n/v	**169**[B]	**134**[B]	**185**[B]	**172**[B]	**116**[B]	**225**[B]	**218**[B]	**318**[B]	**225**[B]	**315**[B]	**303**[B]	79	82	**1,310**[B]	**254**[B]	**108**[B]	**144**[B]	**142**[B]	**120**[B]	**124**[B]
CWQG Aluminum Guideline				100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Antimony	µg/L	n/v	20^{E}	0.1	0.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	0.1	<0.1	<0.1	<0.1	<0.1
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	0.7	0.9	1.2	0.5	0.4	0.85	0.87	0.59	0.94	0.62	0.64	<1	<1	<1	<1	0.7	0.5	0.4	0.4	0.4
Barium	µg/L	n/v	n/v	7.3	6.2	6.2	6.4	5.7	8.77	8.65	7.14	8.83	7.02	7.05	6	6	13	6	7.2	6.3	5.9	5.7	5
Beryllium	µg/L	n/v	$11/1,100_{s3}$[C]	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.1	<0.02	<0.02	<0.02	<0.02	<0.5	<0.5	<0.5	<0.5	<0.02	<0.02	<0.02	<0.02	<0.02
Beryllium	µg/L	n/v	$11/1,100_{s3}$[C]	<0.02	<0.02	0.02	<0.02	<0.02	<0.1	<0.1	<0.02	<0.02	<0.02	<0.02	<0.5	<0.5	<0.5	<0.5	<0.02	<0.02	<0.02	<0.02	<0.02
PWQO Beryllium Guideline				11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<1	<1	<1	<0.05	<0.05	<0.05	<0.05	<0.05
Boron	µg/L	$29,000^{A}$ $1,500^{B}$	200_{a}^{E}	10	4	7	8	9	13	13	<10	15	<10	<10	<2	4	5	4	9	8	9	4	5
Cadmium	µg/L	1.0_{STB}[A] 0.09_{LTG}[B]	0.2^{C} $0.1/0.5_{s12}$[E]	0.02	0.01	0.01	0.02	0.01	0.0171	0.0134	0.0146	0.015	0.0181	0.0143	<0.02	<0.02	0.05	0.02	0.01	0.02	0.01	0.02	0.01
CWQG Cadmium Guideline (STB)				1.2	1.17	1.05	0.99	0.96	1.53	0.89	0.88	1.48	0.85	0.92	0.84	1.05	0.89	0.82	1.2	0.99	0.97	0.98	0.81
CWQG Cadmium Guideline (LTG)				0.1	0.1	0.09	0.09	0.08	0.12	0.08	0.08	0.12	0.08	0.08	0.08	0.09	0.08	0.07	0.1	0.09	0.08	0.08	0.07
PWQO Cadmium Guideline				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	16,400	16,400	14,800	14,500	13,600	20,700	19,300	12,200	19,300	12,700	12,800	11,700	14,200	12,600	11,000	16,200	15,100	13,400	13,700	10,800
Cerium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	-	-	-	-	-	-	<1	<1	3	<1	<1	<1	<1	<1	<1
Cesium	µg/L	n/v	n/v	0.02	0.01	0.02	0.01	<0.01	0.019	0.02	0.034	0.023	0.028	0.028	<1	<1	<1	<1	0.01	<0.01	0.01	0.01	0.01
Chromium	µg/L	n/v	n/v	1	0.9	1.1	0.9	0.7	0.7	0.7	0.89	0.83	0.91	0.89	<1	<1	3	1	0.9	0.8	0.9	0.7	0.1
Cobalt	µg/L	n/v	0.9^{E}	0.1	0.1	0.2	<0.1	<0.1	0.16	0.17	0.23	0.17	0.18	0.18	0.1	0.1	0.7	0.2	0.1	<0.1	<0.1	0.1	0.1
Copper	µg/L	2_{TBC1}[B]	5^{C} $1/5_{s13}$[E]	1.2	1.1	2	1.3	1	1.75	1.56	1.3	1.47	1.25	1.31	2	<1	**3**[B]	1	1.2	1.3	1.4	0.9	0.8
CCME Copper Guideline				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline				5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Europium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Gallium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Iron	µg/L	300^{B}	300^{C}	**390**[BC]	250	**340**[BC]	**460**[BC]	290	**442**[BC]	**452**[BC]	**472**[BC]	**387**[BC]	**493**[BC]	**478**[BC]	231	268	**1,400**[BC]	**380**[BC]	**340**[BC]	**440**[BC]	**330**[BC]	270	260
Lanthanum	µg/L	n/v	n/v	<1	<1	<1	<1	<1	-	-	-	-	-	-	<1	<1	1	<1	<1	<1	<1	<1	<1
Lead	µg/L	1_{TBC1}[B]	$5/10/20/25_{s14}$[C] $1/3/5_{s15}$[E]	0.12	0.08	0.15	0.14	0.1	0.142	0.142	0.191	0.158	0.19	0.184	<0.1	<0.1	0.7	0.2	0.11	0.15	0.19	0.08	0.11
CCME Lead Guideline				1	1	1	1	1	2.1	1	1	2.1	1	1	1	1	1	1	1	1	1	1	1
PWQO Lead Guideline (s14)				20	20	20	20	20	20	10	10	10	10	10	20	20	20	10	20	20	20	20	20
PWQO Lead Guideline (s15)				3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Lithium	µg/L	n/v	n/v	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<5	<5	<5	<1	<1	<1	<1	<1
Magnesium	µg/L	n/v	n/v	3,600	3,700	3,460	3,640	3,330	5,180	5,030	2,850	5,030	3,050	3,060	2,710	3,240	3,310	2,580	3,490	3,630	3,290	3,130	2,500
Manganese	µg/L	$3,600_{EQ3}$[A] 430_{EQ4}[B]	n/v	18.1	26.1	26	22.6	19.1	28.6	28.9	29.9	32.2	22.4	22.4	12	11	58	16	17.8	23.2	19.6	15.1	15
CCME Manganese Guideline (EQ3)				4101	4019.6	3672.7	3475.2	3398.3	5055.5	3172.7	3127.3	4933.8	3036.2	3269.7	3023.2	3647.3	3185.6	2951.3	4094.8	3462.4	3417.6	3443.2	2912
CCME Manganese Guideline (EQ4)				490	490	490	380	380	320	350	380	430	350	330	380	430	380	350	430	380	380	350	350
Mercury	µg/L	0.026^{B}	0.2^{C}	-	-	<0.01	<0.01	<0.01	-	-	-	-	-	-	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	<0.01	***<0.1***
Mercury (Trace)	ng/L	n/v	n/v	2.26	1.21	2.93	3.11	1.63	2.16	2.01	6.89	2.09	4.62	3.34	2.74	2	5.48	-	-	-	-	1.94	-
Mercury (by CV)	ng/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl Mercury	ng/L	4^{B}	n/v	0.00011	0.00002	0.00011	0.00012	0.00014	-	-	0.000126	0.000058	0.000086	0.000086	-	-	-	-	-	-	-	0.0001	-
Molybdenum	µg/L	73^{B}	40^{E}	0.23	0.59	<0.05	0.08	0.08	0.152	0.131	0.104	0.133	0.078	0.083	<1	<1	<1	<1	0.2	0.06	0.16	0.12	0.1
Nickel	µg/L	25_{TBC1}[B]	25^{C}	0.6	0.6	0.7	0.7	<0.5	1.25	1.16	0.83	0.76	0.83	0.81	<1	<1	2	<1	<0.5	0.6	<0.5	<0.5	<0.5
CCME Nickel Guideline				25	25	25	25	25	75.3	25	25	73.8	25	25	25	25	25	25	25	25	25	25	25
Niobium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Phosphorus	µg/L	n/v	30_{s4}^{E}	-	-	-	-	-	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	-	-	-	-	-	-	-	-	-
Potassium	µg/L	n/v	n/v	490	420	460	470	370	585	573	428	577	410	416	300	370	780	400	460	460	400	350	340
Rhodium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Rubidium	µg/L	n/v	n/v	1.4	1.3	1.2	1.2	1	1.41	1.53	1.53	1.65	1.32	1.36	<1	1	3	1	1.3	1.1	1	0.9	1
Scandium	µg/L	n/v	n/v	2	<1	1	2	1	-	-	-	-	-	-	<1	1	2	2	2	2	1	1	1
Selenium	µg/L	1^{B}	100^{C}	0.21	0.74	0.07	0.22	0.15	0.117	0.116	0.098	0.111	0.118	0.12	0.2	<0.5	<0.2	<0.5	0.12	0.15	0.07	0.16	0.14
Silicon	µg/L	n/v	n/v	3,100	1,720	3,170	2,560	2,560	2,960	2,950	2,750	2,640	2,970	2,770	2,400	3,100	3,500	3,100	2,940	2,470	2,600	2,480	1,970
Silver	µg/L	0.25^{B}	0.1^{C}	<0.01	<0.01	<0.01	0.03	<0.01	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.01	0.02	<0.01	0.01	<0.01
Sodium	µg/L	n/v	n/v	2,630	2,270	2,080	2,180	1,880	3,370	3,440	2,220	3,830	1,770	1,750	1,510	2,220	1,420	1,600	2,520	2,310	1,970	1,860	1,490
Strontium	µg/L	n/v	n/v	23.9	26.4	21.6	21.7	21.1	33.8	33.5	20.8	33.7	20.7	20.7	21	18	17	17	23.5	23.2	20.6	19.4	15.4
Sulfur	µg/L	n/v	n/v	3,100	2,300	3,900	1,700	2,700	1,800	1,780	1,000	1,950	980	920	1,000	<800	<800	<800	3,200	1,600	2,700	1,700	<500
Tellurium	µg/L	n/v	n/v	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/L	0.8^{B}	0.3_{b}^{E}	<0.01	0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01
Thorium	µg/L	n/v	n/v	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1
Tin	µg/L	n/v	n/v	<0.1	0.4	0.4	0.2	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<1	<1	<0.1	0.2	0.2	<0.1	1.8
Titanium	µg/L	n/v	n/v	6.8	4.9	6.6	5.4	2.9	7.41	7.42	11.6	8.28	10.4	10.3	2	2	56	9	4.6	4.3	4	3.3	4.7
Tungsten	µg/L	n/v	30_{a}^{E}	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1
Uranium	µg/L	33^{A} 15^{B}	5_{a}^{E}	0.07	0.05	0.06	0.05	0.05	0.077	0.075	0.081	0.075	0.062	0.059	<1	<1	<1	<1	0.07	0.05	0.06	0.06	0.05
Vanadium	µg/L	n/v	6^{E}	0.8	0.6	0.7	0.6	<0.5	0.67	0.64	0.9	0.82	0.8	0.76	<1	<1	3	<1	0.7	0.6	<0.5	<0.5	<0.5
Yttrium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	-	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1
Zinc	µg/L	37_{EQ1}[A] 7.0_{EQ2}[B]	30^{C} 20^{E}	2	7	3	5	4	4.2	3.5	3.8	3.2	4.1	4.3	2	2	9	4	2	5	4	2	2
CCME Zinc Guideline (EQ1)				41.8	41	37.6	35.7	35	51	32.8	32.3	49.8	31.4	33.7	31.3	37.4	32.9	30.6	41.7	35.6	35.1	35.4	30.2
CCME Zinc Guideline (EQ2)				29.9	27	30.7	36.4	32.3	34.1	55.3	33.4	44.2	25.7	64.6	22.2	22.9	29.9	31.6	28.9	34.5	31.6	23.3	30.9
Zirconium	µg/L	n/v	4_{a}^{E}	1	0.8	1	0.8	0.4	0.33	0.31	0.33	0.35	0.34	0.33	<1	<1	4	<1	0.9	0.8	0.4	0.4	0.4

See notes on last page

Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				MATR-REF (Continued)						NDR-C40R	NDRP07			NDRS01					NDRS02				
Sample Date				20-Jun-23	19-Jul-23	14-Aug-23	21-Sep-23	16-Oct-23	14-Nov-23	1-Jun-22	1-Jun-22	30-Aug-22	15-Oct-22	8-Aug-21	23-Oct-21	29-May-22	18-Sep-22	23-Oct-22	11-Aug-21	22-Oct-21	7-Jun-22	30-Aug-22	17-Oct-22
Sample ID				MATR-REF	MATR-REF	MATR-REF	MATR-REF	MATR-REF	MATR-REF	NDR-C40R	NDR-P-07	NDRP07	NDR-P-07	NDR-S-01	NDR-S-01	NDR-S-01	NDR-S-01	NDR-S-01	NDR-S-02	NDR-S-02	NDR-S-02	NDRS02	NDR-S-02
Sampling Company				UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS
Laboratory Work Order				503549	506589	509147	513650	516043	519511	WT2204941	WT2204941	WT2213095	WT2218393	L2625067	L2655497	L2711537	WT2215061	WT2219907	L2626399	L2655497	WT2205411	WT2213095	WT2219907
Laboratory Sample ID				1896032	1906645	1916180	1931821	1941583	1953844	WT2204941-005	WT2204941-001	WT2213095-010	WT2218393-006	L2625067-5	L2655497-3	L2711537-3	WT2215061-006	WT2219907-012	L2626399-1	L2655497-2	WT2205411-006	WT2213095-011	WT2219907-013
Sample Type	Units	CCME	PWQO																				
Field Parameters																							
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	7.2	**5.98[BC]**	**6.15[BC]**	**5.24[BC]**	**5[BC]**	7.53	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Temperature, Field	deg C	n/v	30_{96}[C]	21.59	21.63	20.65	15.19	8.76	2.65	-	-	-	-	-	-	-	-	-	-	-	-	-	-
General Chemistry																							
Acidity as CaCO3	mg/L	n/v	n/v	6	5	9	<5	7	<5	2.7	5.0	4.4	10.0	9	9.8	10.5	4.6	3.9	4.8	6	<2.0	6.3	<2.0
Alkalinity, Total	mg/L	n/v	n/v	54	62	57	44	52	40	34.6	6.6	8.7	4.4	27.4	24.4	11.7	25.0	11.2	63.7	39.1	30.9	52.2	35.5
Ammonia (as N)	mg/L	[B] TBC2	n/v	0.034	0.028	0.028	0.018	0.024	0.024	0.0249	0.0095	0.0231	0.0182	<0.010	0.02	0.015	0.0240	0.0309	0.025	0.022	0.0216	0.0289	0.0415
Bromide	mg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	-	-
Chloride	mg/L	640[A] 120[B]	n/v	2.1	3.1	2.6	1.6	2.7	2.2	3.12	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	5.94	8.16	3.17	3.37	2.98
Chrysotile Asbestos (>0.5 um)	MFL	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysotile Asbestos (>10 um)	MFL	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide	mg/L	0.0050[B]	n/v	-	-	-	-	-	-	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0022	<0.0020	<0.0020	0.0022	<0.0020	0.0021	<0.0020	<0.0020	<0.0020
Cyanide (Free)	mg/L	0.0050[B]	0.0050[C]	-	-	-	-	-	-	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Cyanide (Strong Acid Dissociable)	mg/L	0.0050[B]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide (Weak Acid Dissociable)	mg/L	0.0050[B]	n/v	-	-	-	-	-	-	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0022	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	10.6	12.4	10	15.9	21.2	<0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Electrical Conductivity, Lab	µS/cm	n/v	n/v	110	134	126	103	112	95	77.6	27.6	40.1	31.3	56.9	57.2	38.5	56.5	41.7	141	105	72.5	116	86.0
Fluoride	mg/L	0.12[B]	n/v	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.020	<0.020	<0.020	<0.020	0.021	<0.020	<0.020	<0.020	<0.020	0.03	0.021	0.020	0.024	<0.020
Hardness (as CaCO3)	mg/L	n/v	n/v	53.3	60.7	58.4	51.4	47.8	46.4	42.0	20.6	29.7	21.9	37.1	41.1	28.7	36.7	31.4	68.9	53.4	42.6	61.6	51.0
Nitrate (as N)	mg/L	124[A] 3.0[B]	n/v	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.020	<0.020	<0.020	<0.020	<0.020	0.023	0.034	0.047	0.026	<0.020	0.049	<0.020	<0.020	0.021
Nitrite (as N)	mg/L	0.060[B]	n/v	<0.01	<0.01	0.04	0.02	<0.01	0.04	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	7.39	7.63	7.59	7.58	7.82	7.34	7.44	**6.15[BC]**	6.55	**5.63[BC]**	6.85	6.58	**6.40[BC]**	7.08	6.50	7.53	6.88	7.13	7.60	7.38
Phosphorus, Total	mg/L	n/v	0.030_{94}[E]	0.008	0.015	0.012	0.018	0.018	0.008	0.0289	0.0106	0.0093	0.0047	0.0229	0.0243	0.0117	0.0195	0.0119	0.0243	0.0292	0.0158	0.0146	0.0129
Radium-226	Bq/L	n/v	1[C]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	3.1	3.8	3.2	2.8	4	3.9	<0.30	<0.30	<0.30	<0.30	<0.30	1.45	<0.30	<0.30	<0.30	<0.30	1.03	<0.30	<0.30	<0.30
BC MECC Sulfate Guideline (s2)				218	218	218	218	218	218	218	128	128	128	218	218	128	218	218	218	218	218	218	218
Total Dissolved Solids	mg/L	n/v	n/v	65	75	85	75	80	95	102	70	97	87	117	150	79	101	104	128	160	93	108	137
Total Suspended Solids	mg/L	[B] SN	n/v	3	3.7	2.7	2.7	4	3	12.8	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	3.3	<3.0	9.2	10.8	3.4

See notes on last page

Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				MATR-REF (Continued)						NDR-C40R	NDRP07			NDRS01					NDRS02				
Sample Date				20-Jun-23	19-Jul-23	14-Aug-23	21-Sep-23	16-Oct-23	14-Nov-23	1-Jun-22	1-Jun-22	30-Aug-22	15-Oct-22	8-Aug-21	23-Oct-21	29-May-22	18-Sep-22	23-Oct-22	11-Aug-21	22-Oct-21	7-Jun-22	30-Aug-22	17-Oct-22
Sample ID				MATR-REF	MATR-REF	MATR-REF	MATR-REF	MATR-REF	MATR-REF	NDR-C40R	NDR-P-07	NDRP07	NDR-P-07	NDR-S-01	NDR-S-01	NDR-S-01	NDR-S-01	NDR-S-01	NDR-S-01	NDR-S-02	NDR-S-02	NDRS02	NDR-S-02
Sampling Company				UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS
Laboratory Work Order				503549	506589	509147	513650	516043	519511	WT2204941	WT2204941	WT2213095	WT2218393	L2625067	L2655497	L2711537	WT2215061	WT2219907	L2626399	L2655497	WT2205411	WT2213095	WT2219907
Laboratory Sample ID				1896032	1906645	1916180	1931821	1941583	1953844	WT2204941-005	WT2204941-001	WT2213095-010	WT2218393-006	L2625067-5	L2655497-3	L2711537-3	WT2215061-006	WT2219907-012	L2626399-1	L2655497-2	WT2205411-006	WT2213095-011	WT2219907-013
Sample Type	Units	CCME	PWQO																				
Metals - Dissolved																							
Aluminum	µg/L	$5/100_{VAR1}$[B]	n/v	52	34	22	43	96	43	**156**[B]	**90.2**[B]	**86**[B]	**86.2**[B]	**145**[B]	**312**[B]	**240**[B]	**181**[B]	**229**[B]	36.3	**203**[B]	**167**[B]	75.2	**171**[B]
CWQG Aluminum Guideline				100	100	100	100	100	100	100	5	5	5	100	5	5	100	5	100	100	100	100	100
Aluminum (0.2u)	µg/L	n/v	75^{E}	41	27	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Antimony	µg/L	n/v	20^{E}	<0.1	<0.1	0.2	0.3	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	0.1	0.8	0.6	0.5	0.5	0.3	0.88	0.81	1.16	0.9	1.1	1.26	0.89	1.03	0.96	0.99	1.13	0.96	1.1	0.91
Barium	µg/L	n/v	n/v	15.8	15.8	12.7	5	5.7	4.7	5.69	3.32	3.59	3.32	4.16	5.95	4.59	5.07	4.82	5.96	6.75	6.39	6.26	6.4
Beryllium	µg/L	n/v	$11/1,100_{s3}$[C]	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.1	<0.1	<0.2	<0.02	<0.1	<0.1	<0.02	<0.02	<0.02
PWQO Beryllium Guideline				11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Boron	µg/L	$29,000^{A}$ $1,500^{B}$	200_{a}[E]	9	13	8	8	9	6	<10	<10	<10	<10	<10	<10	<10	<100	<10	<10	<10	<10	<10	<10
Cadmium	µg/L	1.0_{STB}[A] 0.09_{LTG}[B]	0.2^{C} $0.1/0.5_{s12}$[E]	0.01	0.009	0.007	0.008	0.03	0.02	0.0179	0.023	0.0121	0.022	0.0092	0.0256	0.0288	<0.05	0.0279	0.0052	0.0186	0.0234	0.0088	0.016
CWQG Cadmium Guideline (STB)				1.11	1.26	1.22	1.07	0.99	0.96	0.87	0.42	0.61	0.45	0.77	0.85	0.59	0.76	0.65	1.44	1.11	0.88	1.28	1.06
CWQG Cadmium Guideline (LTG)				0.09	0.1	0.1	0.09	0.09	0.08	0.08	0.04	0.06	0.04	0.07	0.08	0.06	0.07	0.06	0.12	0.09	0.08	0.11	0.09
PWQO Cadmium Guideline				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	15,800	17,800	16,300	15,300	15,100	13,000	11,400	5,250	7,720	5,810	11,500	12,100	8,320	10,700	9,060	19,200	15,100	12,400	17,500	14,300
Cerium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cesium	µg/L	n/v	n/v	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	µg/L	n/v	n/v	0.8	1.1	0.8	1.1	1	0.5	<0.5	<0.5	0.51	<0.5	0.59	0.86	0.58	<5	0.66	0.35	0.62	0.56	<0.5	0.58
Cobalt	µg/L	n/v	0.9^{E}	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.11	<0.1	<0.1	<0.1	0.21	0.13	0.1	***<1***	<0.1	0.18	0.17	0.16	0.17	0.14
Copper	µg/L	2_{TBC1}[B]	5^{C} $1/5_{s13}$[E]	1.6	2	**5.7**[BCE]	1.2	1.6	1.4	1.1	**1.05**[E]	0.24	0.37	0.34	1.51	1.5	<2	1.28	0.42	1.08	1.06	0.48	0.78
CCME Copper Guideline				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline				5	5	5	5	5	5	5	1	5	5	5	5	5	5	5	5	5	5	5	5
Europium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gallium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron	µg/L	300^{B}	300^{C}	280	260	120	180	**330**[BC]	180	**333**[BC]	222	**366**[BC]	**333**[BC]	**478**[BC]	**656**[BC]	**325**[BC]	**513**[BC]	**500**[BC]	243	**652**[BC]	**433**[BC]	**417**[BC]	**585**[BC]
Lanthanum	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	µg/L	1_{TBC1}[B]	$5/10/20/25_{s14}$[C] $1/3/5_{s15}$[E]	0.1	0.07	<0.05	0.05	0.06	<0.05	0.112	0.445	0.146	0.536	0.081	0.226	0.16	<0.5	0.162	0.072	0.159	0.175	0.123	0.152
CCME Lead Guideline				1	1.7	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1.7	1
PWQO Lead Guideline (s14)				20	20	20	20	20	10	10	5	5	5	10	10	5	10	5	20	10	10	20	10
PWQO Lead Guideline (s15)				3	3	3	3	3	3	3	1	1	1	3	3	1	3	3	3	3	3	3	3
Lithium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1
Magnesium	µg/L	n/v	n/v	3,170	3,880	3,710	3,430	3,740	3,140	3,280	1,820	2,540	1,800	2,930	3,100	1,910	2,430	2,130	5,520	4,130	2,840	4,350	3,710
Manganese	µg/L	$3,600_{EQ3}$[A] 430_{EQ4}[B]	n/v	3.2	1.9	2.9	13.2	12.5	9.2	80.1	23.8	13.1	29.4	54.8	14.9	16.3	27.8	10	168	50.3	65.1	99.2	57.7
CCME Manganese Guideline (EQ3)				3831	4294.2	4151	3710.8	3481.6	3391.9	3107.8	1970.8	2292.6	1970.8	2787.1	3049.3	2224.7	2760.7	2407.4	4799.5	3837.3	3146.8	4350	3685.4
CCME Manganese Guideline (EQ4)				490	430	430	430	320	380	380	290	330	290	350	330	310	380	330	430	490	380	430	490
Mercury	µg/L	0.026^{B}	0.2^{C}	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	-	-	-	-	0.000218	0.000498	-	-	-	0.000102	0.000355	-	-	-
Mercury (by CV)	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	0.17	0.08	0.48	<0.05	0.1	0.38	0.052	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	0.063	0.059	0.055	0.06	<0.05
Nickel	µg/L	25_{TBC1}[B]	25^{C}	1.4	1.1	<0.5	0.6	0.7	<0.5	0.56	<0.5	<0.5	<0.5	0.59	1.02	0.76	<5	0.78	0.52	0.76	0.65	0.56	0.63
CCME Nickel Guideline				25	65.4	25	25	25	25	25	25	25	25	25	25	25	25	25	72	25	25	66.1	25
Niobium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus	µg/L	n/v	30_{s4}[E]	***<50***	***<50***	***<50***	***<50***	**530**[E]	***<50***	***<50***	***<50***	***<50***	***<50***	<30	<30	***<50***	***<500***	***<50***	<30	<30	***<50***	***<50***	***<50***
Potassium	µg/L	n/v	n/v	640	480	410	410	460	340	203	148	52	<50	<50	102	<50	<500	78	222	287	151	340	226
Rhodium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rubidium	µg/L	n/v	n/v	1.2	1.2	1.2	1	1.1	0.9	0.62	0.36	0.22	<0.2	<0.2	0.51	0.2	<2	0.38	0.75	0.97	0.53	1.14	0.62
Scandium	µg/L	n/v	n/v	1	2	<1	1	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	µg/L	1^{B}	100^{C}	0.08	0.11	<0.05	<0.05	0.08	<0.05	0.172	0.164	0.174	0.147	0.157	0.23	0.184	<0.5	0.176	0.104	0.169	0.175	0.15	0.151
Silicon	µg/L	n/v	n/v	2,330	2,880	1,700	2,890	2,450	2,290	528	447	1,530	1,070	1,590	2,440	197	2,100	1,540	1,360	2,560	480	1,880	1,710
Silver	µg/L	0.25^{B}	0.1^{C}	0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sodium	µg/L	n/v	n/v	2,090	2,790	2,410	1,960	2,250	2,030	2,730	825	501	502	397	780	629	<500	587	4,760	5,050	2,700	3,070	2,730
Strontium	µg/L	n/v	n/v	19.8	25.2	24	22	22.3	19.4	19.9	9.64	15	9.74	22.8	21.8	16.6	20	16.4	37.9	29.6	22.6	31.8	26
Sulfur	µg/L	n/v	n/v	4,300	3,100	1,100	4,100	1,900	1,200	<500	<500	<500	<500	<500	1,090	<500	<5,000	<500	680	860	<500	<500	<500
Tellurium	µg/L	n/v	n/v	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/L	0.8^{B}	0.3_{s}[E]	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Thorium	µg/L	n/v	n/v	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tin	µg/L	n/v	n/v	0.4	<0.1	0.4	0.2	0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Titanium	µg/L	n/v	n/v	1.8	1.5	0.8	1.8	4.2	1.2	4	1.44	1.38	0.89	2.19	6.11	3.31	<3	3.07	1.31	4.3	3.63	2.48	3
Tungsten	µg/L	n/v	30_{a}[E]	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Uranium	µg/L	33^{A} 15^{B}	5_{a}[E]	0.07	0.05	0.06	0.05	0.05	0.06	0.038	0.014	<0.01	<0.01	0.017	0.022	0.025	<0.1	0.023	0.032	0.028	0.039	0.031	0.033
Vanadium	µg/L	n/v	6^{E}	0.5	0.7	<0.5	0.6	0.6	<0.5	0.58	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<5	<0.5	<0.5	0.52	0.53	<0.5	<0.5
Yttrium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	37_{EQ1}[A] 7.0_{EQ2}[B]	30^{C} 20^{E}	4	4	3	2	3	2	4.5	10.7	8.5	5.8	4.5	8.7	8	11.1	7.4	**30.3**[CE]	6	8.6	4.3	5.4
CCME Zinc Guideline (EQ1)				39.2	43.7	42.3	38	35.8	34.9	32.1	17.7	24.1	18.7	29	31.5	23.4	28.7	25.2	48.5	39.2	32.5	44.2	37.8
CCME Zinc Guideline (EQ2)				27.3	27	24.7	26.6	22.9	6.8	32.1	46.8	47.8	75.8	46.2	63.4	52.2	37.9	52.4	47.7	63.6	41.9	40.5	40.5
Zirconium	µg/L	n/v	4_{a}[E]	0.4	0.5	0.5	0.8	0.7	0.4	0.34	<0.3	<0.3	<0.3	0.29	0.53	0.41	<3	0.37	0.23	0.38	0.37	0.31	<0.3

See notes on last page

Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				MATR-REF (Continued)						NDR-C40R	NDRP07			NDRS01					NDRS02				
Sample Date				20-Jun-23	19-Jul-23	14-Aug-23	21-Sep-23	16-Oct-23	14-Nov-23	1-Jun-22	1-Jun-22	30-Aug-22	15-Oct-22	8-Aug-21	23-Oct-21	29-May-22	18-Sep-22	23-Oct-22	11-Aug-21	22-Oct-21	7-Jun-22	30-Aug-22	17-Oct-22
Sample ID				MATR-REF	MATR-REF	MATR-REF	MATR-REF	MATR-REF	MATR-REF	NDR-C40R	NDR-P-07	NDRP07	NDR-P-07	NDR-S-01	NDR-S-01	NDR-S-01	NDR-S-01	NDR-S-01	NDR-S-01	NDR-S-02	NDR-S-02	NDRS02	NDR-S-02
Sampling Company				UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS
Laboratory Work Order				503549	506589	509147	513650	516043	519511	WT2204941	WT2204941	WT2213095	WT2218393	L2625067	L2655497	L2711537	WT2215061	WT2219907	L2626399	L2655497	WT2205411	WT2213095	WT2219907
Laboratory Sample ID				1896032	1906645	1916180	1931821	1941583	1953844	WT2204941-005	WT2204941-001	WT2213095-010	WT2218393-006	L2625067-5	L2655497-3	L2711537-3	WT2215061-006	WT2219907-012	L2626399-1	L2655497-2	WT2205411-006	WT2213095-011	WT2219907-013
Sample Type	Units	CCME	PWQO																				
Metals - Total																							
Aluminum	µg/L	$5/100_{VAR1}$[B]	n/v	**155**[B]	**110**[B]	84	**165**[B]	**279**[B]	96	**560**[B]	**92.1**[B]	**124**[B]	**96.5**[B]	**156**[B]	**303**[B]	**237**[B]	**190**[B]	**258**[B]	77.4	**243**[B]	**241**[B]	**440**[B]	**282**[B]
CWQG Aluminum Guideline				100	100	100	100	100	100	100	5	5	5	100	5	5	100	5	100	100	100	100	100
Antimony	µg/L	n/v	20^{E}	<0.1	0.1	0.1	0.4	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	0.3	0.8	0.6	0.5	0.5	0.3	0.94	0.76	1.11	0.91	1.07	1.22	0.85	1.02	1.05	1.02	1.12	0.94	1.09	1.05
Barium	µg/L	n/v	n/v	6.7	7.5	6.1	5.9	7	4.9	8.41	2.53	4.48	3.27	4.25	5.65	4.64	5.03	5.23	5.99	6.84	6.15	8.51	7.74
Beryllium	µg/L	n/v	$11/1,100_{s3}$[C]	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.027	<0.02	<0.02	<0.02	<0.1	<0.1	<0.1	<0.02	<0.02	<0.1	<0.1	<0.02	<0.02	<0.02
Beryllium	µg/L	n/v	$11/1,100_{s3}$[C]	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.027	<0.02	<0.02	<0.02	<0.1	<0.1	<0.1	<0.02	<0.02	<0.1	<0.1	<0.02	<0.02	<0.02
PWQO Beryllium Guideline				11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Boron	µg/L	$29,000^{A}$ $1,500^{B}$	200_{a}^{E}	9	11	8	7	8	8	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Cadmium	µg/L	1.0_{STB}^{A} 0.09_{LTG}^{B}	0.2^{C} $0.1/0.5_{s12}^{E}$	0.02	0.01	0.007	0.01	0.04	0.02	0.0293	0.0242	0.0183	0.0255	0.0105	0.0275	0.0236	0.0175	0.0241	0.0064	0.0214	0.0193	0.0189	0.0203
CWQG Cadmium Guideline (STB)				1.11	1.26	1.22	1.07	0.99	0.96	0.87	0.42	0.61	0.45	0.77	0.85	0.59	0.76	0.65	1.44	1.11	0.88	1.28	1.06
CWQG Cadmium Guideline (LTG)				0.09	0.1	0.1	0.09	0.09	0.08	0.08	0.04	0.06	0.04	0.07	0.08	0.06	0.07	0.06	0.12	0.09	0.08	0.11	0.09
PWQO Cadmium Guideline				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	15,200	17,400	15,900	14,700	14,600	12,900	11,400	4,940	8,230	5,720	10,700	11,700	8,100	10,400	9,680	19,500	14,700	12,400	18,000	14,800
Cerium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cesium	µg/L	n/v	n/v	0.02	0.01	0.01	0.01	0.02	<0.01	0.051	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.045	0.014
Chromium	µg/L	n/v	n/v	1.3	0.9	0.5	0.9	1.5	0.5	1.38	<0.5	0.86	<0.5	0.63	0.84	0.66	0.76	0.7	0.52	0.76	0.76	1.24	0.83
Cobalt	µg/L	n/v	0.9^{E}	<0.1	0.1	<0.1	0.1	<0.1	<0.1	0.34	<0.1	0.16	<0.1	0.25	0.14	<0.1	0.18	<0.1	0.2	0.21	0.21	0.45	0.23
Copper	µg/L	2_{TBC1}[B]	5^{C} $1/5_{s13}^{E}$	1.9	1.3	1.1	1.1	**2.4**[B]	1	1.79	0.66	<0.5	<0.5	<0.5	1.55	1.52	0.72	1.4	0.5	1.16	1.08	0.77	0.92
CCME Copper Guideline				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline				5	5	5	5	5	5	5	1	5	5	5	5	5	5	5	5	5	5	5	5
Europium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gallium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron	µg/L	300^{B}	300^{C}	**330**[BC]	**360**[BC]	220	300	**560**[BC]	260	**773**[BC]	239	**511**[BC]	**352**[BC]	**559**[BC]	**669**[BC]	**329**[BC]	**626**[BC]	**553**[BC]	281	**732**[BC]	**568**[BC]	**907**[BC]	**778**[BC]
Lanthanum	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	µg/L	1_{TBC1}[B]	$5/10/20/25_{s14}$[C] $1/3/5_{s15}$[E]	0.26	0.11	0.11	0.12	0.22	0.12	0.369	0.488	0.356	0.562	0.125	0.243	0.163	0.223	0.2	0.103	0.222	0.203	0.402	0.265
CCME Lead Guideline				1	1.7	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1.7	1
PWQO Lead Guideline (s14)				20	20	20	20	20	10	10	5	5	5	10	10	5	10	5	20	10	10	20	10
PWQO Lead Guideline (s15)				3	3	3	3	3	3	3	1	1	1	3	3	1	3	3	3	3	3	3	3
Lithium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.2	<1
Magnesium	µg/L	n/v	n/v	3,140	3,820	3,710	3,440	3,690	3,120	3,350	1,690	2,650	1,880	2,500	2,910	1,890	2,930	2,160	4,890	4,050	3,200	4,570	3,520
Manganese	µg/L	$3,600_{EQ3}^{A}$ 430_{EQ4}^{B}	n/v	13.2	19.4	26.4	23.6	21.9	13.3	83.3	24.8	46.8	29	58.2	15.7	15.2	29.3	11.3	169	56.9	67.5	139	78.3
CCME Manganese Guideline (EQ3)				3831	4294.2	4151	3710.8	3481.6	3391.9	3107.8	1970.8	2292.6	1970.8	2787.1	3049.3	2224.7	2760.7	2407.4	4799.5	3837.3	3146.8	4350	3685.4
CCME Manganese Guideline (EQ4)				490	430	430	430	320	380	380	290	330	290	350	330	310	380	330	430	490	380	430	490
Mercury	µg/L	0.026^{B}	0.2^{C}	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury (Trace)	ng/L	n/v	n/v	-	-	-	-	-	-	1.51	0.60	0.93	4.14	0.60	4.02	6.48	2.86	5.33	1.27	3.37	7.48	1.59	1.84
Mercury (by CV)	ng/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl Mercury	ng/L	4^{B}	n/v	-	-	-	-	-	-	0.197	0.24	0.06	0.14	-	-	0.23	0.15	0.17	-	-	0.28	0.13	0.17
Molybdenum	µg/L	73^{B}	40^{E}	0.21	0.26	0.41	<0.05	0.12	0.36	0.062	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.078	0.057	0.065	0.076	0.064
Nickel	µg/L	25_{TBC1}[B]	25^{C}	1.4	0.6	<0.5	0.6	0.9	<0.5	1.44	0.55	0.63	<0.5	0.79	1	0.88	0.92	0.81	0.61	0.83	0.81	1.03	0.8
CCME Nickel Guideline				25	65.4	25	25	25	25	25	25	25	25	25	25	25	25	25	72	25	25	66.1	25
Niobium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus	µg/L	n/v	30_{s4}^{E}	-	-	-	-	-	-	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***
Potassium	µg/L	n/v	n/v	720	480	440	430	490	340	523	85	129	<50	<50	90	57	215	97	231	278	185	402	271
Rhodium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rubidium	µg/L	n/v	n/v	1.4	1.3	1.3	1.2	1.4	0.9	1.57	0.37	0.39	<0.2	<0.2	0.51	0.26	1.07	0.4	0.72	1.02	0.55	1.67	0.84
Scandium	µg/L	n/v	n/v	1	2	<1	1	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	µg/L	1^{B}	100^{C}	0.09	0.29	<0.05	0.09	0.14	0.06	0.142	0.12	0.137	0.118	0.183	0.204	0.16	0.186	0.193	0.12	0.182	0.153	0.134	0.151
Silicon	µg/L	n/v	n/v	2,500	2,900	1,750	3,030	2,770	2,290	1,270	380	1,610	1,150	1,630	2,390	240	2,300	1,630	1,510	2,580	660	2,600	1,970
Silver	µg/L	0.25^{B}	0.1^{C}	0.07	<0.01	<0.01	<0.01	0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.01	<0.01	<0.01
Sodium	µg/L	n/v	n/v	2,020	2,760	2,480	1,900	2,200	1,970	2,870	424	605	502	356	726	570	616	629	4,580	4,890	2,830	3,110	2,730
Strontium	µg/L	n/v	n/v	18.8	24.5	23.9	22.1	22.3	18.7	21.8	9.14	15.5	9.71	22	23	15	22.7	17	35.6	28	24	32.5	25.9
Sulfur	µg/L	n/v	n/v	2,400	3,000	800	3,600	1,500	900	<500	<500	650	<500	<500	830	<500	<500	<500	<500	550	<500	<500	<500
Tellurium	µg/L	n/v	n/v	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.24	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/L	0.8^{B}	0.3_{b}^{E}	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Thorium	µg/L	n/v	n/v	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.11	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tin	µg/L	n/v	n/v	0.7	<0.1	0.3	0.4	0.2	0.3	<0.1	<0.1	0.21	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Titanium	µg/L	n/v	n/v	7.2	4.3	2.9	6.1	9.3	2.9	21.6	1.6	3.21	1.13	3.24	6.01	3.64	3.81	4.42	2.8	6.57	6.74	17.4	7.99
Tungsten	µg/L	30_{a}^{E}		<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Uranium	µg/L	33^{A} 15^{B}	5_{a}^{E}	0.07	0.07	0.07	0.05	0.06	0.06	0.05	<0.01	0.012	<0.01	0.02	0.026	0.024	0.018	0.027	0.038	0.038	0.037	0.043	0.039
Vanadium	µg/L	n/v	6^{E}	0.7	0.7	<0.5	0.7	0.8	<0.5	1.34	<0.5	<0.5	<0.5	<0.5	0.71	0.53	<0.5	0.55	0.57	0.64	0.68	1.15	0.71
Yttrium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	37_{EQ1}^{A} 7.0_{EQ2}^{B}	30^{C} 20^{E}	7	2	3	2	6	3	**23.2**[E]	6.5	9	5	4.5	8.2	8.3	9	7.8	<3	6.2	6.5	7.2	6.4
CCME Zinc Guideline (EQ1)				39.2	43.7	42.3	38	35.8	34.9	32.1	17.7	24.1	18.7	29	31.5	23.4	28.7	25.2	48.5	39.2	32.5	44.2	37.8
CCME Zinc Guideline (EQ2)				27.3	27	24.7	26.6	22.9	6.8	32.1	46.8	47.8	75.8	46.2	63.4	52.2	37.9	52.4	47.7	63.6	41.9	40.5	40.5
Zirconium	µg/L	n/v	4_{a}^{E}	0.8	0.8	0.6	1	0.9	0.4	0.55	<0.2	0.21	<0.2	0.25	0.37	0.35	0.31	0.34	<0.2	0.31	0.34	0.45	0.33

See notes on last page

Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				NDRS02 (Continued)												NDRS04							NDR-S-04b
Sample Date				17-Oct-22	17-Feb-23	22-Mar-23	22-Mar-23	17-Apr-23	21-Jun-23	31-Jul-23	15-Aug-23	18-Sep-23	18-Oct-23	22-Nov-23	5-Dec-23	6-Aug-21	21-Oct-21	30-May-22	30-May-22	30-Aug-22	13-Oct-22	1-Jun-23	17-Feb-23
Sample ID				CNC-DUP-01	NDR-S-02	NDR-S-02	SW-Dup	NDR-S-02	NDR-S-02	NDR-S-02	NDR-S-02	NDR-S-02	NDR-S-02	NDR-S-02	NDR-S-02	NDR-S-04	NDR-S-04	NDR-S-04	CNC-DUP-01	NDRS04	NDR-S-04	NDR-S-04	NDR-S-04b
Sampling Company				UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	STANTEC	STANTEC	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				ALS	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	ALS	ALS	ALS	ALS	ALS	ALS	TESTMARK
Laboratory Work Order				WT2219907	491080	493768	493768	496175	503549	507838	509308	512902	516339	520603	521073	L2625067	L2655497	L2711537	L2711537-7	WT2213095	WT2218393	WT2315817	491080
Laboratory Sample ID				WT2219907-003	1852156	1861620	1861621	1869715	1896030	1911305	1916743	1929231	1942678	1957348	1958863	L2625067-3	L2655497-1	L2711537-1	Field Duplicate	WT2213095-007	WT2218393-004	WT2315817-002	1852155
Sample Type	Units	CCME	PWQO	Field Duplicate																			
Field Parameters																							
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	-	6.8	7.02	-	6.5	7.33	**5.42**[BC]	**5.72**[BC]	**5.9**[BC]	**4.77**[BC]	7.78	6.54	-	-	-	-	-	-	-	**6.4**[BC]
Temperature, Field	deg C	n/v	30_{96}[C]	-	0	0.06	-	0.82	23.53	17.44	17.53	12.33	6.76	0.85	0.06	-	-	-	-	-	-	-	0
General Chemistry																							
Acidity as CaCO3	mg/L	n/v	n/v	<2.0	12	15	9	10	15	8	8	7	9	8	11	3.4	5.3	6.5	5.8	3.2	5.0	5.4	14
Alkalinity, Total	mg/L	n/v	n/v	34.9	66	82	85	22	49	56	44	41	36	32	36	69	41.9	28.4	28.8	60.0	33.8	58.5	65
Ammonia (as N)	mg/L	[B] TBC2	n/v	0.0391	0.123	0.072	0.073	0.048	0.043	0.039	0.058	0.26	0.07	0.052	0.064	0.023	0.045	0.019	0.035	0.0470	0.0318	0.0253	0.084
Bromide	mg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	<0.10	<0.10	<0.10	<0.10	-	-	<0.1	-
Chloride	mg/L	640[A] 120[B]	n/v	3.09	3.9	1.4	1.5	4.8	1.3	1.9	4.3	1.3	4.5	13.2	3.5	10.7	6.09	4.55	4.58	4.24	5.82	3.51	3.9
Chrysotile Asbestos (>0.5 um)	MFL	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	<1.00	-	-	-	-	-	-	-	-
Chrysotile Asbestos (>10 um)	MFL	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	<1.00	-	-	-	-	-	-	-	-
Cyanide	mg/L	0.0050[B]	n/v	0.0022	-	-	-	-	-	-	-	-	-	-	-	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	-	-
Cyanide (Free)	mg/L	0.0050[B]	0.0050[C]	<0.0020	0.002	0.005	0.005	0.005	-	-	-	-	-	-	-	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.002	0.002
Cyanide (Strong Acid Dissociable)	mg/L	0.0050[B]	n/v	-	<0.002	0.002	0.003	0.004	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.002	<0.002
Cyanide (Weak Acid Dissociable)	mg/L	0.0050[B]	n/v	<0.0020	<0.001	0.003	0.003	0.002	-	-	-	-	-	-	-	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.002	<0.001
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	-	29.6	25.8	25.9	19.1	24.4	25	26.5	32.7	44.5	29	44	-	-	-	-	-	-	-	27.1
Electrical Conductivity, Lab	µS/cm	n/v	n/v	83.6	136	155	160	59	92	124	100	90	89	92	86	160	108	74.6	75.1	118	88.4	87.8	135
Fluoride	mg/L	0.12[B]	n/v	0.021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.031	0.023	0.021	0.021	0.030	<0.020	0.027	<0.05
Hardness (as CaCO3)	mg/L	n/v	n/v	49.5	57.5	73.7	71	23.4	51.8	66.1	52.8	45.4	48.2	41.5	43.7	71	54.5	40.4	40.2	66.7	48.4	46.6	54.8
Nitrate (as N)	mg/L	124[A] 3.0[B]	n/v	0.024	<0.1	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.6	<0.1	<0.020	0.04	0.248	0.037	<0.020	0.022	<0.02	0.2
Nitrite (as N)	mg/L	0.060[B]	n/v	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.02	0.03	0.04	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.01	<0.01
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	7.50	7.01	7.14	7.33	6.58	6.98	7.24	7.33	7.08	6.83	6.76	6.61	7.63	7.04	7.05	7.10	7.40	7.33	7.32	7.16
Phosphorus, Total	mg/L	n/v	0.030_{94}[E]	0.0133	**0.033**[E]	**0.043**[E]	**0.043**[E]	0.03	0.02	**0.039**[E]	0.026	0.029	0.022	0.026	0.021	**0.0337**[E]	0.0265	0.0124	0.0194	0.0057	0.0118	0.0223	**0.036**[E]
Radium-226	Bq/L	n/v	1[C]	-	-	-	-	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	<0.30	0.9	1	1	0.8	<0.5	<0.5	0.6	<0.5	1.4	2.8	0.7	<0.30	0.89	<0.30	<0.30	<0.30	<0.30	<0.3	0.7
BC MECC Sulfate Guideline (s2)				218	218	218	218	128	218	218	218	218	218	218	218	218	218	218	218	218	218	218	218
Total Dissolved Solids	mg/L	n/v	n/v	114	150	140	150	85	90	130	85	85	85	95	95	123	122	105	100	112	125	79	155
Total Suspended Solids	mg/L	[B] SN	n/v	5.2	4	22.7	18.5	5.3	19.3	9	11.7	8.33	7.33	3.7	4	3.9	<3.0	9.6	6.7	38.4	<3.0	41.7	7.5

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Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				NDRS02 (Continued)													NDRS04							
Sample Date				17-Oct-22	17-Feb-23	22-Mar-23	22-Mar-23	17-Apr-23	21-Jun-23	31-Jul-23	15-Aug-23	18-Sep-23	18-Oct-23	22-Nov-23	5-Dec-23	6-Aug-21	21-Oct-21	30-May-22	30-May-22	30-Aug-22	13-Oct-22	1-Jun-23	NDR-S-04b 17-Feb-23
Sample ID				CNC-DUP-01	NDR-S-02	NDR-S-02	SW-Dup	NDR-S-02	NDR-S-02	NDR-S-02	NDR-S-02	NDR-S-02	NDR-S-02	NDR-S-02	NDR-S-02	NDR-S-04	NDR-S-04	NDR-S-04	CNC-DUP-01	NDRS04	NDR-S-04	NDR-S-04	NDR-S-04b
Sampling Company				UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	STANTEC	STANTEC	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				ALS	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	ALS	ALS	ALS	ALS	ALS	ALS	TESTMARK
Laboratory Work Order				WT2219907	491080	493768	493768	496175	503549	507838	509308	512902	516339	520603	521073	L2625067	L2655497	L2711537	L2711537-7	WT2213095	WT2218393	WT2315817	491080
Laboratory Sample ID				WT2219907-003	1852156	1861620	1861621	1869715	1896030	1911305	1916743	1929231	1942678	1957348	1958863	L2625067-3	L2655497-1	L2711537-1	Field Duplicate	WT2213095-007	WT2218393-004	WT2315817-002	1852155
Sample Type				Field Duplicate			Field Duplicate																
Metals - Dissolved																							
Aluminum	µg/L	$5/100_{VAR1}$ [B]	n/v	**173** [B]	90	45	45	**62** [B]	90	45	**106** [B]	**101** [B]	**170** [B]	**170** [B]	**150** [B]	65.3	**149** [B]	**175** [B]	**172** [B]	**103** [B]	**243** [B]	**135** [B]	82
CWQG Aluminum Guideline				100	100	100	100	5	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aluminum (0.2u)	µg/L	n/v	75^{E}	-	-	57	57	56	63	-	**90** [E]	-	-	-	-	-	-	-	-	-	-	-	-
Antimony	µg/L	n/v	20^{E}	<0.1	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	0.91	<1	<1	<1	<1	0.7	0.9	0.9	0.8	0.8	0.7	0.7	1.2	0.97	0.9	0.86	1.4	0.96	0.85	<1
Barium	µg/L	n/v	n/v	6.62	7	7	7	3	15.2	17.1	15.7	5	5.7	5.5	6.6	6.52	5.9	5.82	5.61	6.84	6.41	6.39	6
Beryllium	µg/L	n/v	$11/1{,}100_{s3}$ [C]	<0.02	<0.5	<0.5	<0.5	<0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.1	<0.1	<0.1	<0.02	<0.02	<0.02	<0.5
PWQO Beryllium Guideline				11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	<0.05	<1	<1	<1	<1	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
Boron	µg/L	$29{,}000^{A}$ $1{,}500^{B}$	200_{a} [E]	<10	<2	<2	2	<2	4	<2	<2	5	<2	3	<2	<10	<10	<10	<10	<10	<10	<10	<2
Cadmium	µg/L	1.0_{STB} [A] 0.09_{LTG} [B]	0.2^{C} $0.1/0.5_{s12}$ [E]	0.0158	<0.1	<0.1	<0.1	**<0.1**	0.02	0.009	0.01	0.01	0.02	0.02	0.03	0.0071	0.0126	0.0237	0.018	0.0083	0.0159	0.0152	<0.1
CWQG Cadmium Guideline (STB)				1.03	1.2	1.54	1.48	0.48	1.08	1.38	1.1	0.94	1	0.86	0.91	1.48	1.13	0.84	0.83	1.39	1	0.97	1.14
CWQG Cadmium Guideline (LTG)				0.09	0.1	0.12	0.12	0.05	0.09	0.11	0.09	0.08	0.09	0.08	0.08	0.12	0.1	0.07	0.07	0.11	0.09	0.08	0.1
PWQO Cadmium Guideline				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	13,600	15,600	19,200	19,500	6,150	14,200	17,300	13,500	12,700	12,800	11,900	12,400	22,300	15,500	11,400	11,500	19,000	13,900	13,100	15,000
Cerium	µg/L	n/v	n/v	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	<1
Cesium	µg/L	n/v	n/v	<0.01	<1	<1	<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<1
Chromium	µg/L	n/v	n/v	0.58	2	1	<1	<1	1	0.9	1	1.5	0.8	1.4	1.1	0.41	0.51	0.51	<0.5	0.64	0.69	<0.5	2
Cobalt	µg/L	n/v	0.9^{E}	0.14	0.4	0.1	0.1	0.1	0.3	0.1	0.1	<0.1	<0.1	<0.1	0.1	0.17	0.11	0.11	<0.1	0.17	0.13	0.14	0.3
Copper	µg/L	2_{TBC1} [B]	5^{C} $1/5_{s13}$ [E]	0.78	**3** [B]	<1	<1	<1	1.6	1.5	1.8	1.5	1.2	**2.7** [B]	**3.6** [B]	0.63	0.81	1.08	1.04	0.72	0.84	1.04	<1
CCME Copper Guideline				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline				5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Europium	µg/L	n/v	n/v	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	<1
Gallium	µg/L	n/v	n/v	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	<1
Iron	µg/L	300^{B}	300^{C}	**574** [BC]	**635** [BC]	**519** [BC]	**528** [BC]	180	**400** [BC]	300	**440** [BC]	**400** [BC]	**510** [BC]	**490** [BC]	**580** [BC]	**361** [BC]	**496** [BC]	**330** [BC]	**340** [BC]	**555** [BC]	**592** [BC]	**308** [BC]	**567** [BC]
Lanthanum	µg/L	n/v	n/v	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	<1
Lead	µg/L	1_{TBC1} [B]	$5/10/20/25_{s14}$ [C] $1/3/5_{s15}$ [E]	0.152	0.1	<0.1	<0.1	<0.1	0.13	0.15	0.2	0.11	0.15	0.13	0.2	0.074	0.104	0.113	0.111	0.164	0.191	0.138	0.1
CCME Lead Guideline				1	1	2.2	2.1	1	1	1.9	1	1	1	1	1	2.1	1	1	1	1.9	1	1	1
PWQO Lead Guideline (s14)				10	20	25	25	10	20	20	20	20	10	10	10	20	20	10	10	20	10	20	20
PWQO Lead Guideline (s15)				3	3	3	3	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Lithium	µg/L	n/v	n/v	<1	<5	<5	<5	<5	1	<1	<1	1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<5
Magnesium	µg/L	n/v	n/v	3,780	3,970	4,910	4,970	1,660	3,600	3,910	3,350	3,200	3,390	2,800	3,090	5,400	4,300	2,890	2,790	4,670	3,320	3,370	4,020
Manganese	µg/L	$3{,}600_{EQ3}$ [A] 430_{EQ4} [B]	n/v	56.5	171	29	18	51	77.9	77.6	42.4	33.3	23.2	23.9	51.1	185	41.9	47.8	45.4	128	40.1	86.7	78
CCME Manganese Guideline (EQ3)				3590.1	4094.8	5091.9	4927.7	1970.8	3736.1	4627.8	3799.4	3327.6	3507.2	3075.3	3218	4927.7	3906.6	3003.6	2990.6	4664.7	3519.9	3404.7	3925.5
CCME Manganese Guideline (EQ4)				350	500	500	490	330	490	490	490	380	350	350	330	430	500	380	380	490	380	380	500
Mercury	µg/L	0.026^{B}	0.2^{C}	-	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	0.000104	0.000311	-	-	-	-	-	***<0.1***
Mercury (by CV)	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	<0.05	1	<1	<1	<1	0.25	0.18	1.38	0.21	0.06	0.08	0.18	0.11	<0.05	<0.05	0.054	0.072	0.052	0.075	<1
Nickel	µg/L	25_{TBC1} [B]	25^{C}	0.63	<1	<1	<1	<1	1.4	0.6	0.8	0.7	0.9	0.6	0.7	<0.5	0.62	0.61	0.62	0.68	0.7	0.57	<1
CCME Nickel Guideline				25	25	75.8	73.7	25	25	69.8	25	25	25	25	25	73.7	25	25	25	70.3	25	25	25
Niobium	µg/L	n/v	n/v	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	<1
Phosphorus	µg/L	n/v	30_{s4} [E]	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	**1,750** [E]	***<50***	***<50***	<30	<30	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***
Potassium	µg/L	n/v	n/v	230	380	500	590	380	360	250	190	230	240	150	190	234	350	160	155	308	222	260	350
Rhodium	µg/L	n/v	n/v	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	<1
Rubidium	µg/L	n/v	n/v	0.62	1	<1	1	1	0.8	0.6	0.6	0.7	0.7	0.4	0.5	0.92	1.16	0.45	0.49	1.07	0.85	0.78	<1
Scandium	µg/L	n/v	n/v	-	<1	1	1	<1	<1	<1	<1	1	1	<1	<1	-	-	-	-	-	-	-	<1
Selenium	µg/L	1^{B}	100^{C}	0.138	<0.2	<0.5	<0.5	<0.2	0.14	<0.05	0.2	0.16	0.05	0.17	0.12	0.117	0.126	0.167	0.148	0.178	0.156	0.148	<0.2
Silicon	µg/L	n/v	n/v	1,700	2,300	2,800	2,900	950	830	1,060	1,050	2,040	1,970	1,840	1,970	1,410	2,470	441	454	2,410	1,810	431	2,200
Silver	µg/L	0.25^{B}	0.1^{C}	<0.01	<0.1	<0.1	<0.1	<0.1	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.01	<0.01	<0.01	<0.1
Sodium	µg/L	n/v	n/v	2,780	2,860	1,880	1,950	3,250	1,440	1,770	3,200	1,680	3,070	3,200	2,710	7,340	4,340	3,800	3,660	3,770	3,980	3,120	3,110
Strontium	µg/L	n/v	n/v	25.4	26	27	27	10	21.6	24.1	20.9	22.8	21.2	18	21.7	40.6	29.5	21.7	20.7	35	24.1	23	28
Sulfur	µg/L	n/v	n/v	<500	<800	<800	<800	<800	3,000	<500	<500	2,000	<500	1,100	800	<500	710	<500	<500	<500	<500	<500	<800
Tellurium	µg/L	n/v	n/v	<0.2	<1	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1
Thallium	µg/L	0.8^{B}	0.3_{s} [E]	<0.01	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1
Thorium	µg/L	n/v	n/v	<0.1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1
Tin	µg/L	n/v	n/v	<0.1	<1	<1	<1	<1	0.3	0.2	0.4	0.3	0.2	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1
Titanium	µg/L	n/v	n/v	3.15	2	2	2	2	3.1	2.4	3.4	2.6	9.5	2.7	3.4	3.03	3.65	3.14	3.38	3.72	6.79	4.5	2
Tungsten	µg/L	n/v	30_{E} [E]	<0.1	<1	<1	<1	<1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1
Uranium	µg/L	33^{A} 15^{B}	5_{a} [E]	0.032	<1	<1	<1	<1	0.05	0.05	0.03	0.02	0.03	0.03	0.03	0.037	0.026	0.034	0.035	0.041	0.035	0.047	<1
Vanadium	µg/L	n/v	6^{E}	<0.5	<1	<1	<1	<1	0.8	0.7	0.7	0.7	0.5	0.6	0.6	<0.5	<0.5	<0.5	<0.5	0.62	0.54	0.7	<1
Yttrium	µg/L	n/v	n/v	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	<1
Zinc	µg/L	37_{EQ1} [A] 7.0_{EQ2} [B]	30^{C} 20^{E}	5.5	12	7	7	4	5	3	6	2	6	5	7	1.3	3.2	5.9	5.3	3.5	5.2	3.8	3
CCME Zinc Guideline (EQ1)				36.8	41.7	51.3	49.7	19.7	38.3	46.9	38.9	34.3	36	31.8	33.2	49.7	39.9	31.1	31	47.2	36.1	35	40.1
CCME Zinc Guideline (EQ2)				35.7	60.2	64.8	53.7	30.6	51.7	53.2	40.9	47.3	69.3	53.7	75.3	45.2	56.9	42.5	40.6	51.4	40.2	39.1	49.1
Zirconium	µg/L	n/v	4_{a} [E]	0.3	<1	<1	<1	<1	0.8	1	1.3	1.1	1.1	0.9	1.1	0.38	0.34	0.33	0.34	0.43	0.42	0.41	<1

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Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				NDRS02 (Continued)													NDRS04						NDR-S-04b
Sample Date				17-Oct-22	17-Feb-23	22-Mar-23	22-Mar-23	17-Apr-23	21-Jun-23	31-Jul-23	15-Aug-23	18-Sep-23	18-Oct-23	22-Nov-23	5-Dec-23	6-Aug-21	21-Oct-21	30-May-22	30-May-22	30-Aug-22	13-Oct-22	1-Jun-23	17-Feb-23
Sample ID				CNC-DUP-01	NDR-S-02	NDR-S-02	SW-Dup	NDR-S-02	NDR-S-02	NDR-S-02	NDR-S-02	NDR-S-02	NDR-S-02	NDR-S-02	NDR-S-02	NDR-S-04	NDR-S-04	NDR-S-04	CNC-DUP-01	NDRS04	NDR-S-04	NDR-S-04	NDR-S-04b
Sampling Company				UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	STANTEC	STANTEC	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				ALS	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	ALS	ALS	ALS	ALS	ALS	ALS	TESTMARK
Laboratory Work Order				WT2219907	491080	493768	493768	496175	503549	507838	509308	512902	516339	520603	521073	L2625067	L2655497	L2711537	L2711537-7	WT2213095	WT2218393	WT2315817	491080
Laboratory Sample ID				WT2219907-003	1852156	1861620	1861621	1869715	1896030	1911305	1916743	1929231	1942678	1957348	1958863	L2625067-3	L2655497-1	L2711537-1	Field Duplicate	WT2213095-007	WT2218393-004	WT2315817-002	1852155
Sample Type	Units	CCME	PWQO	Field Duplicate			Field Duplicate																
Metals - Total																							
Aluminum	µg/L	$5/100_{VAR1}$ [B]	n/v	**242** [B]	**222** [B]	**543** [B]	**518** [B]	**222** [B]	**422** [B]	**273** [B]	**260** [B]	**193** [B]	**334** [B]	**216** [B]	**317** [B]	**328** [B]	**243** [B]	**326** [B]	**351** [B]	**695** [B]	**181** [B]	**825** [B]	**223** [B]
CWQG Aluminum Guideline				100	100	100	100	5	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Antimony	µg/L	n/v	20 [E]	<0.1	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5
Arsenic	µg/L	5 [B]	100 [C] 5 [E]	0.99	<1	<1	<1	<1	0.6	1	0.8	0.7	0.8	0.7	0.7	1.33	0.93	0.86	0.86	1.5	0.98	0.96	<1
Barium	µg/L	n/v	n/v	7.11	8	13	12	4	9.5	8	6.1	6.2	6.7	5.7	6.9	8.9	6.24	7.11	6.9	11.9	6.22	11.6	7
Beryllium	µg/L	n/v	$11/1,100_{s3}$ [C]	<0.02	<0.5	<0.5	<0.5	<0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.1	<0.1	<0.1	0.039	<0.02	0.036	<0.5
Beryllium	µg/L	n/v	$11/1,100_{s3}$ [C]	<0.02	<0.5	<0.5	<0.5	<0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.1	<0.1	<0.1	0.039	<0.02	0.036	<0.5
PWQO Beryllium Guideline				11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	<0.05	<1	<1	<1	<1	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
Boron	µg/L	$29,000$ [A] $1,500$ [B]	200_a [E]	<10	<2	<2	<2	<2	4	<2	<2	5	<2	2	<2	<10	<10	<10	<10	<10	<10	<10	<2
Cadmium	µg/L	1.0_{STB} [A] 0.09_{LTG} [B]	0.2 [C] $0.1/0.5_{s12}$ [E]	0.0167	0.03	0.05	0.05	0.03	0.03	0.03	0.02	0.02	0.03	0.03	0.03	0.0117	0.0108	0.0219	0.024	0.0224	<0.02	0.0341	0.03
CWQG Cadmium Guideline (STB)				1.03	1.2	1.54	1.48	0.48	1.08	1.38	1.1	0.94	1	0.86	0.91	1.48	1.13	0.84	0.83	1.39	1	0.97	1.14
CWQG Cadmium Guideline (LTG)				0.09	0.1	0.12	0.12	0.05	0.09	0.11	0.09	0.08	0.09	0.08	0.08	0.12	0.1	0.07	0.07	0.11	0.09	0.08	0.1
PWQO Cadmium Guideline				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	14,700	16,000	19,200	19,600	6,290	15,100	17,400	13,800	12,700	13,000	11,700	12,600	20,400	15,000	10,500	10,800	19,500	13,800	13,400	14,900
Cerium	µg/L	n/v	n/v	-	<1	1	1	<1	1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	<1
Cesium	µg/L	n/v	n/v	<0.01	<1	<1	<1	<1	0.05	0.02	0.02	0.01	0.02	<0.01	0.02	0.038	0.013	0.018	0.024	0.072	<0.01	0.081	<1
Chromium	µg/L	n/v	n/v	0.76	<1	2	2	<1	1.9	0.8	0.9	1.2	1.1	1.1	1.3	0.94	0.71	0.88	0.91	2.03	0.69	2	<1
Cobalt	µg/L	n/v	0.9 [E]	0.18	0.4	0.5	0.5	0.2	0.3	0.3	0.2	0.2	0.1	<0.1	0.2	0.31	0.17	0.19	0.22	0.64	<0.1	0.61	0.3
Copper	µg/L	2_{TBC1} [B]	5 [C] $1/5_{s13}$ [E]	0.88	2	1	1	1	1.4	1.2	1	1.8	1.6	**2.8** [B]	0.2	**2.59** [B]	0.93	1.22	1.36	1.48	0.95	1.87	2
CCME Copper Guideline				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline				5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Europium	µg/L	n/v	n/v	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	<1
Gallium	µg/L	n/v	n/v	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	<1
Iron	µg/L	300 [B]	300 [C]	**709** [BC]	**800** [BC]	**1,300** [BC]	**1,200** [BC]	**336** [BC]	**700** [BC]	**580** [BC]	**630** [BC]	**520** [BC]	**700** [BC]	**550** [BC]	**700** [BC]	**711** [BC]	**644** [BC]	**508** [BC]	**539** [BC]	**1,380** [BC]	**537** [BC]	**1,120** [BC]	**740** [BC]
Lanthanum	µg/L	n/v	n/v	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	<1
Lead	µg/L	1_{TBC1} [B]	$5/10/20/25_{s14}$ [C] $1/3/5_{s15}$ [E]	0.225	0.3	0.5	0.5	0.2	**5.56** [BE]	0.37	0.32	0.33	0.28	0.19	0.24	0.314	0.182	0.196	0.228	0.556	0.151	0.646	0.3
CCME Lead Guideline				1	1	2.2	2.1	1	1	1.9	1	1	1	1	1	2.1	1	1	1	1.9	1	1	1
PWQO Lead Guideline (s14)				10	20	25	25	10	20	20	20	20	10	10	10	20	20	10	10	20	10	20	20
PWQO Lead Guideline (s15)				3	3	3	3	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Lithium	µg/L	n/v	n/v	<1	<5	<5	<5	<5	<1	<1	<1	1	<1	1	<1	<1	<1	<1	<1	1.6	<1	1.2	<5
Magnesium	µg/L	n/v	n/v	3,440	4,000	4,830	4,920	1,750	3,290	4,030	3,520	3,240	3,460	2,890	3,170	4,890	4,130	2,970	3,030	5,140	3,600	4,110	3,980
Manganese	µg/L	$3,600_{EQ3}$ [A] 430_{EQ4} [B]	n/v	64.4	177	162	155	57	99.9	101	49.7	43.4	31.6	29.3	61.8	210	49.7	55.5	65.4	235	34.9	147	94
CCME Manganese Guideline (EQ3)				3590.1	4094.8	5091.9	4927.7	1970.8	3736.1	4627.8	3799.4	3327.6	3507.2	3075.3	3218	4927.7	3906.6	3003.6	2990.6	4664.7	3519.9	3404.7	3925.5
CCME Manganese Guideline (EQ4)				350	500	500	490	330	490	490	490	380	350	350	330	430	500	380	380	490	380	380	500
Mercury	µg/L	0.026 [B]	0.2 [C]	-	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	-	-	-	-	-	-	-	***<0.1***
Mercury (Trace)	ng/L	n/v	n/v	3.65	3.43	3.57	3.15	6.83	-	-	-	-	-	-	-	1.10	2.09	4.46	4.80	2.16	5.06	0.69	2.6
Mercury (by CV)	ng/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl Mercury	ng/L	4 [B]	n/v	0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	0.22	0.23	0.06	0.11	-	-
Molybdenum	µg/L	73 [B]	40 [E]	0.055	<1	<1	<1	<1	0.22	0.11	1	0.14	0.08	0.08	0.05	0.111	0.055	<0.05	0.055	0.087	0.062	0.089	<1
Nickel	µg/L	25_{TBC1} [B]	25 [C]	0.72	1	<1	<1	<1	1.5	0.5	0.8	0.6	1.1	<0.5	0.6	1.26	0.77	0.94	0.99	1.61	0.72	1.42	<1
CCME Nickel Guideline				25	25	75.8	73.7	25	25	69.8	25	25	25	25	25	73.7	25	25	25	70.3	25	25	25
Niobium	µg/L	n/v	n/v	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	<1
Phosphorus	µg/L	n/v	30_{s4} [E]	***<50***	-	-	-	-	-	-	-	-	-	-	-	***<50***	***<50***	***<50***	***<50***	**52** [E]	***<50***	***<50***	-
Potassium	µg/L	n/v	n/v	253	410	620	610	410	380	290	220	260	280	160	220	304	356	205	321	454	210	426	360
Rhodium	µg/L	n/v	n/v	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	<1
Rubidium	µg/L	n/v	n/v	0.76	1	2	2	1	1.3	1	0.9	0.9	0.9	0.4	0.8	1.42	1.29	0.81	0.88	2.17	0.64	1.94	1
Scandium	µg/L	n/v	n/v	-	<1	2	2	<1	<1	<1	<1	1	1	<1	1	-	-	-	-	-	-	-	<1
Selenium	µg/L	1 [B]	100 [C]	0.157	<0.2	<0.5	<0.5	<0.2	0.14	<0.05	0.32	0.2	0.19	0.25	0.13	0.128	0.148	0.152	0.126	0.139	0.166	0.133	0.3
Silicon	µg/L	n/v	n/v	1,880	2,400	3,400	3,400	1,200	1,300	1,230	1,300	2,190	2,170	1,980	2,300	1,990	2,610	840	810	3,390	1,780	1,690	2,300
Silver	µg/L	0.25 [B]	0.1 [C]	<0.01	<0.1	<0.1	<0.1	<0.1	**0.12** [C]	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.01	<0.1
Sodium	µg/L	n/v	n/v	2,680	2,860	1,850	1,910	3,270	1,530	1,800	3,230	1,690	3,120	3,240	2,720	6,550	4,070	3,460	3,540	3,880	4,290	3,280	2,950
Strontium	µg/L	n/v	n/v	25.8	29	29	29	10	20.5	24.9	21.9	23.2	22.5	17.8	21	38.1	28.4	20.6	20.8	35.2	23.8	25	28
Sulfur	µg/L	n/v	n/v	<500	<800	<800	<800	<800	1,500	<500	<500	1,800	<500	1,200	600	<500	<500	<500	<500	<500	520	<500	<800
Tellurium	µg/L	n/v	n/v	<0.2	<1	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.28	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1
Thallium	µg/L	0.8 [B]	0.3_b [E]	<0.01	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.012	<0.01	0.013	<0.1
Thorium	µg/L	n/v	n/v	<0.1	<1	<1	<1	<1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.13	<0.1	0.12	<1
Tin	µg/L	n/v	n/v	<0.1	<1	<1	<1	<1	0.6	0.2	0.4	0.5	0.3	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1
Titanium	µg/L	n/v	n/v	6.29	7	23	22	9	21.4	9.4	8.6	5.6	8	4.3	9	13.8	7.67	10.3	12.1	28.9	3.44	34	7
Tungsten	µg/L	n/v	30_b [E]	<0.1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1
Uranium	µg/L	33 [A] 15 [B]	5_a [E]	0.041	<1	<1	<1	<1	0.06	0.06	0.04	0.03	0.03	0.03	0.04	0.049	0.033	0.039	0.038	0.061	0.034	0.081	<1
Vanadium	µg/L	n/v	6 [E]	0.62	<1	1	1	<1	1.5	1	0.8	0.7	0.7	0.6	0.8	1.01	0.64	0.8	0.87	1.78	<0.5	2.04	<1
Yttrium	µg/L	n/v	n/v	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	<1
Zinc	µg/L	37_{EQ1} [A] 7.0_{EQ2} [B]	30 [C] 20 [E]	5.8	12	14	13	5	6	4	5	6	12	5	7	6.6	3.5	6.5	16	7.3	5.5	8.4	4
CCME Zinc Guideline (EQ1)				36.8	41.7	51.3	49.7	19.7	38.3	46.9	38.9	34.3	36	31.8	33.2	49.7	39.9	31.1	31	47.2	36.1	35	40.1
CCME Zinc Guideline (EQ2)				35.7	60.2	64.8	53.7	30.6	51.7	53.2	40.9	47.3	69.3	53.7	75.3	45.2	56.9	42.5	40.6	51.4	40.2	39.1	49.1
Zirconium	µg/L	n/v	4_a [E]	0.32	<1	<1	1	<1	1.7	2	1.7	1.4	1.2	0.9	1.3	0.47	0.28	0.43	0.41	0.73	0.27	0.59	<1

See notes on last page

Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				NDR-S-04b (Continued)										NDRS05		NDRS06						
Sample Date				23-Mar-23	18-Apr-23	25-May-23	13-Jun-23	12-Jul-23	15-Aug-23	18-Sep-23	18-Sep-23	16-Oct-23	15-Nov-23	5-Dec-23	1-Jun-22	30-Aug-22	1-Jun-22	28-Feb-23	23-Mar-23	18-Apr-23	24-May-23	24-May-23	29-May-23
Sample ID				NDR-S-04b	NDR-S-04b	NDR-S-04b	NDR-S-04b	NDR-S-04b	NDR-S-04b	NDR-S-04b	SWDup	NDR-S-04b	NDR-S-04b	NDR-S-04b	NDR-S-05	NDRS05	NDR-S-06	NDR-S-06	NDR-S-06	NDR-S-06	NDR-S-06	SWDup1	NDR-S-06
Sampling Company				UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	ALS	ALS	ALS	TESTMARK	TESTMARK	TESTMARK	TESTMARK	UNKNOWN	TESTMARK
Laboratory				TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	WT2204941	WT2213095	WT2204941	492012	493844	496175	500390	500390	500662
Laboratory Work Order				493844	496175	500390	502693	505909	509308	512902	512902	516043	519511	521073	WT2204941-003	WT2213095-008	WT2204941-002	1855436	1861886	1869719	1884826	1884838	1885914
Laboratory Sample ID				1861885	1869718	1884825	1893193	1904224	1916744	1929232	1929234	1941582	1953842	1958862									
Sample Type	Units	CCME	PWQO								Field Duplicate											Field Duplicate	
Field Parameters																							
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	7.03	6.65	-	7.08	**6.37[BC]**	**5.83[BC]**	**5.69[BC]**	-	**4.82[BC]**	7.9	6.58	-	-	-	7.5	6.98	6.51	-	-	7.25
Temperature, Field	deg C	n/v	$30_{\mu6}$[C]	0.62	0.27	12.6	16.66	20.7	15.92	12.28	-	7.73	1.87	0.08	-	-	-	0	0.07	0.17	11.85	-	21.18
General Chemistry																							
Acidity as CaCO3	mg/L	n/v	n/v	14	12	6	19	8	10	7	8	9	7	12	5.3	3.0	4.7	<5	10	12	8	8	10
Alkalinity, Total	mg/L	n/v	n/v	81	21	28	52	46	44	43	41	36	30	35	7.2	87.7	7.1	66	81	22	27	26	33
Ammonia (as N)	mg/L	$_{TBC2}$[B]	n/v	0.066	0.037	0.047	0.039	0.053	0.064	0.054	0.053	0.059	0.09	0.066	0.0053	0.0171	<0.0050	0.089	0.086	0.038	0.048	0.046	0.045
Bromide	mg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640[A] 120[B]	n/v	3.1	3.6	3.5	1.3	1.4	5.9	3.5	3.5	9.2	7.7	5.2	<0.50	<0.50	<0.50	2.7	3.3	3.4	2.3	2.4	2.1
Chrysotile Asbestos (>0.5 um)	MFL	n/v	n/v	-	-	-	-	-	-	-	-	-	-	<0.51	-	-	-	-	-	-	-	-	-
Chrysotile Asbestos (>10 um)	MFL	n/v	n/v	-	-	-	-	-	-	-	-	-	-	<0.51	-	-	-	-	-	-	-	-	-
Cyanide	mg/L	0.0050[B]	n/v	-	-	-	-	-	-	-	-	-	-	-	<0.0020	<0.0020	<0.0020	-	-	-	-	-	-
Cyanide (Free)	mg/L	0.0050[B]	0.0050[C]	0.004	**0.006[BC]**	0.004	0.004	0.003	0.004	0.003	0.003	<0.001	0.002	0.003	<0.0020	<0.0020	<0.0020	0.004	0.004	**0.006[BC]**	0.003	0.005	0.002
Cyanide (Strong Acid Dissociable)	mg/L	0.0050[B]	n/v	0.002	**0.006[B]**	<0.002	0.004	0.003	0.004	<0.002	<0.002	0.004	**0.007[B]**	0.002	-	-	-	<0.002	0.002	0.003	<0.002	<0.002	<0.002
Cyanide (Weak Acid Dissociable)	mg/L	0.0050[B]	n/v	0.003	0.002	0.001	0.003	0.005	0.004	0.005	0.002	<0.001	0.004	0.004	<0.0020	<0.0020	<0.0020	<0.001	0.004	0.002	0.002	0.003	<0.001
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	25.2	20.4	27	26.3	30.5	28.6	36.3	40	44.6	41	44	-	-	-	30.6	31.2	20.4	26.2	27.6	26.4
Electrical Conductivity, Lab	µS/cm	n/v	n/v	160	56	72	99	101	107	114	96	102	95	97	27.1	152	26.8	138	160	53	61	62	73
Fluoride	mg/L	0.12[B]	n/v	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.020	0.033	<0.020	0.1	<0.05	<0.05	<0.05	<0.05	<0.05
Hardness (as CaCO3)	mg/L	n/v	n/v	80.8	23.4	34.1	53.1	55.3	52.6	46.4	46.7	43.5	44	45.6	18.2	87.9	18.6	64.6	77.2	22.2	33.8	32.8	36.6
Nitrate (as N)	mg/L	124[A] 3.0[B]	n/v	0.2	0.2	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.020	0.029	<0.020	0.1	0.3	<0.1	0.2	0.2	<0.1
Nitrite (as N)	mg/L	0.060[B]	n/v	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	0.04	0.04	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	7.13	6.65	7.34	7.42	6.92	7.38	7.26	6.98	7.43	6.88	6.59	**6.41[BC]**	7.55	**6.45[BC]**	7.38	7.28	6.64	6.76	6.72	6.89
Phosphorus, Total	mg/L	n/v	$0.030_{\mu4}$[E]	**0.067[E]**	0.03	0.013	0.021	0.03	**0.034[E]**	**0.033[E]**	0.029	0.021	0.019	0.025	0.0215	0.0069	0.0160	**0.037[E]**	**0.044[E]**	**0.033[E]**	0.008	0.008	0.01
Radium-226	Bq/L	n/v	1[C]	-	-	-	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	0.9	0.5	<0.5	<0.5	<0.5	0.6	<0.5	0.6	<0.5	0.6	0.7	<0.30	<0.30	<0.30	0.6	0.8	<0.5	<0.5	<0.5	<0.5
BC MECC Sulfate Guideline (s2)				309	128	218	218	218	218	218	218	218	218	218	128	309	128	218	309	128	218	218	218
Total Dissolved Solids	mg/L	n/v	n/v	135	80	85	100	100	90	95	90	105	100	105	45	111	44	130	140	70	90	85	95
Total Suspended Solids	mg/L	$_{SN}$[B]	n/v	32.7	5	3	8.67	7.5	9	4.3	4.3	4.3	28	5.7	8.0	<3.0	<3.0	3.3	32	3.3	3	3.7	4

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Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				NDR-S-04b (Continued)											NDRS05		NDRS06						
Sample Date				23-Mar-23	18-Apr-23	25-May-23	13-Jun-23	12-Jul-23	15-Aug-23	18-Sep-23	18-Sep-23	16-Oct-23	15-Nov-23	5-Dec-23	1-Jun-22	30-Aug-22	1-Jun-22	28-Feb-23	23-Mar-23	18-Apr-23	24-May-23	24-May-23	29-May-23
Sample ID				NDR-S-04b	NDR-S-04b	NDR-S-04b	NDR-S-04b	NDR-S-04b	NDR-S-04b	NDR-S-04b	SWDup	NDR-S-04b	NDR-S-04b	NDR-S-04b	NDR-S-05	NDRS05	NDR-S-06	NDR-S-06	NDR-S-06	NDR-S-06	NDR-S-06	SWDup1	NDR-S-06
Sampling Company				UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	ALS	ALS	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK
Laboratory Work Order				493844	496175	500390	502693	505909	509308	512902	512902	516043	519511	521073	WT2204941	WT2213095	WT2204941	492012	493844	496175	500390	500390	500662
Laboratory Sample ID				1861885	1869718	1884825	1893193	1904224	1916744	1929232	1929234	1941582	1953842	1958862	WT2204941-003	WT2213095-008	WT2204941-002	1855436	1861886	1869719	1884826	1884838	1885914
Sample Type	Units	CCME	PWQO								Field Duplicate											Field Duplicate	
Metals - Dissolved																							
Aluminum	µg/L	$5/100_{VAR1}$ [B]	n/v	50	70	**115** [B]	75	73	**135** [B]	**117** [B]	**120** [B]	**164** [B]	**146** [B]	**146** [B]	**103** [B]	11.5	**105** [B]	87	70	67	97	**105** [B]	**110** [B]
CWQG Aluminum Guideline				100	100	100	100	100	100	100	100	100	100	5	5	100	5	100	100	100	100	100	100
Aluminum (0.2u)	µg/L	n/v	75^{E}	-	55	**105** [E]	55	54	**107** [E]	-	-	-	-	-	-	-	-	-	-	52	**91** [E]	**87** [E]	**91** [E]
Antimony	µg/L	n/v	20^{E}	<0.5	<0.5	<0.5	0.4	1.2	0.2	<0.1	1.4	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	<1	<1	<1	0.9	1.3	0.9	0.8	0.8	0.8	0.7	0.7	0.67	0.69	0.59	<1	<1	<1	1	<1	<1
Barium	µg/L	n/v	n/v	7	14	4	15.9	13.5	16.4	5.7	6.3	5.5	5.2	6.2	2.88	11	2.41	5	6	6	4	4	5
Beryllium	µg/L	n/v	$11/1,100_{s3}$ [C]	<0.5	<0.5	<0.5	0.05	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PWQO Beryllium Guideline				1100	11	11	11	11	11	11	11	11	11	11	11	1100	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	<1	<1	<1	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<1	<1	<1	<1	<1
Boron	µg/L	$29,000^{A}$ $1,500^{B}$	200_{a} [E]	<2	<2	2	5	4	<2	5	5	3	2	<2	<10	<10	<10	<2	<2	<2	2	2	4
Cadmium	µg/L	1.0_{STB} [A] 0.09_{LTG} [B]	0.2^{C} $0.1/0.5_{s12}$ [E]	<0.1	**<0.1**	**<0.1**	0.05	0.03	0.02	0.02	0.02	0.02	0.03	0.03	0.0179	<0.005	0.0152	<0.1	<0.1	**<0.1**	**<0.1**	**<0.1**	**<0.1**
CWQG Cadmium Guideline (STB)				1.69	0.48	0.7	1.1	1.15	1.09	0.96	0.97	0.9	0.91	0.95	0.37	1.84	0.38	1.35	1.61	0.45	0.7	0.68	0.76
CWQG Cadmium Guideline (LTG)				0.13	0.05	0.06	0.09	0.1	0.09	0.08	0.08	0.08	0.08	0.08	0.04	0.14	0.04	0.11	0.13	0.05	0.06	0.06	0.07
PWQO Cadmium Guideline				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	21,000	6,200	9,150	15,100	14,900	14,100	13,000	13,300	12,900	11,900	12,400	4,730	24,400	4,860	18,000	20,400	5,870	8,620	8,670	10,100
Cerium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	<1	<1	<1	<1	<1	<1
Cesium	µg/L	n/v	n/v	<1	<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<1	<1	<1	<1	<1	<1
Chromium	µg/L	n/v	n/v	2	<1	<1	0.9	0.8	1.1	1.4	1.4	1.2	0.7	1.1	<0.5	<0.5	<0.5	<1	2	<1	<1	<1	1
Cobalt	µg/L	n/v	0.9^{E}	0.1	<0.1	<0.1	0.2	<0.1	0.1	0.1	0.1	<0.1	0.1	0.1	<0.1	<0.1	<0.1	0.2	0.2	<0.1	<0.1	<0.1	0.1
Copper	µg/L	2_{TBC1} [B]	5^{C} $1/5_{s13}$ [E]	1	2	**3** [B]	1.3	1.1	1.8	0.8	0.8	1.9	**2.3** [B]	<0.2	0.49	<0.2	0.38	<1	1	1	<1	1	2
CCME Copper Guideline				2	2	2	2	2	2	2	2	2	2	2	2	2.1	2	2	2	2	2	2	2
PWQO Copper Guideline				5	5	5	5	5	5	5	5	5	5	5	1	5	1	5	5	5	5	5	5
Europium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	<1	<1	<1	<1	<1	<1
Gallium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	<1	<1	<1	<1	<1	<1
Iron	µg/L	300^{B}	300^{C}	**542** [BC]	180	290	**360** [BC]	**480** [BC]	**510** [BC]	**460** [BC]	**460** [BC]	**560** [BC]	**500** [BC]	**580** [BC]	238	115	259	**584** [BC]	**561** [BC]	170	270	270	**310** [BC]
Lanthanum	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	<1	<1	<1	<1	<1	<1
Lead	µg/L	1_{TBC1} [B]	$5/10/20/25_{s14}$ [C] $1/3/5_{s15}$ [E]	<0.1	0.1	0.1	0.24	0.21	0.18	0.13	0.13	0.12	0.14	0.2	0.315	0.051	0.238	0.1	<0.1	<0.1	0.1	0.1	0.1
CCME Lead Guideline				2.4	1	1	1	1	1	1	1	1	1	1	1	2.7	1	1.8	2.3	1	1	1	1
PWQO Lead Guideline (s14)				25	10	10	20	20	20	20	20	10	10	10	5	25	5	20	25	10	10	10	10
PWQO Lead Guideline (s15)				3	1	3	3	3	3	3	3	3	3	3	1	5	1	3	3	1	3	3	3
Lithium	µg/L	n/v	n/v	<5	<5	<5	<1	<1	<1	1	1	<1	<1	<1	<1	1.3	<1	<5	<5	<5	<5	<5	<5
Magnesium	µg/L	n/v	n/v	5,670	1,700	2,340	3,760	3,720	3,610	3,430	3,470	3,550	3,270	3,270	1,560	6,560	1,560	4,860	5,580	1,720	2,300	2,320	2,450
Manganese	µg/L	$3,600_{EQ3}$ [A] 430_{EQ4} [B]	n/v	18	32	27	79.7	85.6	57.5	52.5	52.9	22.8	46.5	58.7	22.9	15.1	24	28	18	36	24	24	28
CCME Manganese Guideline (EQ3)				5520.1	1970.8	2588.2	3818.3	3956.9	3786.8	3391.9	3411.2	3205.1	3237.4	3340.5	1970.8	5943.8	1970.8	4535.5	5303.6	1970.8	2568.2	2501.4	2754.1
CCME Manganese Guideline (EQ4)				590	330	380	490	490	490	380	350	380	350	330	310	490	310	490	560	330	350	350	350
Mercury	µg/L	0.026^{B}	0.2^{C}	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	-	-	-	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***
Mercury (by CV)	µg/L	n/v	n/v	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	-	-	-	<0.01	<0.01	<0.01
Molybdenum	µg/L	73^{B}	40^{E}	<1	<1	<1	2.25	0.67	0.86	0.12	1.32	0.18	0.06	0.17	<0.05	<0.05	<0.05	<1	<1	<1	3	<1	<1
Nickel	µg/L	25_{TBC1} [B]	25^{C}	<1	<1	<1	0.8	0.9	0.9	0.8	0.8	1	0.5	0.8	<0.5	<0.5	<0.5	<1	3	<1	<1	<1	<1
CCME Nickel Guideline				81.3	25	25	25	25	25	25	25	25	25	25	25	86.7	25	68.6	78.5	25	25	25	25
Niobium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	<1	<1	<1	<1	<1	<1
Phosphorus	µg/L	n/v	30_{s4} [E]	***<50***	***<50***	**50** [E]	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***
Potassium	µg/L	n/v	n/v	570	350	200	280	220	180	250	250	250	180	180	124	205	84	390	540	390	200	200	200
Rhodium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	<1	<1	<1	<1	<1	<1
Rubidium	µg/L	n/v	n/v	1	<1	<1	0.8	0.7	0.7	0.9	0.9	0.8	0.5	0.6	0.46	0.56	0.34	<1	1	1	<1	<1	<1
Scandium	µg/L	n/v	n/v	1	<1	<1	<1	<1	<1	1	1	2	1	<1	-	-	-	1	2	<1	<1	<1	<1
Selenium	µg/L	1^{B}	100^{C}	<0.5	<0.2	<0.5	**2.29** [B]	0.6	0.08	0.19	0.23	0.18	0.13	0.15	0.132	0.066	0.126	<0.2	<0.5	<0.2	**2.3** [B]	<0.5	<0.2
Silicon	µg/L	n/v	n/v	3,300	970	<600	610	1,450	1,470	2,280	2,290	2,030	1,900	1,990	162	1,320	124	2,700	3,400	960	<600	<600	<600
Silver	µg/L	0.25^{B}	0.1^{C}	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sodium	µg/L	n/v	n/v	3,670	2,920	2,900	2,420	1,680	4,490	3,170	3,190	4,970	5,250	3,750	350	582	323	2,990	3,650	2,520	2,100	2,100	2,100
Strontium	µg/L	n/v	n/v	28	9	15	23.8	24	22.1	24.1	24	20	18.4	21.1	8.3	50.7	9.16	27	28	9	14	14	14
Sulfur	µg/L	n/v	n/v	<800	<800	<800	2,300	500	<500	2,000	1,800	700	<500	800	<500	<500	<500	<800	<800	<800	<800	<800	4,000
Tellurium	µg/L	n/v	n/v	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<1	<1	<1	<1	<1
Thallium	µg/L	0.8^{B}	0.3_{s} [E]	<0.1	<0.1	<0.1	0.05	<0.01	<0.01	<0.01	0.07	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Thorium	µg/L	n/v	n/v	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<1	<1	<1	<1
Tin	µg/L	n/v	n/v	<1	<1	<1	<0.1	<0.1	0.5	0.3	0.3	0.2	0.2	<0.1	<0.1	0.1	<0.1	<1	<1	<1	<1	<1	<1
Titanium	µg/L	n/v	n/v	3	2	2	2.6	2.7	4.5	3.4	3.4	3.4	3	3.5	2.02	0.3	1.78	4	3	2	2	3	2
Tungsten	µg/L	n/v	30_{s} [E]	<1	<1	<1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<1	<1	<1	<1
Uranium	µg/L	33^{A} 15^{B}	5_{a} [E]	<1	<1	<1	0.04	0.03	0.04	0.04	0.03	0.03	0.03	0.04	0.012	0.013	0.013	<1	<1	<1	<1	<1	<1
Vanadium	µg/L	n/v	6^{E}	<1	<1	<1	0.7	0.8	0.8	0.7	0.7	0.6	<0.5	0.6	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1
Yttrium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	<1	<1	<1	<1	<1	<1
Zinc	µg/L	37_{EQ1} [A] 7.0_{EQ2} [B]	30^{C} 20^{E}	5	5	5	4	2	6	3	3	6	5	6	10.5	14.8	6.1	6	7	4	5	4	5
CCME Zinc Guideline (EQ1)				55.4	19.7	27	39	40.4	38.7	34.9	35.1	33.1	33.4	34.4	16	59.4	16.3	46	53.3	18.9	26.8	26.1	28.6
CCME Zinc Guideline (EQ2)				70.6	29.7	27	38.1	63.2	40.4	43.4	57.1	38.6	59.1	79.7	33.7	59.1	33.3	50.4	65.2	28.5	42.5	43.6	41.3
Zirconium	µg/L	n/v	4_{a} [E]	<1	<1	<1	1	1.1	2	1.4	1.4	0.8	0.8	1.1	<0.3	<0.3	<0.3	<1	<1	<1	<1	<1	<1

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Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				NDR-S-04b (Continued)											NDRS05		NDRS06						
Sample Date				23-Mar-23	18-Apr-23	25-May-23	13-Jun-23	12-Jul-23	15-Aug-23	18-Sep-23	18-Sep-23	16-Oct-23	15-Nov-23	5-Dec-23	1-Jun-22	30-Aug-22	1-Jun-22	28-Feb-23	23-Mar-23	18-Apr-23	24-May-23	24-May-23	29-May-23
Sample ID				NDR-S-04b	NDR-S-04b	NDR-S-04b	NDR-S-04b	NDR-S-04b	NDR-S-04b	NDR-S-04b	SWDup	NDR-S-04b	NDR-S-04b	NDR-S-04b	NDR-S-05	NDRS05	NDR-S-06	NDR-S-06	NDR-S-06	NDR-S-06	NDR-S-06	SWDup1	NDR-S-06
Sampling Company				UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	ALS	ALS	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK
Laboratory Work Order				493844	496175	500390	502693	505909	509308	512902	512902	516043	519511	521073	WT2204941	WT2213095	WT2204941	492012	493844	496175	500390	500390	500662
Laboratory Sample ID				1861885	1869718	1884825	1893193	1904224	1916744	1929232	1929234	1941582	1953842	1958862	WT2204941-003	WT2213095-008	WT2204941-002	1855436	1861886	1869719	1884826	1884838	1885914
Sample Type											Field Duplicate											Field Duplicate	
Metals - Total																							
Aluminum	µg/L	$5/100_{VAR1}$[B]	n/v	**1,300**[B]	**226**[B]	**253**[B]	**253**[B]	**451**[B]	**301**[B]	**229**[B]	**224**[B]	**212**[B]	**209**[B]	**347**[B]	**161**[B]	40.9	**105**[B]	**364**[B]	**350**[B]	**209**[B]	**308**[B]	**307**[B]	**176**[B]
CWQG Aluminum Guideline				100	100	100	100	100	100	100	100	100	100	5	5	100	5	100	100	100	100	100	100
Antimony	µg/L	n/v	20^{E}	<0.5	<0.5	<0.5	0.7	1.1	0.1	0.2	2.5	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	<1	<1	<1	1.1	1.2	0.9	0.8	0.8	0.7	0.6	0.7	0.66	0.75	0.62	<1	<1	<1	1	<1	<1
Barium	µg/L	n/v	n/v	16	4	5	7.8	8.1	7.8	7.7	6.4	6.7	5.8	6.9	4.13	12.3	2.76	6	8	4	5	5	5
Beryllium	µg/L	n/v	$11/1,100_{s3}$[C]	<0.5	<0.5	<0.5	0.15	0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Beryllium	µg/L	n/v	$11/1,100_{s3}$[C]	<0.5	<0.5	<0.5	0.15	0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PWQO Beryllium Guideline				1100	11	11	11	11	11	11	11	11	11	11	11	1100	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	<1	<1	<1	<0.05	<0.05	0.06	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<1	<1	<1	<1	<1
Boron	µg/L	$29,000^{A}$ $1,500^{B}$	200_{a}[E]	<2	<2	2	4	4	<2	5	5	3	<2	<2	<10	<10	<10	<2	<2	<2	2	<2	3
Cadmium	µg/L	1.0_{STB}[A] 0.09_{LTG}[B]	0.2^{C} $0.1/0.5_{s12}$[E]	0.05	0.03	<0.02	**0.151**[BE]	0.04	0.03	0.02	0.04	0.03	0.03	0.03	0.0209	0.0063	0.0158	<0.02	0.03	0.02	0.02	<0.02	0.03
CWQG Cadmium Guideline (STB)				1.69	0.48	0.7	1.1	1.15	1.09	0.96	0.97	0.9	0.91	0.95	0.37	1.84	0.38	1.35	1.61	0.45	0.7	0.68	0.76
CWQG Cadmium Guideline (LTG)				0.13	0.05	0.06	0.09	0.1	0.09	0.08	0.08	0.08	0.08	0.08	0.04	0.14	0.04	0.11	0.13	0.05	0.06	0.06	0.07
PWQO Cadmium Guideline				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	21,300	6,340	8,970	15,000	14,200	14,000	12,900	13,200	12,900	11,800	12,400	4,860	24,900	4,800	17,500	20,600	6,040	8,630	8,550	10,300
Cerium	µg/L	n/v	n/v	2	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	-	-	-	<1	<1	<1	<1	<1	<1
Cesium	µg/L	n/v	n/v	<1	<1	<1	0.02	0.04	0.02	0.01	0.01	<0.01	<0.01	0.02	0.015	<0.01	<0.01	<1	<1	<1	<1	<1	<1
Chromium	µg/L	n/v	n/v	3	<1	<1	1.4	1.4	1	1.3	1.4	1.1	0.8	1.3	<0.5	<0.5	<0.5	1	1	<1	1	1	<1
Cobalt	µg/L	n/v	0.9^{E}	0.8	0.2	0.1	0.4	<0.1	0.3	0.2	0.2	<0.1	0.2	0.2	0.16	0.25	0.11	0.3	0.4	0.2	0.2	0.2	0.2
Copper	µg/L	2_{TBC1}[B]	5^{C} $1/5_{s13}$[E]	1	1	<1	1.1	0.9	**2.5**[B]	1	1.5	1.6	1.7	0.3	0.78	0.62	<0.5	<1	2	1	**52**[BCE]	1	1
CCME Copper Guideline				2	2	2	2	2	2	2	2	2	2	2	2	2.1	2	2	2	2	2	2	2
PWQO Copper Guideline				5	5	5	5	5	5	5	5	5	5	5	1	5	1	5	5	5	5	5	5
Europium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	<1	<1	<1	<1	<1	<1
Gallium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	<1	<1	<1	<1	<1	<1
Iron	µg/L	300^{B}	300^{C}	**2,060**[BC]	**334**[BC]	**400**[BC]	**600**[BC]	**900**[BC]	**600**[BC]	**590**[BC]	**600**[BC]	**640**[BC]	**620**[BC]	**700**[BC]	**302**[BC]	**314**[BC]	278	**940**[BC]	**910**[BC]	**311**[BC]	**460**[BC]	**460**[BC]	**390**[BC]
Lanthanum	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	<1	<1	<1	<1	<1	<1
Lead	µg/L	1_{TBC1}[B]	$5/10/20/25_{s14}$[C] $1/3/5_{s15}$[E]	0.8	0.2	0.2	0.55	0.35	0.54	0.25	0.36	0.58	0.3	0.39	0.459	0.116	0.263	0.3	0.3	0.2	0.2	0.2	0.2
CCME Lead Guideline				2.4	1	1	1	1	1	1	1	1	1	1	1	2.7	1	1.8	2.3	1	1	1	1
PWQO Lead Guideline (s14)				25	10	10	20	20	20	20	20	10	10	10	5	25	5	20	25	10	10	10	10
PWQO Lead Guideline (s15)				3	1	3	3	3	3	3	3	3	3	3	1	5	1	3	3	1	3	3	3
Lithium	µg/L	n/v	n/v	<5	<5	<5	<1	1	<1	1	1	<1	<1	<1	<1	1.1	<1	<5	<5	<5	<5	<5	<5
Magnesium	µg/L	n/v	n/v	6,110	1,790	2,340	3,810	3,750	3,720	3,480	3,510	3,520	3,290	3,350	1,520	6,660	1,560	4,790	5,730	1,740	2,380	2,380	2,470
Manganese	µg/L	$3,600_{EQ3}$[A] 430_{EQ4}[B]	n/v	157	38	30	98.3	98.5	73.2	63.1	64	28.4	70.4	73.4	30	78.4	26.2	38	35	42	36	30	35
CCME Manganese Guideline (EQ3)				5520.1	1970.8	2588.2	3818.3	3956.9	3786.8	3391.9	3411.2	3205.1	3237.4	3340.5	1970.8	5943.8	1970.8	4535.5	5303.6	1970.8	2568.2	2501.4	2754.1
CCME Manganese Guideline (EQ4)				590	330	380	490	490	490	380	350	380	350	330	310	490	310	490	560	330	350	350	350
Mercury	µg/L	0.026^{B}	0.2^{C}	***<0.1***	***<0.1***	-	-	-	-	-	-	<0.01	<0.01	<0.01	-	-	-	***<0.1***	***<0.1***	***<0.1***	-	-	-
Mercury (Trace)	ng/L	n/v	n/v	3.96	6.46	6.07	3.44	3.45	4.56	4.04	4.17	3.36	5.47	3.78	<0.5	<0.5	0.73	3.57	3.15	6.56	6.2	5.96	5.72
Mercury (by CV)	ng/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl Mercury	ng/L	4^{B}	n/v	-	-	0.13	0.23	0.18	0.24	0.12	0.12	0.12	0.20	1.62	0.11	0.04	0.10	-	-	-	0.14	0.14	0.18
Molybdenum	µg/L	73^{B}	40^{E}	<1	<1	<1	2.02	0.71	0.6	0.1	1	0.19	<0.05	0.06	<0.05	<0.05	<0.05	<1	<1	<1	2	<1	<1
Nickel	µg/L	25_{TBC1}[B]	25^{C}	<1	<1	1	1.3	1.2	0.8	0.7	0.8	0.9	<0.5	0.9	0.57	<0.5	<0.5	<1	4	<1	<1	<1	<1
CCME Nickel Guideline				81.3	25	25	25	25	25	25	25	25	25	25	25	86.7	25	68.6	78.5	25	25	25	25
Niobium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	<1	<1	<1	<1	<1	<1
Phosphorus	µg/L	n/v	30_{s4}[E]	-	-	-	-	-	-	-	-	-	-	-	***<50***	***<50***	***<50***	-	-	-	-	-	-
Potassium	µg/L	n/v	n/v	750	380	200	310	290	210	280	280	260	180	220	153	272	80	450	620	430	200	200	200
Rhodium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	<1	<1	<1	<1	<1	<1
Rubidium	µg/L	n/v	n/v	3	1	<1	1.1	1.3	0.9	1.1	1.1	0.8	0.6	0.9	0.6	0.72	0.34	1	2	1	<1	<1	<1
Scandium	µg/L	n/v	n/v	2	<1	<1	<1	1	<1	1	1	2	1	1	-	-	-	1	2	<1	<1	<1	<1
Selenium	µg/L	1^{B}	100^{C}	<0.5	<0.2	<0.5	**1.69**[B]	0.33	0.1	0.22	0.29	0.14	0.13	0.16	0.114	0.071	0.09	<0.2	<0.5	<0.2	**2**[B]	<0.5	<0.2
Silicon	µg/L	n/v	n/v	4,900	1,200	<600	1,250	2,220	1,670	2,500	2,500	2,150	1,940	2,280	360	1,370	160	3,200	3,800	1,200	600	600	<600
Silver	µg/L	0.25^{B}	0.1^{C}	<0.1	<0.1	<0.1	**0.11**[C]	<0.01	<0.01	<0.01	<0.01	**0.17**[C]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sodium	µg/L	n/v	n/v	3,540	2,970	2,900	2,420	1,650	4,330	3,190	3,220	4,920	5,100	3,650	697	568	279	2,900	3,720	2,600	2,100	2,100	2,100
Strontium	µg/L	n/v	n/v	32	10	15	23.6	24.5	22.2	24.2	24.3	20.1	18.4	21.5	9.32	51.3	9.38	27	29	9	15	15	15
Sulfur	µg/L	n/v	n/v	<800	<800	<800	2,900	<500	<500	2,100	1,900	<500	<500	600	<500	<500	<500	<800	<800	<800	<800	<800	3,800
Tellurium	µg/L	n/v	n/v	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<1	<1	<1	<1	<1
Thallium	µg/L	0.8^{B}	0.3_{s}[E]	<0.1	<0.1	<0.1	0.12	<0.01	<0.01	<0.01	0.07	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Thorium	µg/L	n/v	n/v	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<1	<1	<1	<1
Tin	µg/L	n/v	n/v	<1	<1	<1	0.6	0.2	0.2	0.6	0.6	0.2	0.4	<0.1	<0.1	0.22	<0.1	<1	<1	<1	<1	<1	9
Titanium	µg/L	n/v	n/v	49	9	7	8.4	15.3	10.5	6.7	6.4	5	5.2	12.8	4.96	<3	2.21	15	14	8	10	10	5
Tungsten	µg/L	n/v	30_{s}[E]	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<1	<1	<1	<1
Uranium	µg/L	33^{A} 15^{B}	5_{a}[E]	<1	<1	<1	0.05	0.05	0.05	0.03	0.03	0.03	0.04	0.04	0.02	0.016	0.013	<1	<1	<1	<1	<1	<1
Vanadium	µg/L	n/v	6^{E}	2	<1	<1	1.2	1.3	0.9	0.8	0.9	0.6	0.6	0.8	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1
Yttrium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	<1	<1	<1	<1	<1	<1
Zinc	µg/L	37_{EQ1}[A] 7.0_{EQ2}[B]	30^{C} 20^{E}	11	4	8	4	3	8	3	3	14	6	7	11.4	13.6	5.8	5	11	4	6	4	5
CCME Zinc Guideline (EQ1)				55.4	19.7	27	39	40.4	38.7	34.9	35.1	33.1	33.4	34.4	16	59.4	16.3	46	53.3	18.9	26.8	26.1	28.6
CCME Zinc Guideline (EQ2)				70.6	29.7	27	38.1	63.2	40.4	43.4	57.1	38.6	59.1	79.7	33.7	59.1	33.3	50.4	65.2	28.5	42.5	43.6	41.3
Zirconium	µg/L	n/v	4_{a}[E]	2	<1	<1	1.5	1.7	2	1.6	1.6	0.9	1	1.3	<0.2	<0.2	<0.2	1	1	<1	<1	<1	<1

See notes on last page

Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				NDRS06 (Continued)										NDR-TRIB-01					NDR-TRIB-02				PC-01	
Sample Date				31-May-23	7-Jun-23	4-Jul-23	2-Aug-23	11-Sep-23	30-Oct-23	21-Nov-23	21-Nov-23	6-Dec-23	11-Aug-21	19-Oct-21	7-Jun-22	31-Aug-22	18-Oct-22	11-Aug-21	20-Oct-21	7-Jun-22	16-Oct-22	10-Mar-23	19-Apr-23
Sample ID				NDR-S-06B	NDR-S-06	NDR-S-06	NDR-S-06	NDR-S-06	NDR-S-06	NDR-S-06	SWDup	NDR-S-06	NDR-TRIB-01	NDR-TRIB-01	NDR-TRIB-01	NDRTRIB01	NDR-TRIB-01	NDR-TRIB-02	NDR-TRIB-02	NDR-TRIB-02	NDR-TRIB-02	PC-01	PC-01
Sampling Company				UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				ALS	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	TESTMARK	TESTMARK
Laboratory Work Order				WT2315817	502041	504663	507996	512131	517457	519857	519857	521230	L2626399	L2657480	WT2205411	WT2213093	WT2219907	L2626399	L2657480	WT2205411	WT2218393	492826	496342
Laboratory Sample ID				WT2315817-003	1890730	1899886	1911840	1926480	1946541	1954956	1954959	1959316	L2626399-3	L2657480-1	WT2205411-008	WT2213093-004	WT2219907-010	L2626399-2	L2657480-3	WT2205411-007	WT2218393-008	1858178	1870247
Sample Type											Field Duplicate													
Field Parameters																								
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	-	**6.47[BC]**	**6.06[BC]**	**5.8[BC]**	**6.18[BC]**	**4.86[BC]**	**5.71[BC]**	-	6.78	-	-	-	-	-	-	-	-	-	6.99	**6.3[BC]**
Temperature, Field	deg C	n/v	30_{96}[C]	-	15.84	24.29	17.69	13.24	8.84	0.09	-	1.35	-	-	-	-	-	-	-	-	-	0	0.02
General Chemistry																								
Acidity as CaCO3	mg/L	n/v	n/v	6.6	6	8	9	6	5	8	8	10	8.5	10.5	<2.0	<2.0	<2.0	12.1	16.7	3.3	8.0	9	6
Alkalinity, Total	mg/L	n/v	n/v	4.8	39	46	69	52	31	27	29	38	71.9	68.9	45.3	60.8	47.3	<1.0	9.3	8.5	7.5	56	25
Ammonia (as N)	mg/L	[B] TBC2	n/v	0.0129	0.044	0.047	0.04	0.045	0.056	0.058	0.058	0.062	0.011	0.024	0.0116	0.0167	0.0608	<0.010	0.09	0.0150	0.0160	0.053	0.057
Bromide	mg/L	n/v	n/v	<0.1	-	-	-	-	-	-	-	-	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	-	-	-
Chloride	mg/L	640[A] 120[B]	n/v	<0.5	1.8	1.7	3.5	1.6	3.9	5.3	5.4	3.2	<0.50	<0.50	<0.50	<0.50	4.92	<0.50	<0.50	<0.50	<0.50	0.4	0.2
Chrysotile Asbestos (>0.5 um)	MFL	n/v	n/v	-	-	-	-	-	-	-	-	<0.19	-	-	-	-	-	-	-	-	-	-	-
Chrysotile Asbestos (>10 um)	MFL	n/v	n/v	-	-	-	-	-	-	-	-	<0.19	-	-	-	-	-	-	-	-	-	-	-
Cyanide	mg/L	0.0050[B]	n/v	-	-	-	-	-	-	-	-	-	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	-	-
Cyanide (Free)	mg/L	0.0050[B]	0.0050[C]	<0.002	<0.001	0.002	0.005	0.002	<0.001	**0.007[BC]**	0.005	<0.001	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.003	0.003
Cyanide (Strong Acid Dissociable)	mg/L	0.0050[B]	n/v	<0.002	0.004	0.005	0.003	**0.008[B]**	<0.002	0.005	0.004	<0.002	-	-	-	-	-	-	-	-	-	<0.002	**0.008[B]**
Cyanide (Weak Acid Dissociable)	mg/L	0.0050[B]	n/v	<0.002	<0.001	0.004	<0.001	0.003	0.002	0.003	0.002	0.004	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.003	0.002
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	-	28.8	30.9	30	34	47	44	44	43	-	-	-	-	-	-	-	-	-	36.6	29.4
Electrical Conductivity, Lab	µS/cm	n/v	n/v	22.9	80	95	154	110	83	80	81	89	135	124	85.2	123	110	37.3	35.7	30.0	29.9	111	52
Fluoride	mg/L	0.12[B]	n/v	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	0.034	0.03	0.024	0.032	0.021	<0.020	<0.020	<0.020	<0.020	<0.05	<0.05
Hardness (as CaCO3)	mg/L	n/v	n/v	15.8	50.4	52.2	78.5	57.4	44.3	45.2	43.5	44.7	73.4	69	49.0	68.3	56.2	22.4	26.9	22.3	21.9	61.7	30.4
Nitrate (as N)	mg/L	124[A] 3.0[B]	n/v	<0.02	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.2	0.1	<0.020	<0.020	<0.020	0.030	0.020	<0.020	0.029	<0.020	0.055	0.2	0.4
Nitrite (as N)	mg/L	0.060[B]	n/v	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.04	0.04	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.01	<0.01
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	**5.95[BC]**	7.19	7.02	7.34	7.32	7.06	6.63	6.67	6.68	7.35	7.82	7.32	7.37	7.56	**6.21[BC]**	**6.3[BC]**	**6.42[BC]**	**6.31[BC]**	7.65	6.51
Phosphorus, Total	mg/L	n/v	0.030_{94}[E]	0.0027	**0.034[E]**	**0.033[E]**	**0.047[E]**	**0.043[E]**	0.017	0.02	0.018	0.018	**0.0433[E]**	0.018	0.0155	0.0144	0.0110	0.0262	0.0178	0.0133	0.0083	0.028	0.03
Radium-226	Bq/L	n/v	1[C]	-	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	0.8	<0.5	<0.30	0.33	<0.30	1.18	<0.30	<0.30	<0.30	<0.30	<0.30	1.1	1.2
BC MECC Sulfate Guideline (s2)				128	218	218	309	218	218	218	218	218	218	218	218	218	218	128	128	128	128	218	128
Total Dissolved Solids	mg/L	n/v	n/v	78	100	105	120	95	110	120	125	105	99	74	74	59	107	78	93	62	76	140	80
Total Suspended Solids	mg/L	[B] SN	n/v	<3	11.7	11.5	12.5	7.67	4	4	1.3	4.7	<3.0	6.6	6.6	<3.0	3.9	5.5	<3.0	4.6	<3.0	4.3	3

See notes on last page

Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				NDRS06 (Continued)										NDR-TRIB-01					NDR-TRIB-02					PC-01	
Sample Date				31-May-23	7-Jun-23	4-Jul-23	2-Aug-23	11-Sep-23	30-Oct-23	21-Nov-23	21-Nov-23	6-Dec-23	11-Aug-21	19-Oct-21	7-Jun-22	31-Aug-22	18-Oct-22	11-Aug-21	20-Oct-21	7-Jun-22	16-Oct-22	10-Mar-23	19-Apr-23
Sample ID				NDR-S-06B	NDR-S-06	NDR-S-06	NDR-S-06	NDR-S-06	NDR-S-06	NDR-S-06	SWDup	NDR-S-06	NDR-TRIB-01	NDR-TRIB-01	NDR-TRIB-01	NDRTRIB01	NDR-TRIB-01	NDR-TRIB-02	NDR-TRIB-02	NDR-TRIB-02	NDR-TRIB-02	PC-01	PC-01
Sampling Company				UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				ALS	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	TESTMARK	TESTMARK
Laboratory Work Order				WT2315817	502041	504663	507996	512131	517457	519857	519857	521230	L2626399	L2657480	WT2205411	WT2213093	WT2219907	L2626399	L2657480	WT2205411	WT2218393	492826	496342
Laboratory Sample ID				WT2315817-003	1890730	1899886	1911840	1926480	1946541	1954956	1954959	1959316	L2626399-3	L2657480-1	WT2205411-008	WT2213093-004	WT2219907-010	L2626399-2	L2657480-3	WT2205411-007	WT2218393-008	1858178	1870247
Sample Type	Units	CCME	PWQO								Field Duplicate														
Metals - Dissolved																									
Aluminum	µg/L	$5/100_{VAR1}$ [B]	n/v	**61.8** [B]	100	65	69	**128** [B]	**140** [B]	**164** [B]	**165** [B]	**139** [B]	25.3	26.3	51.4	17.7	**124** [B]	**100** [B]	**193** [B]	**163** [B]	**128** [B]	**192** [B]	**132** [B]
CWQG Aluminum Guideline				5	100	100	100	100	100	100	100	100	100	100	100	100	100	5	5	5	5	100	5
Aluminum (0.2u)	µg/L	n/v	75^{E}	-	**78** [E]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**116** [E]
Antimony	µg/L	n/v	20^{E}	<0.1	<0.1	-	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	0.85	0.8	-	1.1	0.9	0.7	0.7	0.7	0.8	0.94	0.55	0.54	0.62	0.81	0.93	0.88	0.86	0.6	<1	<1
Barium	µg/L	n/v	n/v	2.36	5	-	18.4	4.8	4.7	4.9	5.2	5.7	8.97	6.8	6.1	7.2	7.34	3.27	4.15	4.03	3.63	8	15
Beryllium	µg/L	n/v	$11/1,100_{s3}$ [C]	<0.02	<0.02	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.1	<0.02	<0.02	<0.02	<0.1	<0.1	<0.02	<0.02	<0.5	<0.5
PWQO Beryllium Guideline				11	11	11	1100	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<1
Boron	µg/L	$29,000^{A}$ $1,500^{B}$	200_{a} [E]	<10	5	-	3	4	3	3	2	<2	<10	<10	<10	<10	<10	<10	<10	<10	<10	3	3
Cadmium	µg/L	1.0_{STB} [A] 0.09_{LTG} [B]	0.2^{C} $0.1/0.5_{s12}$ [E]	0.0269	0.02	-	0.03	0.01	0.02	0.02	0.02	0.02	<0.005	<0.005	0.0088	<0.005	0.0139	0.0228	0.0263	0.0336	0.0184	<0.1	**<0.1**
CWQG Cadmium Guideline (STB)				0.32	1.05	1.08	1.64	1.19	0.92	0.94	0.9	0.93	1.53	1.44	1.02	1.42	1.17	0.46	0.55	0.46	0.45	1.29	0.63
CWQG Cadmium Guideline (LTG)				0.04	0.09	0.09	0.13	0.1	0.08	0.08	0.08	0.08	0.12	0.12	0.09	0.12	0.1	0.05	0.05	0.05	0.04	0.11	0.06
PWQO Cadmium Guideline				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	4,010	13,600	-	22,500	15,100	11,800	12,100	12,000	13,200	21,100	19,300	14,200	18,700	15,600	6,190	7,040	6,160	5,900	17,400	8,430
Cerium	µg/L	n/v	n/v	-	<1	-	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	<1	<1
Cesium	µg/L	n/v	n/v	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<1	<1
Chromium	µg/L	n/v	n/v	<0.5	0.9	-	0.8	1	1	0.7	0.6	0.9	0.24	0.22	<0.5	<0.5	<0.5	0.6	0.51	<0.5	<0.5	2	<1
Cobalt	µg/L	n/v	0.9^{E}	<0.1	0.3	-	0.2	0.2	<0.1	<0.1	<0.1	0.1	0.64	<0.1	<0.1	0.12	0.11	0.81	0.11	0.16	<0.1	<0.1	<0.1
Copper	µg/L	2_{TBC1} [B]	5^{C} $1/5_{s13}$ [E]	0.53	**2.2** [B]	-	2	**2.2** [B]	1.5	0.4	1.1	1	<0.2	0.34	0.5	0.26	0.65	<0.2	0.61	0.59	0.48	1	2
CCME Copper Guideline				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline				1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Europium	µg/L	n/v	n/v	-	<1	-	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	<1	<1
Gallium	µg/L	n/v	n/v	-	<1	-	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	<1	<1
Iron	µg/L	300^{B}	300^{C}	193	**350** [BC]	-	**430** [BC]	**440** [BC]	**440** [BC]	**450** [BC]	**450** [BC]	**580** [BC]	**530** [BC]	156	198	273	**464** [BC]	**586** [BC]	**521** [BC]	**472** [BC]	**442** [BC]	**516** [BC]	180
Lanthanum	µg/L	n/v	n/v	-	<1	-	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	<1	<1
Lead	µg/L	1_{TBC1} [B]	$5/10/20/25_{s14}$ [C] $1/3/5_{s15}$ [E]	0.483	0.16	-	0.18	0.11	0.12	0.12	0.15	0.16	<0.05	0.057	<0.05	0.055	0.131	0.471	0.366	0.363	0.229	0.1	0.1
CCME Lead Guideline				1	1	1	2.3	1	1	1	1	1	2.1	2	1	2	1	1	1	1	1	1.7	1
PWQO Lead Guideline (s14)				5	10	20	20	20	10	10	10	10	20	20	20	20	20	5	5	5	5	20	10
PWQO Lead Guideline (s15)				1	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1	1	1	3	1
Lithium	µg/L	n/v	n/v	<1	1	-	<1	<1	<1	1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<5
Magnesium	µg/L	n/v	n/v	1,410	3,610	-	5,430	4,110	3,280	3,520	3,490	3,690	5,990	5,100	3,290	5,250	4,180	1,920	2,170	1,690	1,740	4,350	2,290
Manganese	µg/L	$3,600_{EQ3}$ [A] 430_{EQ4} [B]	n/v	25.1	51.1	-	90.6	49.4	19.6	21.3	21.3	39.8	**525** [B]	28.2	31.4	78.8	39.9	241	17.6	39.2	8.62	15	7
CCME Manganese Guideline (EQ3)				1970.8	3647.3	3761.5	5381.9	4088.5	3256.7	3314.8	3205.1	3282.6	5073.7	4805.6	3558.2	4762.8	4013.4	1970.8	2101.7	1970.8	1970.8	4356.2	2339.9
CCME Manganese Guideline (EQ4)				290	500	500	560	490	380	330	330	330	490	390	380	490	430	290	310	310	310	430	330
Mercury	µg/L	0.026^{B}	0.2^{C}	-	***<0.1***	-	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	0.000136	0.000106	-	-	-	0.000127	0.000229	-	-	***<0.1***	***<0.1***
Mercury (by CV)	µg/L	n/v	n/v	-	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	<0.05	0.45	-	0.32	0.1	<0.05	<0.05	0.1	0.13	<0.05	0.053	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<1
Nickel	µg/L	25_{TBC1} [B]	25^{C}	<0.5	0.7	-	1	0.5	0.7	0.6	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	0.52	0.51	0.59	0.52	<0.5	<1	<1
CCME Nickel Guideline				25	25	25	79.5	25	25	25	25	25	75.6	72.1	25	71.5	25	25	25	25	25	66.2	25
Niobium	µg/L	n/v	n/v	-	<1	-	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	<1	<1
Phosphorus	µg/L	n/v	30_{s4} [E]	***<50***	***<50***	-	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	<30	<30	***<50***	***<50***	***<50***	<30	<30	***<50***	***<50***	***<50***	***<50***
Potassium	µg/L	n/v	n/v	92	260	-	290	330	200	160	160	190	324	493	295	367	310	109	164	50	284	390	340
Rhodium	µg/L	n/v	n/v	-	<1	-	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	<1	<1
Rubidium	µg/L	n/v	n/v	0.34	0.7	-	0.9	1	0.6	0.4	0.4	0.6	1.14	1.18	0.67	0.94	0.68	0.35	0.68	0.22	1.09	<1	1
Scandium	µg/L	n/v	n/v	-	<1	-	<1	1	<1	1	<1	<1	-	-	-	-	-	-	-	-	-	<1	<1
Selenium	µg/L	1^{B}	100^{C}	0.153	0.14	-	<0.05	0.13	0.15	0.13	0.09	0.15	0.07	0.066	0.102	0.107	0.156	0.093	0.151	0.153	0.126	<0.2	<0.2
Silicon	µg/L	n/v	n/v	516	590	-	1,100	1,770	1,540	1,810	1,820	2,090	1,580	1,490	642	990	1,780	3,100	1,930	490	1,130	2,500	1,400
Silver	µg/L	0.25^{B}	0.1^{C}	<0.01	0.01	-	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1
Sodium	µg/L	n/v	n/v	523	2,170	-	3,360	2,190	3,110	4,000	3,950	2,980	1,270	1,380	923	1,280	3,910	432	622	482	463	1,850	710
Strontium	µg/L	n/v	n/v	7.55	19.8	-	32.3	24.7	17.7	16.1	16	19.5	36.5	32.7	24.2	34.4	29.4	13.8	13.7	13.1	11.2	31	13
Sulfur	µg/L	n/v	n/v	<500	1,700	-	<500	<500	600	<500	<500	1,300	<500	<500	<500	<500	<500	<500	<500	<500	<500	<800	<800
Tellurium	µg/L	n/v	n/v	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<1
Thallium	µg/L	0.8^{B}	0.3_{s} [E]	<0.01	0.02	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1
Thorium	µg/L	n/v	n/v	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1
Tin	µg/L	n/v	n/v	<0.1	<0.1	-	0.3	0.2	0.1	0.3	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1
Titanium	µg/L	n/v	n/v	0.72	3.5	-	4.4	3.2	2.7	3.3	3.3	3.8	0.65	0.83	1.2	0.45	2.17	2.72	5.21	4.25	3.45	4	3
Tungsten	µg/L	n/v	30_{a} [E]	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1
Uranium	µg/L	33^{A} 15^{B}	5_{a} [E]	<0.01	0.04	-	0.04	0.04	0.03	0.03	0.03	0.04	0.012	0.024	0.031	0.019	0.053	<0.01	0.017	0.018	0.016	<1	<1
Vanadium	µg/L	n/v	6^{E}	<0.5	0.8	-	0.7	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1
Yttrium	µg/L	n/v	n/v	-	<1	-	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	<1	<1
Zinc	µg/L	37_{EQ1} [A] 7.0_{EQ2} [B]	30^{C} 20^{E}	8.8	4	-	3	2	5	4	5	6	2.7	1.8	3.8	6.6	5.2	6.4	6.4	9.7	7.6	3	6
CCME Zinc Guideline (EQ1)				14.2	37.4	38.5	54.1	41.7	33.6	34.1	33.1	33.8	51.1	48.6	36.5	48.2	40.9	19	22.2	19	18.7	44.3	24.5
CCME Zinc Guideline (EQ2)				42.8	45.4	55.4	62.1	49.3	54.2	76.5	71.4	72	58.6	37.7	41	53.9	38.4	48.2	53.3	40.5	43.5	41.5	49.3
Zirconium	µg/L	n/v	4_{a} [E]	<0.3	0.8	-	1.6	1.9	0.7	0.8	0.8	1.1	<0.2	<0.2	<0.3	<0.3	<0.3	<0.2	0.24	<0.3	<0.3	1	1

See notes on last page

Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				NDRS06 (Continued)									NDR-TRIB-01					NDR-TRIB-02				PC-01	
Sample Date				31-May-23	7-Jun-23	4-Jul-23	2-Aug-23	11-Sep-23	30-Oct-23	21-Nov-23	21-Nov-23	6-Dec-23	11-Aug-21	19-Oct-21	7-Jun-22	31-Aug-22	18-Oct-22	11-Aug-21	20-Oct-21	7-Jun-22	16-Oct-22	10-Mar-23	19-Apr-23
Sample ID				NDR-S-06B	NDR-S-06	NDR-S-06	NDR-S-06	NDR-S-06	NDR-S-06	NDR-S-06	SWDup	NDR-S-06	NDR-TRIB-01	NDR-TRIB-01	NDR-TRIB-01	NDRTRIB01	NDR-TRIB-01	NDR-TRIB-02	NDR-TRIB-02	NDR-TRIB-02	NDR-TRIB-02	PC-01	PC-01
Sampling Company				UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				ALS	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	TESTMARK	TESTMARK
Laboratory Work Order				WT2315817	502041	504663	507996	512131	517457	519857	519857	521230	L2626399	L2657480	WT2205411	WT2213093	WT2219907	L2626399	L2657480	WT2205411	WT2218393	492826	496342
Laboratory Sample ID				WT2315817-003	1890730	1899886	1911840	1926480	1946541	1954956	1954959	1959316	L2626399-3	L2657480-1	WT2205411-008	WT2213093-004	WT2219907-010	L2626399-2	L2657480-3	WT2205411-007	WT2218393-008	1858178	1870247
Sample Type											Field Duplicate												
Metals - Total																							
Aluminum	µg/L	$5/100_{VAR1}$[B]	n/v	**64.1**[B]	**292**[B]	**900**[B]	**1,330**[B]	**260**[B]	**208**[B]	**314**[B]	**337**[B]	**321**[B]	31	49.1	72.4	33.6	**202**[B]	**108**[B]	**206**[B]	**202**[B]	**127**[B]	**387**[B]	**198**[B]
CWQG Aluminum Guideline				5	100	100	100	100	100	100	100	100	100	100	100	100	100	5	5	5	5	100	5
Antimony	µg/L	n/v	20^{E}	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	0.78	0.8	1	1.2	0.9	0.7	0.8	0.7	0.7	1.04	0.56	0.57	0.64	0.9	0.97	0.89	0.84	0.62	<1	<1
Barium	µg/L	n/v	n/v	2.32	7.4	11.9	15.7	6.3	6.8	5.6	5.6	5.9	9.05	7.02	6.07	7.19	7.92	3.73	5.8	6.64	3.45	9	5
Beryllium	µg/L	n/v	$11/1,100_{s3}$[C]	<0.02	0.02	0.03	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.1	<0.02	<0.02	<0.02	<0.1	<0.1	<0.02	<0.02	<0.5	<0.5
Beryllium	µg/L	n/v	$11/1,100_{s3}$[C]	<0.02	0.02	0.03	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.1	<0.02	<0.02	<0.02	<0.1	<0.1	<0.02	<0.02	<0.5	<0.5
PWQO Beryllium Guideline				11	11	11	1100	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<1
Boron	µg/L	$29,000^{A}$ $1,500^{B}$	200_{a}[E]	<10	5	5	2	3	2	3	2	<2	<10	<10	<10	<10	<10	<10	<10	<10	<10	2	2
Cadmium	µg/L	1.0_{STB}[A] 0.09_{LTG}[B]	0.2^{C} $0.1/0.5_{s12}$[E]	0.0276	0.04	0.05	0.04	0.03	0.02	0.02	0.02	0.03	<0.005	<0.005	0.0084	<0.005	0.0152	0.0231	0.0344	0.0354	0.0158	0.02	0.05
CWQG Cadmium Guideline (STB)				0.32	1.05	1.08	1.64	1.19	0.92	0.94	0.9	0.93	1.53	1.44	1.02	1.42	1.17	0.46	0.55	0.46	0.45	1.29	0.63
CWQG Cadmium Guideline (LTG)				0.04	0.09	0.09	0.13	0.1	0.08	0.08	0.08	0.08	0.12	0.12	0.09	0.12	0.1	0.05	0.05	0.05	0.04	0.11	0.06
PWQO Cadmium Guideline				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	3,960	13,600	15,100	20,600	14,800	12,600	12,000	12,000	13,100	20,600	19,000	13,400	18,300	17,300	6,130	7,160	6,020	5,700	16,800	8,880
Cerium	µg/L	n/v	n/v	-	1	2	2	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	<1	<1
Cesium	µg/L	n/v	n/v	0.01	0.02	0.09	0.13	0.02	<0.01	0.01	0.02	0.02	<0.01	<0.01	<0.01	<0.01	0.011	<0.01	<0.01	0.013	<0.01	<1	<1
Chromium	µg/L	n/v	n/v	<0.5	1	2.4	2.6	0.8	1.2	0.8	0.8	1.1	<0.5	<0.5	<0.5	<0.5	0.64	0.58	0.55	0.59	<0.5	1	<1
Cobalt	µg/L	n/v	0.9^{E}	<0.1	0.4	0.6	0.7	0.3	0.1	<0.1	<0.1	0.2	0.76	<0.1	<0.1	0.19	0.15	0.87	0.22	0.51	<0.1	0.1	<0.1
Copper	µg/L	2_{TBC1}[B]	5^{C} $1/5_{s13}$[E]	0.54	**3.6**[B]	**4.6**[B]	1.8	1.1	1.4	0.6	0.6	<0.2	<0.5	0.53	0.58	<0.5	0.82	<0.5	0.87	0.67	<0.5	2	2
CCME Copper Guideline				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline				1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Europium	µg/L	n/v	n/v	-	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	<1	<1
Gallium	µg/L	n/v	n/v	-	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	<1	<1
Iron	µg/L	300^{B}	300^{C}	207	**570**[BC]	**1,100**[BC]	**1,500**[BC]	**710**[BC]	**530**[BC]	**610**[BC]	**610**[BC]	**700**[BC]	**791**[BC]	220	254	**384**[BC]	**594**[BC]	**677**[BC]	**585**[BC]	**640**[BC]	**424**[BC]	**690**[BC]	243
Lanthanum	µg/L	n/v	n/v	-	<1	<1	1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	<1	<1
Lead	µg/L	1_{TBC1}[B]	$5/10/20/25_{s14}$[C] $1/3/5_{s15}$[E]	0.492	0.33	0.65	0.64	0.31	0.22	0.2	0.2	0.23	0.077	0.056	0.065	0.061	0.204	0.579	0.528	0.656	0.238	0.3	0.2
CCME Lead Guideline				1	1	1	2.3	1	1	1	1	1	2.1	2	1	2	1	1	1	1	1	1.7	1
PWQO Lead Guideline (s14)				5	10	20	20	20	10	10	10	10	20	20	20	20	20	5	5	5	5	20	10
PWQO Lead Guideline (s15)				1	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1	1	1	3	1
Lithium	µg/L	n/v	n/v	<1	1	2	2	<1	<1	1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<5
Magnesium	µg/L	n/v	n/v	1,440	3,690	4,040	5,510	4,120	3,410	3,500	3,560	3,710	5,300	5,220	3,700	5,210	4,090	1,730	2,180	1,750	1,660	4,270	2,370
Manganese	µg/L	$3,600_{EQ3}$[A] 430_{EQ4}[B]	n/v	26.2	68.2	144	129	63.4	27.7	29.4	27.6	44.7	**550**[B]	38.7	44.7	147	47	278	39.1	121	8.82	27	8
CCME Manganese Guideline (EQ3)				1970.8	3647.3	3761.5	5381.9	4088.5	3256.7	3314.8	3205.1	3282.6	5073.7	4805.6	3558.2	4762.8	4013.4	1970.8	2101.7	1970.8	1970.8	4356.2	2339.9
CCME Manganese Guideline (EQ4)				290	500	500	560	490	380	330	330	330	490	390	380	490	430	290	310	310	310	430	330
Mercury	µg/L	0.026^{B}	0.2^{C}	-	-	-	-	-	-	<0.01	<0.01	<0.01	-	-	-	-	-	-	-	-	-	***<0.1***	***<0.1***
Mercury (Trace)	ng/L	n/v	n/v	<5	3.64	3.36	2.05	3.26	5.64	3.21	4.35	2.12	1.04	1.07	5.22	0.84	2.12	1.41	1.40	4.98	3.23	6.02	10.4
Mercury (by CV)	ng/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl Mercury	ng/L	4^{B}	n/v	-	0.14	0.11	0.08	0.12	0.30	0.81	0.17	0.15	-	-	0.18	0.12	0.17	-	-	0.14	0.09	-	-
Molybdenum	µg/L	73^{B}	40^{E}	<0.05	0.18	<0.05	0.16	0.09	0.14	<0.05	<0.05	<0.05	0.055	0.066	0.055	0.05	0.068	<0.05	<0.05	<0.05	<0.05	<1	<1
Nickel	µg/L	25_{TBC1}[B]	25^{C}	<0.5	0.8	1.9	1.9	0.8	0.7	0.9	<0.5	0.9	<0.5	0.67	<0.5	<0.5	0.58	0.56	1.05	0.63	<0.5	<1	<1
CCME Nickel Guideline				25	25	25	79.5	25	25	25	25	25	75.6	72.1	25	71.5	25	25	25	25	25	66.2	25
Niobium	µg/L	n/v	n/v	-	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	<1	<1
Phosphorus	µg/L	n/v	30_{s4}[E]	***<50***	-	-	-	-	-	-	-	-	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	**55**[E]	***<50***	-	-
Potassium	µg/L	n/v	n/v	87	300	450	590	360	190	190	200	240	306	483	320	365	352	96	201	230	285	440	400
Rhodium	µg/L	n/v	n/v	-	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	<1	<1
Rubidium	µg/L	n/v	n/v	0.33	1.1	2.5	3.1	1.4	0.6	0.7	0.7	0.9	1.05	1.19	0.68	0.95	0.79	0.34	0.74	0.87	1.06	1	1
Scandium	µg/L	n/v	n/v	-	<1	3	2	2	<1	1	1	<1	-	-	-	-	-	-	-	-	-	1	<1
Selenium	µg/L	1^{B}	100^{C}	0.107	<0.05	0.13	<0.05	0.14	0.16	0.13	0.14	0.1	0.091	0.083	0.078	0.096	0.145	0.105	0.141	0.131	0.1	<0.2	<0.2
Silicon	µg/L	n/v	n/v	530	860	3,340	3,450	1,930	1,720	1,970	2,000	2,310	1,640	1,510	770	1,000	2,030	3,010	1,900	620	1,150	2,700	1,500
Silver	µg/L	0.25^{B}	0.1^{C}	<0.01	0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.01	<0.01	<0.1	<0.1
Sodium	µg/L	n/v	n/v	527	2,210	2,150	3,260	2,160	3,100	3,870	3,960	2,860	1,230	1,440	982	1,260	3,820	432	714	495	435	1,810	770
Strontium	µg/L	n/v	n/v	7.39	20.8	26.6	36.1	25.3	19.1	16.3	16.1	19.6	34.7	31.8	23.9	33.3	30.3	13.6	13.8	12.8	11	32	13
Sulfur	µg/L	n/v	n/v	<500	1,000	1,500	<500	<500	800	<500	<500	1,100	<500	<500	<500	<500	<500	<500	<500	<500	<500	<800	<800
Tellurium	µg/L	n/v	n/v	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<1
Thallium	µg/L	0.8^{B}	0.3_{b}[E]	<0.01	0.01	0.02	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1
Thorium	µg/L	n/v	n/v	<0.1	<0.1	0.2	0.3	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1
Tin	µg/L	n/v	n/v	<0.1	<0.1	0.1	0.2	0.1	0.3	0.4	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1
Titanium	µg/L	n/v	n/v	1.05	10.3	39.3	48.4	8.7	5.2	8.2	9.5	9.9	0.82	1.66	2.02	0.98	5.79	2.81	5.43	5.79	3.42	12	6
Tungsten	µg/L	30_{E}[E]		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1
Uranium	µg/L	33^{A} 15^{B}	5_{a}[E]	<0.01	0.05	0.08	0.08	0.04	0.04	0.04	0.04	0.04	0.014	0.026	0.03	0.021	0.06	<0.01	0.02	0.02	0.016	<1	<1
Vanadium	µg/L	n/v	6^{E}	<0.5	1	2.2	2.7	0.8	0.6	0.6	0.6	0.7	<0.5	<0.5	<0.5	<0.5	0.54	<0.5	<0.5	0.54	<0.5	<1	<1
Yttrium	µg/L	n/v	n/v	-	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	<1	<1
Zinc	µg/L	37_{EQ1}[A] 7.0_{EQ2}[B]	30^{C} 20^{E}	5.9	4	7	8	3	7	5	4	6	3.1	<3	3.2	5.1	5.5	5.7	7.2	11.2	5.7	4	5
CCME Zinc Guideline (EQ1)				14.2	37.4	38.5	54.1	41.7	33.6	34.1	33.1	33.8	51.1	48.6	36.5	48.2	40.9	19	22.2	19	18.7	44.3	24.5
CCME Zinc Guideline (EQ2)				42.8	45.4	55.4	62.1	49.3	54.2	76.5	71.4	72	58.6	37.7	41	53.9	38.4	48.2	53.3	40.5	43.5	41.5	49.3
Zirconium	µg/L	n/v	4_{a}[E]	<0.2	1.2	2.7	**5.6**[E]	3.1	0.7	0.8	0.9	1.3	<0.2	<0.2	<0.2	<0.2	0.25	<0.2	<0.2	0.2	<0.2	1	1

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Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				PC-01 (Continued)									UWC-01			UWC-1	WBR-P-01			WBR-P-02		WBR-P-03		
Sample Date				23-May-23	12-Jun-23	31-Jul-23	24-Aug-23	26-Sep-23	18-Oct-23	9-Nov-23	4-Dec-23	17-Feb-23	12-Jul-23	16-Oct-23	25-May-23	7-Aug-21	26-Oct-21	6-Jun-22	7-Aug-21	26-Oct-21	18-Sep-22	24-Oct-22	22-Feb-23
Sample ID				PC-01	PC-01	PC-01	PC-01	PC-01	PC-01	PC-01	PC-01	UWC-01	UWC-01	UWC-01	UWC-1	WBR-P-01	WBR-P-01	WBR-P-01	WBR-P-02	WBR-P-02	WBR-P-03	WBR-P-03	WBR-P-03
Sampling Company				UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	CNC	STANTEC	CNC	STANTEC	UNKNOWN	UNKNOWN	STANTEC	UNKNOWN	CNC	CNC	UNKNOWN	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	ALS	ALS	ALS	ALS	ALS	ALS	TESTMARK
Laboratory Work Order				500390	502339	507838	510423	513823	516339	518809	520817	491080	505909	516043	500390	L2625067	L2656799	WT2205411	L2625067	L2656799	WT2215061	WT2219907	492012
Laboratory Sample ID				1884831	1891902	1911306	1920565	1932454	1942680	1951270	1958010	1852154	1904225	1941587	1884839	L2625067-2	L2656799-3	WT2205411-005	L2625067-1	L2656799-4	WT2215061-008	WT2219907-005	1855429
Sample Type	Units	CCME	PWQO																				
Field Parameters																							
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	-	**6.42[BC]**	**5.45[BC]**	6.5	**4.53[BC]**	**5.12[BC]**	**6.3[BC]**	**6.42[BC]**	**5.43[BC]**	**5.15[BC]**	**3.79[BC]**	-	-	-	-	-	-	-	-	-	7.6
Temperature, Field	deg C	n/v	$30_{\mu6}$[C]	10.88	14.21	14.53	15.13	9.66	6.27	0.21	0.16	0	24.87	8.16	11.02	-	-	-	-	-	-	-	0
General Chemistry																							
Acidity as CaCO3	mg/L	n/v	n/v	9	9	8	6	11	10	10	10	13	16	20	19	4	3.8	2.3	5.3	4.6	2.8	7.5	11
Alkalinity, Total	mg/L	n/v	n/v	22	46	62	72	48.5	54	58.4	42	5	14	10	6	26.3	17.6	20.8	18.8	11.5	13.4	4.6	19
Ammonia (as N)	mg/L	$_{TBC2}$[B]	n/v	0.065	0.043	0.044	0.046	0.055	0.15	0.0581	0.056	0.28	0.046	0.048	0.042	0.015	0.011	0.0129	0.019	0.012	0.0167	0.0267	0.312
Bromide	mg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	<0.10	<0.10	<0.10	<0.10	<0.10	-	-	-
Chloride	mg/L	640[A] 120[B]	n/v	<0.2	0.2	0.3	0.4	0.27	0.4	0.39	0.5	0.3	0.3	0.4	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.5
Chrysotile Asbestos (>0.5 um)	MFL	n/v	n/v	-	-	-	-	-	-	-	<0.20	-	-	-	-	-	-	-	-	-	-	-	-
Chrysotile Asbestos (>10 um)	MFL	n/v	n/v	-	-	-	-	-	-	-	<0.20	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide	mg/L	0.0050[B]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	-
Cyanide (Free)	mg/L	0.0050[B]	0.0050[C]	0.002	0.002	0.003	0.003	0.0034	0.004	0.0045	0.003	<0.001	0.004	0.002	0.004	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.001
Cyanide (Strong Acid Dissociable)	mg/L	0.0050[B]	n/v	<0.002	<0.002	**0.006[B]**	**0.006[B]**	0.005	<0.002	0.0025	0.002	0.003	0.003	0.003	<0.002	-	-	-	-	-	-	-	0.003
Cyanide (Weak Acid Dissociable)	mg/L	0.0050[B]	n/v	<0.001	<0.001	**0.007[B]**	0.004	0.0037	<0.001	0.0041	0.003	<0.001	0.005	0.001	0.001	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.002
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	29.2	7.2	23	19.8	43.8	42.8	38.2	42	7.1	37.5	41.4	28.5	-	-	-	-	-	-	-	43
Electrical Conductivity, Lab	µS/cm	n/v	n/v	48	91	125	131	96.3	99	112	92	15	34	28	22	55.8	45.8	44.1	44.7	38.3	37.7	32.3	44
Fluoride	mg/L	0.12[B]	n/v	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.023	0.021	<0.020	<0.020	<0.020	0.020	<0.020	<0.05
Hardness (as CaCO3)	mg/L	n/v	n/v	30.2	51.2	67.1	68.1	55.6	58	46.4	55.8	6	19.5	16.7	11	31.8	28.1	31.8	26.5	24.9	23.4	22.3	23.7
Nitrate (as N)	mg/L	124[A] 3.0[B]	n/v	0.3	<0.1	<0.1	0.8	<0.1	<0.1	0.13	0.2	0.4	<0.1	<0.1	0.2	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.1
Nitrite (as N)	mg/L	0.060[B]	n/v	<0.01	<0.01	<0.01	<0.01	0.011	<0.01	0.028	0.04	<0.01	<0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.01
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	6.58	7.22	7.27	7.36	7.18	7.31	7.42	6.82	**5.54[BC]**	**6.25[BC]**	**5.67[BC]**	**5.77[BC]**	6.79	6.74	6.97	**6.48[BC]**	**6.37[BC]**	7.03	**5.67[BC]**	**6.22[BC]**
Phosphorus, Total	mg/L	n/v	0.030_{s4}[E]	**0.032[E]**	0.028	0.022	0.018	**0.0348[E]**	0.019	0.0265	0.026	0.013	0.012	0.009	<0.002	0.02	0.0275	0.0232	0.0179	0.0164	0.0218	0.0088	**0.043[E]**
Radium-226	Bq/L	n/v	1[C]	-	-	-	-	-	-	-	0.006	-	-	-	-	-	-	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	0.6	0.7	0.5	0.8	0.75	1.2	1.1	1.2	1	<0.5	<0.5	<0.5	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.5
BC MECC Sulfate Guideline (s2)				128	218	218	218	218	218	218	218	128	128	128	128	218	218	218	128	128	128	128	128
Total Dissolved Solids	mg/L	n/v	n/v	95	100	115	110	110	105	100	120	35	95	90	50	86	82	83	62	79	58	106	100
Total Suspended Solids	mg/L	$_{SN}$[B]	n/v	31.3	11.5	5.3	2.3	8	1.7	1.3	2.3	<0.67	1	2	<0.67	<3.0	<3.0	4.2	3.4	<3.0	4.5	<5.0	3.3

See notes on last page

Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				PC-01 (Continued)								UWC-01			UWC-1	WBR-P-01			WBR-P-02		WBR-P-03		
Sample Date				23-May-23	12-Jun-23	31-Jul-23	24-Aug-23	26-Sep-23	18-Oct-23	9-Nov-23	4-Dec-23	17-Feb-23	12-Jul-23	16-Oct-23	25-May-23	7-Aug-21	26-Oct-21	6-Jun-22	7-Aug-21	26-Oct-21	18-Sep-22	24-Oct-22	22-Feb-23
Sample ID				PC-01	PC-01	PC-01	PC-01	PC-01	PC-01	PC-01	PC-01	UWC-01	UWC-01	UWC-01	UWC-1	WBR-P-01	WBR-P-01	WBR-P-01	WBR-P-02	WBR-P-02	WBR-P-03	WBR-P-03	WBR-P-03
Sampling Company				UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	CNC	STANTEC	CNC	STANTEC	UNKNOWN	UNKNOWN	STANTEC	UNKNOWN	CNC	CNC	UNKNOWN	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	ALS	ALS	ALS	ALS	ALS	ALS	TESTMARK
Laboratory Work Order				500390	502339	507838	510423	513823	516339	518809	520817	491080	505909	516043	500390	L2625067	L2656799	WT2205411	L2625067	L2656799	WT2215061	WT2219907	492012
Laboratory Sample ID				1884831	1891902	1911306	1920565	1932454	1942680	1951270	1958010	1852154	1904225	1941587	1884839	L2625067-2	L2656799-3	WT2205411-005	L2625067-1	L2656799-4	WT2215061-008	WT2219907-005	1855429
Sample Type	Units	CCME	PWQO																				
Metals - Dissolved																							
Aluminum	µg/L	$5/100_{VAR1}$ [B]	n/v	**213** [B]	100	73	47	**235** [B]	**242** [B]	**201** [B]	**253** [B]	**11** [B]	**73** [B]	**79** [B]	**58** [B]	46.7	**112** [B]	**204** [B]	**71.8** [B]	**126** [B]	**124** [B]	**208** [B]	**189** [B]
CWQG Aluminum Guideline				5	100	100	100	100	100	100	100	5	5	5	5	100	100	100	5	5	100	5	5
Aluminum (0.2u)	µg/L	n/v	75^{E}	**202** [E]	-	-	36	-	-	-	-	-	69	-	61	-	-	-	-	-	-	-	-
Antimony	µg/L	n/v	20^{E}	<0.5	-	<0.1	<0.1	0.46	<0.1	<0.1	<0.1	<0.5	1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.5
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	<1	-	0.8	0.5	0.99	0.7	0.63	0.8	<1	0.7	0.5	<1	0.89	0.75	1	0.96	0.81	<1	0.84	<1
Barium	µg/L	n/v	n/v	5	-	7.4	16.7	7.97	8.9	8.34	9.1	1	10.8	3.3	2	2.92	3.32	5.75	5.66	3.37	3.26	4.56	5
Beryllium	µg/L	n/v	$11/1,100_{s3}$ [C]	<0.5	-	<0.02	<0.02	0.022	<0.02	<0.02	<0.02	<0.5	<0.02	<0.02	<0.5	<0.1	<0.1	0.02	<0.1	<0.1	<0.2	<0.02	<0.5
PWQO Beryllium Guideline				11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	<1	-	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<1	<0.05	<0.05	<1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<1
Boron	µg/L	$29,000^{A}$ $1,500^{B}$	200_{a} [E]	2	-	4	<2	4.3	3	5.8	3	<2	3	3	<2	<10	<10	<10	<10	<10	<100	<10	<2
Cadmium	µg/L	1.0_{STB} [A] 0.09_{LTG} [B]	0.2^{C} $0.1/0.5_{s12}$ [E]	**<0.1**	-	0.02	0.01	0.033	0.03	0.043	0.05	**<0.1**	0.02	0.01	**<0.1**	0.0054	0.0056	0.0178	0.0095	0.0068	<0.05	0.0343	**<0.1**
CWQG Cadmium Guideline (STB)				0.62	1.06	1.4	1.42	1.16	1.21	0.96	1.16	0.12	0.4	0.34	0.22	0.66	0.58	0.66	0.54	0.51	0.48	0.46	0.49
CWQG Cadmium Guideline (LTG)				0.06	0.09	0.11	0.12	0.1	0.1	0.08	0.1	0.04	0.04	0.04	0.04	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.05
PWQO Cadmium Guideline				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	7,940	-	17,700	19,300	14,700	16,100	17,800	16,700	783	5,060	4,590	2,760	9,470	7,670	8,860	8,040	7,040	6,510	6,240	6,480
Cerium	µg/L	n/v	n/v	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	<1
Cesium	µg/L	n/v	n/v	<1	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<1	<0.01	<0.01	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<1
Chromium	µg/L	n/v	n/v	1	-	1	1.6	1.73	1	0.91	1.1	<1	0.7	0.8	<1	0.37	0.42	0.56	0.35	0.42	<5	0.54	2
Cobalt	µg/L	n/v	0.9^{E}	<0.1	-	0.2	<0.1	<0.1	<0.1	0.11	<0.1	<0.1	<0.1	<0.1	<0.1	0.35	0.2	0.26	0.48	<0.1	***<1***	0.14	**1** [E]
Copper	µg/L	2_{TBC1} [B]	5^{C} $1/5_{s13}$ [E]	2	-	**2.1** [B]	1.6	**2.06** [B]	**2.6** [B]	1.4	**2.4** [B]	<1	**3.5** [BE]	**1.8** [E]	1	<0.2	0.27	0.84	<0.2	0.22	<2	0.49	<1
CCME Copper Guideline				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline				5	5	5	5	5	5	5	5	1	1	1	1	5	5	5	5	5	5	5	5
Europium	µg/L	n/v	n/v	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	<1
Gallium	µg/L	n/v	n/v	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	<1
Iron	µg/L	300^{B}	300^{C}	**360** [BC]	-	**390** [BC]	**350** [BC]	**573** [BC]	**590** [BC]	**690** [BC]	**640** [BC]	71	**470** [BC]	**350** [BC]	170	228	**454** [BC]	**571** [BC]	**363** [BC]	**459** [BC]	**360** [BC]	**641** [BC]	**900** [BC]
Lanthanum	µg/L	n/v	n/v	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	<1
Lead	µg/L	1_{TBC1} [B]	$5/10/20/25_{s14}$ [C] $1/3/5_{s15}$ [E]	0.2	-	0.12	0.07	0.18	0.19	0.14	0.25	0.3	0.32	0.24	0.4	<0.05	0.109	0.259	0.052	0.079	<0.5	0.357	0.5
CCME Lead Guideline				1	1	1.9	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
PWQO Lead Guideline (s14)				10	20	20	20	20	20	20	20	5	5	5	5	10	5	5	5	5	5	5	5
PWQO Lead Guideline (s15)				1	3	3	3	3	3	3	3	1	1	1	1	3	1	3	1	1	1	1	1
Lithium	µg/L	n/v	n/v	<5	-	<1	<1	<1	<1	<1	<1	<5	<1	<1	<5	<1	<1	<1	<1	<1	<10	<1	<5
Magnesium	µg/L	n/v	n/v	1,830	-	4,210	4,540	3,490	4,200	4,270	3,820	189	1,430	1,520	742	2,810	2,180	2,350	2,180	1,940	1,730	1,630	1,750
Manganese	µg/L	$3,600_{EQ3}$ [A] 430_{EQ4} [B]	n/v	22	-	45.1	32.9	18.5	16.2	24.1	29.2	13	42	35.2	27	142	38.1	58.8	204	18.2	22.4	46.7	263
CCME Manganese Guideline (EQ3)				2326.4	3698.1	4689.3	4750.6	3975.7	4126	3391.9	3988.3	1970.8	1970.8	1970.8	1970.8	2434.3	2183.8	2434.3	2074.2	1970.8	1970.8	1970.8	1970.8
CCME Manganese Guideline (EQ4)				330	490	490	490	500	490	380	490	290	290	290	290	350	350	350	310	310	380	290	290
Mercury	µg/L	0.026^{B}	0.2^{C}	***<0.1***	-	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	0.000056	0.000059	-	0.000052	0.000058	-	-	***<0.1***
Mercury (by CV)	µg/L	n/v	n/v	0.01	<0.01	<0.01	<0.01	-	-	-	-	-	<0.01	-	<0.01	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	<1	-	0.18	<0.05	0.39	0.07	<0.05	0.18	<1	0.3	<0.05	<1	<0.05	<0.05	0.051	<0.05	<0.05	<0.5	<0.05	<1
Nickel	µg/L	25_{TBC1} [B]	25^{C}	<1	-	0.6	1	1.2	0.7	0.67	1	<1	0.6	<0.5	<1	<0.5	<0.5	0.68	<0.5	<0.5	<5	0.61	<1
CCME Nickel Guideline				25	25	70.6	71.4	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Niobium	µg/L	n/v	n/v	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	<1
Phosphorus	µg/L	n/v	30_{s4} [E]	***<50***	-	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	<30	<30	***<50***	<30	<30	***<500***	***<50***	***<50***
Potassium	µg/L	n/v	n/v	200	-	430	490	300	360	380	330	<100	70	110	<100	<50	249	<50	<50	151	<500	<50	220
Rhodium	µg/L	n/v	n/v	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	<1
Rubidium	µg/L	n/v	n/v	<1	-	1.4	1.6	0.94	0.9	0.91	0.8	<1	0.2	0.4	<1	0.26	1.04	0.31	<0.2	0.53	<2	0.25	<1
Scandium	µg/L	n/v	n/v	<1	-	<1	<1	1.3	2	1.7	1	<1	<1	<1	<1	-	-	-	-	-	-	-	1
Selenium	µg/L	1^{B}	100^{C}	<0.5	-	<0.05	<0.05	0.16	<0.05	<0.05	<0.05	0.2	0.16	<0.05	<0.5	0.132	0.121	0.157	0.094	0.101	<0.5	0.148	<0.2
Silicon	µg/L	n/v	n/v	600	-	1,620	1,070	2,380	2,310	2,450	2,530	<600	820	800	<600	1,710	1,550	452	1,590	1,700	1,640	1,180	3,000
Silver	µg/L	0.25^{B}	0.1^{C}	<0.1	-	<0.01	0.05	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.1
Sodium	µg/L	n/v	n/v	700	-	1,750	2,280	1,590	1,910	2,150	1,620	110	240	370	300	276	531	447	155	570	<500	393	570
Strontium	µg/L	n/v	n/v	15	-	32.7	42.6	33.6	34.8	32.7	31.5	2	10.2	9.2	5	19.3	13.2	16.3	19	12.1	12.2	11.5	11
Sulfur	µg/L	n/v	n/v	<800	-	<500	1,500	<500	800	2,300	900	<800	<500	<500	<800	<500	<500	<500	<500	<500	<5,000	<500	<800
Tellurium	µg/L	n/v	n/v	<1	-	<0.2	0.2	<0.2	<0.2	<0.2	<0.2	<1	<0.2	<0.2	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<1
Thallium	µg/L	0.8^{B}	0.3_{s} [E]	<0.1	-	<0.01	<0.01	0.022	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.1
Thorium	µg/L	n/v	n/v	<1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1
Tin	µg/L	n/v	n/v	<1	-	0.3	0.3	<0.1	0.2	<0.1	<0.1	<1	0.4	0.2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1
Titanium	µg/L	n/v	n/v	4	-	2.3	1.4	6	4.7	4.39	5.5	<1	1.2	1	<1	0.73	2.07	5.01	0.89	1.61	<3	3.77	6
Tungsten	µg/L	n/v	30_{E} [E]	<1	-	<0.1	0.2	<0.1	<0.1	0.17	<0.1	<1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1
Uranium	µg/L	33^{A} 15^{B}	5_{a} [E]	<1	-	0.06	0.05	0.053	0.06	0.065	0.07	<1	0.02	<0.01	<1	<0.01	0.01	0.042	<0.01	<0.01	<0.1	0.012	<1
Vanadium	µg/L	n/v	6^{E}	<1	-	0.6	0.8	0.89	0.7	0.53	0.7	<1	<0.5	<0.5	<1	<0.5	<0.5	0.64	<0.5	<0.5	<5	<0.5	<1
Yttrium	µg/L	n/v	n/v	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	<1
Zinc	µg/L	37_{EQ1} [A] 7.0_{EQ2} [B]	30^{C} 20^{E}	7	-	3	3	4.1	4	4	6	3	6	6	9	2.9	3.6	6.3	4.5	5.9	<10	8.8	10
CCME Zinc Guideline (EQ1)				24.4	37.9	47.5	48	40.6	42	34.9	40.7	12.7	17	14.9	12.7	25.5	23	25.5	21.9	20.8	19.7	19	19.9
CCME Zinc Guideline (EQ2)				46.2	25.9	51	45.2	59.3	55	38.9	78.5	13.3	44.1	63.6	34	41.9	38.8	36.2	45.4	46.8	25.8	74.6	57.4
Zirconium	µg/L	n/v	4_{a} [E]	<1	-	1.2	0.9	2.13	1.1	1.2	1.3	<1	0.3	<0.2	<1	<0.2	<0.2	0.41	<0.2	<0.2	<3	<0.3	<1

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Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				PC-01 (Continued)									UWC-01			UWC-1	WBR-P-01			WBR-P-02		WBR-P-03		
Sample Date				23-May-23	12-Jun-23	31-Jul-23	24-Aug-23	26-Sep-23	18-Oct-23	9-Nov-23	4-Dec-23	17-Feb-23	12-Jul-23	16-Oct-23	25-May-23	7-Aug-21	26-Oct-21	6-Jun-22	7-Aug-21	26-Oct-21	18-Sep-22	24-Oct-22	22-Feb-23
Sample ID				PC-01	PC-01	PC-01	PC-01	PC-01	PC-01	PC-01	PC-01	UWC-01	UWC-01	UWC-01	UWC-1	WBR-P-01	WBR-P-01	WBR-P-01	WBR-P-02	WBR-P-02	WBR-P-03	WBR-P-03	WBR-P-03
Sampling Company				UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	CNC	STANTEC	CNC	STANTEC	UNKNOWN	UNKNOWN	STANTEC	UNKNOWN	CNC	CNC	UNKNOWN	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	ALS	ALS	ALS	ALS	ALS	ALS	TESTMARK
Laboratory Work Order				500390	502339	507838	510423	513823	516339	518809	520817	491080	505909	516043	500390	L2625067	L2656799	WT2205411	L2625067	L2656799	WT2215061	WT2219907	492012
Laboratory Sample ID				1884831	1891902	1911306	1920565	1932454	1942680	1951270	1958010	1852154	1904225	1941587	1884839	L2625067-2	L2656799-3	WT2205411-005	L2625067-1	L2656799-4	WT2215061-008	WT2219907-005	1855429
Sample Type	Units	CCME	PWQO																				
Metals - Total																							
Aluminum	µg/L	$5/100_{VAR1}$[B]	n/v	**493**[B]	**531**[B]	**128**[B]	**133**[B]	**338**[B]	**305**[B]	**255**[B]	**352**[B]	**26**[B]	**95**[B]	**80**[B]	**74**[B]	50.1	**162**[B]	**298**[B]	**72.4**[B]	**130**[B]	**188**[B]	**225**[B]	**281**[B]
CWQG Aluminum Guideline				5	100	100	100	100	100	100	100	5	5	5	5	100	100	100	5	5	100	5	5
Antimony	µg/L	n/v	20^{E}	<0.5	0.3	<0.1	1.2	0.38	<0.1	<0.1	<0.1	<0.5	1.2	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	<1	0.7	0.8	0.5	0.78	0.7	0.51	0.7	<1	0.7	0.5	<1	0.87	0.79	0.91	0.98	0.79	0.76	0.92	<1
Barium	µg/L	n/v	n/v	8	11.4	7.4	8.1	8.7	8.9	8.3	8.7	2	3.6	3.6	3	3.08	3.75	6.18	5.73	3.35	3.9	4.91	6
Beryllium	µg/L	n/v	$11/1,100_{s3}$[C]	<0.5	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.5	<0.02	<0.02	<0.5	<0.1	<0.1	<0.02	<0.1	<0.1	<0.02	<0.02	<0.5
Beryllium	µg/L	n/v	$11/1,100_{s3}$[C]	<0.5	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.5	<0.02	<0.02	<0.5	<0.1	<0.1	<0.02	<0.1	<0.1	<0.02	<0.02	<0.5
PWQO Beryllium Guideline				11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	<1	0.05	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<1	<0.05	<0.05	<1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
Boron	µg/L	$29,000^{A}$ $1,500^{B}$	200_{a}[E]	<2	4	3	<2	3.6	2	5.4	<2	<2	<2	3	<2	<10	<10	<10	<10	<10	<10	<10	<2
Cadmium	µg/L	1.0_{STB}[A] 0.09_{LTG}[B]	0.2^{C} $0.1/0.5_{s12}$[E]	**0.08**[B]	0.04	0.02	0.01	0.035	0.04	0.037	0.04	**0.05**[B]	0.02	0.01	<0.02	0.0073	0.0074	0.0242	0.0113	0.0089	0.0113	0.0352	0.03
CWQG Cadmium Guideline (STB)				0.62	1.06	1.4	1.42	1.16	1.21	0.96	1.16	0.12	0.4	0.34	0.22	0.66	0.58	0.66	0.54	0.51	0.48	0.46	0.49
CWQG Cadmium Guideline (LTG)				0.06	0.09	0.11	0.12	0.1	0.1	0.08	0.1	0.04	0.04	0.04	0.04	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.05
PWQO Cadmium Guideline				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	8,510	14,900	17,500	19,000	14,000	15,500	17,200	16,000	1,720	4,740	4,780	2,880	8,750	7,440	8,290	7,540	6,590	6,620	6,530	6,630
Cerium	µg/L	n/v	n/v	1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	<1
Cesium	µg/L	n/v	n/v	<1	0.03	<0.01	<0.01	0.012	<0.01	<0.01	<0.01	<1	<0.01	<0.01	<1	<0.01	<0.01	0.014	<0.01	<0.01	0.012	<0.01	<1
Chromium	µg/L	n/v	n/v	1	1.3	0.6	1	1.51	0.9	1.04	1.2	<1	0.7	0.8	<1	<0.5	0.58	0.74	<0.5	<0.5	0.78	0.61	1
Cobalt	µg/L	n/v	0.9^{E}	0.3	0.3	0.2	0.1	0.12	<0.1	0.16	0.1	0.1	<0.1	<0.1	0.1	0.48	0.26	0.29	0.51	0.11	0.23	0.17	**1.1**[E]
Copper	µg/L	2_{TBC1}[B]	5^{C} $1/5_{s13}$[E]	2	1.7	1.2	1.2	1.6	1.5	**2.72**[B]	1.8	<1	0.3	0.6	1	<0.5	<0.5	0.83	<0.5	<0.5	<0.5	0.63	1
CCME Copper Guideline				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline				5	5	5	5	5	5	5	5	1	1	1	1	5	5	5	5	5	5	5	5
Europium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	<1
Gallium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	<1
Iron	µg/L	300^{B}	300^{C}	**600**[BC]	**790**[BC]	**480**[BC]	**470**[BC]	**580**[BC]	**630**[BC]	**720**[BC]	**600**[BC]	150	**510**[BC]	**380**[BC]	190	**346**[BC]	**611**[BC]	**697**[BC]	**464**[BC]	**497**[BC]	**595**[BC]	**680**[BC]	**1,100**[BC]
Lanthanum	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	<1
Lead	µg/L	1_{TBC1}[B]	$5/10/20/25_{s14}$[C] $1/3/5_{s15}$[E]	0.6	0.45	0.14	0.1	0.23	**1.38**[B]	0.29	0.22	0.3	0.42	0.32	0.4	0.075	0.159	0.291	0.099	0.101	0.242	0.445	0.7
CCME Lead Guideline				1	1	1.9	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
PWQO Lead Guideline (s14)				10	20	20	20	20	20	20	20	5	5	5	5	10	5	5	5	5	5	5	5
PWQO Lead Guideline (s15)				1	3	3	3	3	3	3	3	1	1	1	1	3	1	3	1	1	1	1	1
Lithium	µg/L	n/v	n/v	<5	<1	<1	1	<1	<1	1.2	<1	<5	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<5
Magnesium	µg/L	n/v	n/v	2,030	3,490	4,150	4,720	3,510	4,140	4,280	3,850	425	1,380	1,570	776	2,410	2,300	2,500	1,860	2,060	1,980	1,640	1,760
Manganese	µg/L	$3,600_{EQ3}$[A] 430_{EQ4}[B]	n/v	83	59.2	45.6	39.9	25.1	24.5	31.6	36.7	27	41.5	36.6	29	203	58.6	59.3	219	19.7	31.3	52.7	**295**[B]
CCME Manganese Guideline (EQ3)				2326.4	3698.1	4689.3	4750.6	3975.7	4126	3391.9	3988.3	1970.8	1970.8	1970.8	1970.8	2434.3	2183.8	2434.3	2074.2	1970.8	1970.8	1970.8	1970.8
CCME Manganese Guideline (EQ4)				330	490	490	490	500	490	380	490	290	290	290	290	350	350	350	310	310	380	290	290
Mercury	µg/L	0.026^{B}	0.2^{C}	-	-	-	-	-	<0.01	-	<0.01	***<0.1***	-	<0.01	-	-	-	-	-	-	-	-	***<0.1***
Mercury (Trace)	ng/L	n/v	n/v	9.99	5.23	3.16	2.57	8.52	8.13	-	5.94	4.72	1.97	1.41	2.65	0.80	1.22	4.82	1.06	1.07	1.54	3.52	4.68
Mercury (by CV)	µg/L	n/v	n/v	-	-	-	-	<0.01	-	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl Mercury	ng/L	4^{B}	n/v	0.15	0.18	0.25	0.20	0.20	0.20	2.26	0.29	-	0.07	0.07	0.14	-	-	0.19	-	-	0.08	0.10	-
Molybdenum	µg/L	73^{B}	40^{E}	<1	<0.05	0.15	<0.05	0.22	0.07	<0.05	0.07	<1	0.25	<0.05	<1	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<1
Nickel	µg/L	25_{TBC1}[B]	25^{C}	<1	1.3	<0.5	0.9	0.95	0.8	1.2	0.8	<1	<0.5	<0.5	<1	0.51	0.56	0.81	<0.5	0.53	0.7	0.6	<1
CCME Nickel Guideline				25	25	70.6	71.4	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Niobium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	<1
Phosphorus	µg/L	n/v	30_{s4}[E]	-	-	-	-	-	-	-	-	-	-	-	-	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	-
Potassium	µg/L	n/v	n/v	200	460	450	510	340	350	390	340	<100	60	130	<100	<50	270	70	<50	50	78	76	290
Rhodium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	<1
Rubidium	µg/L	n/v	n/v	<1	1.8	1.5	1.7	1.1	0.9	0.91	0.8	<1	0.2	0.4	<1	0.29	1.25	0.53	<0.2	0.27	0.54	0.38	1
Scandium	µg/L	n/v	n/v	<1	1	<1	<1	1.3	2	1.8	1	<1	<1	<1	<1	-	-	-	-	-	-	-	1
Selenium	µg/L	1^{B}	100^{C}	<0.5	<0.05	<0.05	<0.05	0.16	<0.05	0.15	0.23	<0.2	0.14	0.12	<0.5	0.111	0.119	0.12	0.105	0.11	0.112	0.153	<0.2
Silicon	µg/L	n/v	n/v	1,100	1,850	1,610	1,220	2,620	2,270	2,550	2,670	<600	930	950	<600	1,810	1,720	690	1,620	1,800	1,870	1,270	3,200
Silver	µg/L	0.25^{B}	0.1^{C}	<0.1	0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	0.02	<0.1	<0.05	<0.05	<0.01	<0.05	<0.05	<0.01	<0.01	<0.1
Sodium	µg/L	n/v	n/v	700	1,320	1,770	2,370	1,660	1,850	2,160	1,570	150	290	390	300	256	573	463	141	608	350	403	860
Strontium	µg/L	n/v	n/v	17	25.2	33.4	43.2	32.7	34.4	31.9	29.9	4	8.6	9.5	5	18.1	13.6	16.2	18.2	12	13.5	11.8	13
Sulfur	µg/L	n/v	n/v	<800	1,000	<500	1,600	<500	<500	2,500	1,100	<800	500	<500	<800	<500	<500	<500	<500	<500	<500	<500	<800
Tellurium	µg/L	n/v	n/v	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<0.2	<0.2	<1	0.24	<0.2	<0.2	0.29	<0.2	<0.2	<0.2	<1
Thallium	µg/L	0.8^{B}	0.3_{s}[E]	<0.1	<0.01	<0.01	<0.01	0.015	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1
Thorium	µg/L	n/v	n/v	<1	0.1	<0.1	<0.1	0.12	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1
Tin	µg/L	n/v	n/v	<1	0.1	0.3	0.4	0.55	0.2	0.29	<0.1	<1	0.4	0.2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1
Titanium	µg/L	n/v	n/v	12	17.8	4.7	4.4	10.8	6.3	5.83	8.3	<1	2	1.4	1	0.94	3.92	8.34	1.21	1.75	5.16	4.69	9
Tungsten	µg/L	30_{E}[E]		<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1
Uranium	µg/L	33^{A} 15^{B}	5_{a}[E]	<1	0.09	0.06	0.05	0.065	0.06	0.069	0.07	<1	<0.01	<0.01	<1	<0.01	0.013	0.043	<0.01	<0.01	0.015	0.015	<1
Vanadium	µg/L	n/v	6^{E}	1	1.5	0.6	0.7	0.98	0.7	0.6	0.8	<1	<0.5	<0.5	<1	<0.5	<0.5	0.87	<0.5	<0.5	<0.5	0.5	<1
Yttrium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	<1
Zinc	µg/L	37_{EQ1}[A] 7.0_{EQ2}[B]	30^{C} 20^{E}	7	5	8	2	4.1	6	3.7	17	5	5	8	7	3	4	5.7	4.4	6.2	4.5	8.8	11
CCME Zinc Guideline (EQ1)				24.4	37.9	47.5	48	40.6	42	34.9	40.7	12.7	17	14.9	12.7	25.5	23	25.5	21.9	20.8	19.7	19	19.9
CCME Zinc Guideline (EQ2)				46.2	25.9	51	45.2	59.3	55	38.9	78.5	13.3	44.1	63.6	34	41.9	38.8	36.2	45.4	46.8	25.8	74.6	57.4
Zirconium	µg/L	n/v	4_{a}[E]	1	1.3	1.1	0.9	2	1.3	1.1	1.2	<1	0.3	<0.2	<1	<0.2	<0.2	0.32	<0.2	<0.2	0.2	0.21	<1

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Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				WBR-P-03 (Continued)											WBR-P-04								
Sample Date				23-Mar-23	19-Apr-23	23-May-23	12-Jun-23	6-Jul-23	1-Aug-23	14-Sep-23	17-Oct-23	9-Nov-23	4-Dec-23	18-Sep-22	24-Oct-22	19-Apr-23	23-May-23	8-Jun-23	12-Jun-23	6-Jul-23	14-Jul-23	1-Aug-23	26-Sep-23
Sample ID				WBR-P-03	WBR-P-03	WBR-P-03	WBR-P-03	WBR-P-03	WBR-P-03	WBR-P-03	WBR-P-03	WBR-P-03	WBR-P-03	WBR-P-04	WBR-P-04	WBR-P-04	WBR-P-04	WBR-P-04	WBR-P-04	WBR-P-04	WBR-P-04	WBR-P-04	WBR-P-04
Sampling Company				UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	CNC	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	CNC
Laboratory				TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	ALS	TESTMARK	TESTMARK	ALS	TESTMARK	TESTMARK	ALS	TESTMARK	TESTMARK
Laboratory Work Order				493844	496342	500390	502339	505091	507996	512902	516339	518809	520817	WT2215061	WT2219907	496342	500390	WT2317497	502339	505091	WT2322070	507996	513823
Laboratory Sample ID				1861887	1870245	1884835	1891906	1901475	1911843	1929233	1942684	1951274	1958008	WT2215061-007	WT2219907-004	1870246	1884836	WT2317497-001	1891907	1901476	WT2322070-001	1911844	1932457
Sample Type	Units	CCME	PWQO																				
Field Parameters																							
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	**6.19**[BC]	**5.7**[BC]	-	**5.14**[BC]	**5.01**[BC]	7.57	**4.84**[BC]	**4.71**[BC]	**6.17**[BC]	**4.77**[BC]	-	-	**5.09**[BC]	-	-	**3.95**[BC]	**4.21**[BC]	-	**5.42**[BC]	**2.79**[BC]
Temperature, Field	deg C	n/v	30_{96}[C]	0.05	0	13.58	12.52	21.89	23.4	10.37	7.32	0.36	0.6	-	-	0.04	12.03	-	12.54	17.86	-	17	10.54
General Chemistry																							
Acidity as CaCO3	mg/L	n/v	n/v	15	13	14	16	20	9	16	13	19	12	3.3	10.2	15	19	3.1	18	20	7.7	14	24
Alkalinity, Total	mg/L	n/v	n/v	20	7	8	14	18	16	12	11	11	11	11.7	1.0	5	5	8.2	7	6	12	6	4.6
Ammonia (as N)	mg/L	[B] TBC2	n/v	0.408	0.037	0.044	0.048	0.054	0.046	0.046	0.09	0.064	0.073	0.0164	0.0236	0.032	0.047	0.0122	0.053	0.07	0.0205	0.055	0.104
Bromide	mg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	<0.1	-	-
Chloride	mg/L	640[A] 120[B]	n/v	0.6	0.3	<0.2	<0.2	<0.2	<0.2	<0.2	0.3	0.37	0.3	<0.50	<0.50	0.2	<0.2	<0.5	<0.2	<0.2	<0.5	<0.2	<0.2
Chrysotile Asbestos (>0.5 um)	MFL	n/v	n/v	-	-	-	-	-	-	-	-	-	<0.20	-	-	-	-	-	-	-	-	-	-
Chrysotile Asbestos (>10 um)	MFL	n/v	n/v	-	-	-	-	-	-	-	-	-	<0.20	-	-	-	-	-	-	-	-	-	-
Cyanide	mg/L	0.0050[B]	n/v	-	-	-	-	-	-	-	-	-	-	<0.0020	<0.0020	-	-	-	-	-	-	-	-
Cyanide (Free)	mg/L	0.0050[B]	0.0050[C]	0.004	0.003	-	-	-	-	-	-	-	0.003	<0.0020	<0.0020	0.003	-	<0.002	-	-	<0.002	-	-
Cyanide (Strong Acid Dissociable)	mg/L	0.0050[B]	n/v	0.002	**0.007**[B]	-	-	-	-	-	-	-	<0.002	-	-	0.005	-	<0.002	-	-	<0.002	-	-
Cyanide (Weak Acid Dissociable)	mg/L	0.0050[B]	n/v	0.005	0.003	-	-	-	-	-	-	-	0.004	<0.0020	<0.0020	0.003	-	<0.002	-	-	<0.002	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	46	22.6	28.8	41	32.4	36	35.2	50.9	50.3	51	-	-	22.6	28.9	-	42	53	-	45	58.6
Electrical Conductivity, Lab	µS/cm	n/v	n/v	50	22	24	31	38	39	34	35	35.7	47	35.9	31.0	18	22	27.5	24	28	36.9	31	36.6
Fluoride	mg/L	0.12[B]	n/v	<0.05	<0.05	**0.32**[B]	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.020	<0.020	<0.05	<0.05	<0.02	<0.05	<0.05	0.022	<0.05	<0.05
Hardness (as CaCO3)	mg/L	n/v	n/v	25.6	10.2	14.1	20.1	23.7	23.8	18.3	23.3	17.2	24.6	22.1	17.6	7.3	10.1	20.5	13.9	16.9	23.6	16.3	19.9
Nitrate (as N)	mg/L	124[A] 3.0[B]	n/v	<0.1	2.3	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.020	<0.020	<0.1	0.1	<0.02	<0.1	<0.1	<0.02	<0.1	<0.1
Nitrite (as N)	mg/L	0.060[B]	n/v	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.029	0.04	<0.010	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.013
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	**6.26**[BC]	**5.76**[BC]	**5.81**[BC]	**6.08**[BC]	6.51	**6.33**[BC]	**5.92**[BC]	**5.47**[BC]	**5.83**[BC]	**5.96**[BC]	6.94	**5.05**[BC]	**4.96**[BC]	**5.59**[BC]	6.73	**5.4**[BC]	**5.27**[BC]	6.7	**5.27**[BC]	**4.83**[BC]
Phosphorus, Total	mg/L	n/v	0.030_{94}[E]	**0.079**[E]	0.023	0.002	0.019	**0.051**[E]	0.027	0.026	0.01	0.012	0.016	0.0250	0.0060	0.024	0.013	**0.0303**[E]	0.011	0.021	**0.0421**[E]	0.023	0.014
Radium-226	Bq/L	n/v	1[C]	-	-	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.30	<0.30	<0.5	<0.5	<0.3	<0.5	<0.5	<0.3	<0.5	<0.5
BC MECC Sulfate Guideline (s2)				128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128
Total Dissolved Solids	mg/L	n/v	n/v	90	65	70	90	70	85	75	90	85	90	47	99	60	70	40	100	100	55	75	65
Total Suspended Solids	mg/L	[B] SN	n/v	6.7	1.3	<0.67	3	4	2.7	1	1	2.7	1.3	3.7	<3.0	3.7	3	<3	1.3	2.3	10.1	2.3	2

See notes on last page

Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				WBR-P-03 (Continued)										WBR-P-04								
Sample Date				23-Mar-23	19-Apr-23	23-May-23	12-Jun-23	6-Jul-23	1-Aug-23	14-Sep-23	17-Oct-23	9-Nov-23	4-Dec-23	18-Sep-22	24-Oct-22	19-Apr-23	23-May-23	8-Jun-23	12-Jun-23	6-Jul-23	14-Jul-23	1-Aug-23	26-Sep-23
Sample ID				WBR-P-03	WBR-P-03	WBR-P-03	WBR-P-03	WBR-P-03	WBR-P-03	WBR-P-03	WBR-P-03	WBR-P-03	WBR-P-03	WBR-P-04	WBR-P-04	WBR-P-04	WBR-P-04	WBR-P-04	WBR-P-04	WBR-P-04	WBR-P-04	WBR-P-04	WBR-P-04
Sampling Company				UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	CNC	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	CNC
Laboratory				TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	ALS	TESTMARK	TESTMARK	ALS	TESTMARK	TESTMARK	ALS	TESTMARK	TESTMARK
Laboratory Work Order				493844	496342	500390	502339	505091	507996	512902	516339	518809	520817	WT2215061	WT2219907	496342	500390	WT2317497	502339	505091	WT2322070	507996	513823
Laboratory Sample ID				1861887	1870245	1884835	1891906	1901475	1911843	1929233	1942684	1951274	1958008	WT2215061-007	WT2219907-004	1870246	1884836	WT2317497-001	1891907	1901476	WT2322070-001	1911844	1932457
Sample Type	Units	CCME	PWQO																				
Metals - Dissolved																							
Aluminum	µg/L	$5/100_{VAR1}$ [B]	n/v	**202** [B]	**65** [B]	**112** [B]	**169** [B]	**134** [B]	**147** [B]	**128** [B]	**181** [B]	**185** [B]	**215** [B]	90	**141** [B]	**42** [B]	**73** [B]	**138** [B]	**112** [B]	**130** [B]	81.1	**106** [B]	**146** [B]
CWQG Aluminum Guideline				5	5	5	5	5	5	5	5	5	5	100	5	5	5	100	5	5	100	5	5
Aluminum (0.2u)	µg/L	n/v	75^{E}	-	61	**114** [E]	-	**129** [E]	-	-	-	-	-	-	-	40	74	-	-	**136** [E]	-	-	-
Antimony	µg/L	n/v	20^{E}	<0.5	<0.5	<0.5	-	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.5	<0.5	<0.1	-	0.3	<0.1	<0.1	0.13
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	<1	<1	<1	-	0.9	0.9	0.7	0.7	0.71	0.8	<1	0.78	<1	<1	0.87	-	0.7	0.89	0.8	0.91
Barium	µg/L	n/v	n/v	6	11	3	-	12.7	6.2	6.6	4.3	3.69	5.2	4.03	3.37	12	3	4.51	-	15.4	4.36	7.5	4.52
Beryllium	µg/L	n/v	$11/1,100_{83}$ [C]	<0.5	<0.5	<0.5	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.2	<0.02	<0.5	<0.5	<0.02	-	<0.02	<0.02	<0.02	<0.02
PWQO Beryllium Guideline				11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	<1	<1	<1	-	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<1	<1	<0.05	-	0.07	<0.05	<0.05	<0.05
Boron	µg/L	$29,000^{A}$ $1,500^{B}$	200_{a} [E]	<2	<2	<2	-	2	<2	4	<2	3	<2	<100	<10	<2	<2	<10	-	<2	<10	<2	<2
Cadmium	µg/L	1.0_{STB} [A] 0.09_{LTG} [B]	0.2^{C} $0.1/0.5_{s12}$ [E]	**<0.1**	**<0.1**	**<0.1**	-	0.02	0.02	0.02	0.02	0.028	0.05	<0.05	0.0309	**<0.1**	**<0.1**	0.015	-	0.04	0.0111	0.04	0.037
CWQG Cadmium Guideline (STB)				0.53	0.21	0.29	0.41	0.49	0.49	0.37	0.48	0.35	0.5	0.45	0.36	0.15	0.2	0.42	0.28	0.34	0.48	0.33	0.41
CWQG Cadmium Guideline (LTG)				0.05	0.04	0.04	0.04	0.05	0.05	0.04	0.05	0.04	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.04	0.04
PWQO Cadmium Guideline				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	6,790	2,770	3,870	-	6,020	6,610	4,830	6,090	6,440	6,870	6,040	4,860	1,860	2,730	5,730	-	4,300	6,500	4,660	4,930
Cerium	µg/L	n/v	n/v	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	-	-	<1	<1	-	-	<1	-	<1	<1
Cesium	µg/L	n/v	n/v	<1	<1	<1	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<1	<1	<0.01	-	<0.01	<0.01	<0.01	<0.01
Chromium	µg/L	n/v	n/v	1	<1	3	-	0.8	0.7	1.1	0.7	0.72	0.8	<5	<0.5	<1	<1	<0.5	-	0.6	<0.5	0.4	0.74
Cobalt	µg/L	n/v	0.9^{E}	0.9	0.1	<0.1	-	0.4	0.2	0.1	<0.1	<0.1	0.3	***<1***	0.21	<0.1	<0.1	0.13	-	0.1	0.14	0.1	0.13
Copper	µg/L	2_{TBC1} [B]	5^{C} $1/5_{s13}$ [E]	<1	**4** [BE]	**3** [BE]	-	**5** [B]	0.8	0.8	0.6	**1.6** [E]	1.7	<2	0.39	**2** [E]	**12** [BCE]	0.55	-	**1.9** [E]	0.32	**1.2** [E]	**1.3** [E]
CCME Copper Guideline				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline				5	1	1	1	5	5	1	5	1	5	5	1	1	1	1	1	1	5	1	1
Europium	µg/L	n/v	n/v	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	-	-	<1	<1	-	-	<1	-	<1	<1
Gallium	µg/L	n/v	n/v	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	-	-	<1	<1	-	-	<1	-	<1	<1
Iron	µg/L	300^{B}	300^{C}	**1,100** [BC]	237	240	-	**520** [BC]	**430** [BC]	**470** [BC]	**520** [BC]	**571** [BC]	**600** [BC]	295	**512** [BC]	140	190	**362** [BC]	-	**390** [BC]	289	**410** [BC]	**438** [BC]
Lanthanum	µg/L	n/v	n/v	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	-	-	<1	<1	-	-	<1	-	<1	<1
Lead	µg/L	1_{TBC1} [B]	$5/10/20/25_{s14}$ [C] $1/3/5_{s15}$ [E]	0.5	0.2	0.3	-	0.27	0.28	0.16	0.26	0.2	0.4	<0.5	0.45	0.3	0.5	0.2	-	0.63	0.135	0.55	0.64
CCME Lead Guideline				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
PWQO Lead Guideline (s14)				5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
PWQO Lead Guideline (s15)				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Lithium	µg/L	n/v	n/v	<5	<5	<5	-	<1	<1	1	<1	<1	<1	<10	<1	<5	<5	<1	-	<1	<1	<1	<1
Magnesium	µg/L	n/v	n/v	1,860	712	874	-	1,680	1,790	1,430	1,770	1,680	1,810	1,710	1,320	473	610	1,500	-	1,040	1,790	1,080	1,280
Manganese	µg/L	$3,600_{EQ3}$ [A] 430_{EQ4} [B]	n/v	343	49	21	-	157	60.5	41.1	16.4	19.7	88.3	21	62.7	31	24	18.3	-	44.2	24.1	48.1	53.2
CCME Manganese Guideline (EQ3)				2012.2	1970.8	1970.8	1970.8	1970.8	1970.8	1970.8	1970.8	1970.8	1970.8	1970.8	1970.8	1970.8	1970.8	1970.8	1970.8	1970.8	1970.8	1970.8	1970.8
CCME Manganese Guideline (EQ4)				290	290	290	290	330	310	290	290	290	290	350	290	290	290	350	290	290	350	290	290
Mercury	µg/L	0.026^{B}	0.2^{C}	***<0.1***	***<0.1***	***<0.1***	-	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	-	-	***<0.1***	***<0.1***	-	-	***<0.1***	-	***<0.1***	***<0.1***
Mercury (by CV)	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	<1	<1	<1	-	<0.05	<0.05	<0.05	<0.05	<0.05	0.22	<0.5	<0.05	<1	<1	<0.05	-	<0.05	<0.05	<0.05	0.07
Nickel	µg/L	25_{TBC1} [B]	25^{C}	<1	<1	<1	-	0.8	0.8	0.6	0.6	<0.5	0.7	<5	<0.5	<1	<1	<0.5	-	0.6	<0.5	<0.5	0.58
CCME Nickel Guideline				25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Niobium	µg/L	n/v	n/v	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	-	-	<1	<1	-	-	<1	-	<1	<1
Phosphorus	µg/L	n/v	30_{s4} [E]	***<50***	***<50***	***<50***	-	***<50***	***<50***	***<50***	**420** [E]	***<50***	***<50***	***<500***	***<50***	***<50***	***<50***	***<50***	-	***<50***	***<50***	***<50***	***<50***
Potassium	µg/L	n/v	n/v	280	320	<100	-	110	<50	150	<50	<50	70	<500	<50	440	200	139	-	50	135	<50	<50
Rhodium	µg/L	n/v	n/v	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	-	-	<1	<1	-	-	<1	-	<1	<1
Rubidium	µg/L	n/v	n/v	1	<1	<1	-	0.4	<0.2	0.8	0.2	<0.2	0.3	<2	<0.2	1	<1	0.66	-	<0.2	0.58	<0.2	<0.2
Scandium	µg/L	n/v	n/v	2	<1	<1	-	<1	<1	1	<1	<1	<1	-	-	<1	<1	-	-	1	-	1	<1
Selenium	µg/L	1^{B}	100^{C}	<0.5	<0.2	<0.5	-	<0.05	<0.05	0.1	<0.05	<0.05	<0.05	<0.5	0.136	<0.2	<0.5	0.134	-	<0.05	0.124	<0.05	0.057
Silicon	µg/L	n/v	n/v	3,900	880	<600	-	1,460	1,950	2,300	1,240	1,190	2,040	985	1,150	790	<600	148	-	2,540	481	2,890	1,640
Silver	µg/L	0.25^{B}	0.1^{C}	<0.1	<0.1	<0.1	-	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.1	<0.1	<0.01	-	0.04	<0.01	<0.01	<0.01
Sodium	µg/L	n/v	n/v	690	370	400	-	260	280	430	500	500	470	<500	344	320	400	367	-	340	358	310	480
Strontium	µg/L	n/v	n/v	10	5	7	-	12	11.5	12.1	11.3	9.5	11.4	13	9.44	4	5	12.4	-	8	14.9	8.6	9.92
Sulfur	µg/L	n/v	n/v	<800	<800	<800	-	<500	<500	1,500	<500	1,700	<500	<5,000	<500	<800	<800	<500	-	<500	<500	<500	<500
Tellurium	µg/L	n/v	n/v	<1	<1	<1	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<1	<1	<0.2	-	<0.2	<0.2	<0.2	<0.2
Thallium	µg/L	0.8^{B}	0.3_{s} [E]	<0.1	<0.1	<0.1	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.1	<0.1	<0.01	-	<0.01	<0.01	<0.01	<0.01
Thorium	µg/L	n/v	n/v	<1	<1	<1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<1	<0.1	-	<0.1	<0.1	<0.1	<0.1
Tin	µg/L	n/v	n/v	<1	<1	<1	-	0.3	0.2	0.3	0.2	0.11	<0.1	<1	0.14	<1	<1	<0.1	-	0.3	<0.1	0.3	<0.1
Titanium	µg/L	n/v	n/v	7	2	2	-	3	3.3	2.2	3.1	2.8	3.9	<3	2.23	<1	<1	3.29	-	2.1	2.08	1.8	1.9
Tungsten	µg/L	n/v	30_{s} [E]	<1	<1	<1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<1	<0.1	-	<0.1	<0.1	<0.1	<0.1
Uranium	µg/L	33^{A} 15^{B}	5_{a} [E]	<1	<1	<1	-	<0.01	0.01	<0.01	<0.01	<0.01	0.01	<0.1	<0.01	<1	<1	0.014	-	<0.01	0.012	<0.01	<0.01
Vanadium	µg/L	n/v	6^{E}	<1	<1	<1	-	<0.5	0.5	<0.5	<0.5	<0.5	0.5	<5	<0.5	<1	<1	<0.5	-	<0.5	<0.5	<0.5	<0.5
Yttrium	µg/L	n/v	n/v	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	-	-	<1	<1	-	-	<1	-	<1	<1
Zinc	µg/L	37_{EQ1} [A] 7.0_{EQ2} [B]	30^{C} 20^{E}	9	5	6	-	7	5	4	8	7.2	9	<10	9.9	5	5	4.4	-	8	3.2	5	5.8
CCME Zinc Guideline (EQ1)				21.3	12.7	12.9	17.4	19.9	20	16.1	19.7	15.3	20.6	18.8	15.6	12.7	12.7	17.7	12.8	15	19.9	14.6	17.2
CCME Zinc Guideline (EQ2)				61.4	29.1	41.8	54	40.5	49.1	53	111.3	62	78.7	26.3	98.8	40.7	36.5	29	67	98.3	34	89	170.9
Zirconium	µg/L	n/v	4_{a} [E]	1	<1	<1	-	0.7	0.8	0.6	0.6	0.58	0.6	<3	<0.3	<1	<1	0.32	-	0.3	<0.3	0.3	0.52

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Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				WBR-P-03 (Continued)										WBR-P-04									
Sample Date				23-Mar-23	19-Apr-23	23-May-23	12-Jun-23	6-Jul-23	1-Aug-23	14-Sep-23	17-Oct-23	9-Nov-23	4-Dec-23	18-Sep-22	24-Oct-22	19-Apr-23	23-May-23	8-Jun-23	12-Jun-23	6-Jul-23	14-Jul-23	1-Aug-23	26-Sep-23
Sample ID				WBR-P-03	WBR-P-03	WBR-P-03	WBR-P-03	WBR-P-03	WBR-P-03	WBR-P-03	WBR-P-03	WBR-P-03	WBR-P-03	WBR-P-04	WBR-P-04	WBR-P-04	WBR-P-04	WBR-P-04	WBR-P-04	WBR-P-04	WBR-P-04	WBR-P-04	WBR-P-04
Sampling Company				UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	CNC	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	ALS	UNKNOWN	UNKNOWN	ALS	UNKNOWN	CNC
Laboratory				TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	ALS	TESTMARK	TESTMARK	WT2317497	TESTMARK	TESTMARK	WT2322070	TESTMARK	TESTMARK
Laboratory Work Order				493844	496342	500390	502339	505091	507996	512902	516339	518809	520817	WT2215061	WT2219907	496342	500390	WT2317497-001	502339	505091	WT2322070-001	507996	513823
Laboratory Sample ID				1861887	1870245	1884835	1891906	1901475	1911843	1929233	1942684	1951274	1958008	WT2215061-007	WT2219907-004	1870246	1884836		1891907	1901476		1911844	1932457
Sample Type	Units	CCME	PWQO																				
Metals - Total																							
Aluminum	µg/L	$5/100_{VAR1}$ [B]	n/v	**433** [B]	**81** [B]	**123** [B]	**224** [B]	**163** [B]	**217** [B]	**135** [B]	**206** [B]	**204** [B]	**236** [B]	**274** [B]	**149** [B]	**61** [B]	**79** [B]	**188** [B]	**131** [B]	**147** [B]	**346** [B]	**111** [B]	**151** [B]
CWQG Aluminum Guideline				5	5	5	5	5	5	5	5	5	5	100	5	5	5	100	5	5	100	5	5
Antimony	µg/L	n/v	20^{E}	<0.5	<0.5	<0.5	<0.1	0.4	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.1	<0.1	0.4	<0.1	<0.1	<0.1
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	<1	<1	<1	0.9	1	0.8	0.6	0.7	0.55	0.7	0.89	0.8	<1	<1	0.86	0.8	0.8	0.92	0.8	0.79
Barium	µg/L	n/v	n/v	8	3	3	6.2	4.4	4.2	4	4.6	3.71	4.7	5.72	3.06	2	4	5.22	3.8	5	6.88	4.3	4.62
Beryllium	µg/L	n/v	$11/1,100_{s3}$ [C]	<0.5	<0.5	<0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.5	<0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Beryllium	µg/L	n/v	$11/1,100_{s3}$ [C]	<0.5	<0.5	<0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.5	<0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PWQO Beryllium Guideline				11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	<1	<1	<1	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<1	<0.05	<0.05	0.06	<0.05	<0.05	<0.05
Boron	µg/L	$29,000^{A}$ $1,500^{B}$	200_{a} [E]	<2	<2	<2	2	<2	<2	4	<2	2.3	<2	<10	<10	<2	<2	<10	<2	<2	<10	<2	<2
Cadmium	µg/L	1.0_{STB} [A] 0.09_{LTG} [B]	0.2^{C} $0.1/0.5_{s12}$ [E]	0.04	**0.06** [B]	0.03	0.03	0.03	0.02	0.02	0.02	0.026	0.04	0.0109	0.0338	**0.06** [B]	0.02	0.0175	0.03	0.04	0.0148	0.03	0.038
CWQG Cadmium Guideline (STB)				0.53	0.21	0.29	0.41	0.49	0.49	0.37	0.48	0.35	0.5	0.45	0.36	0.15	0.2	0.42	0.28	0.34	0.48	0.33	0.41
CWQG Cadmium Guideline (LTG)				0.05	0.04	0.04	0.04	0.05	0.05	0.04	0.05	0.04	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.04	0.04
PWQO Cadmium Guideline				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	6,820	2,870	3,850	5,980	6,390	6,190	5,020	6,010	6,200	6,980	6,510	5,170	1,990	2,790	5,380	3,980	4,700	6,610	4,450	4,980
Cerium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	<1	<1	-	<1	<1	-	<1	<1
Cesium	µg/L	n/v	n/v	<1	<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.025	<0.01	<1	<1	0.013	<0.01	<0.01	0.033	<0.01	<0.01
Chromium	µg/L	n/v	n/v	1	<1	<1	0.8	0.8	0.9	1.1	0.8	0.78	1	0.86	<0.5	<1	2	0.67	0.6	0.6	1.13	0.4	0.88
Cobalt	µg/L	n/v	0.9^{E}	**1.5** [E]	0.2	0.1	0.4	0.5	0.3	0.2	<0.1	<0.1	0.3	0.24	0.21	<0.1	<0.1	0.15	0.1	0.2	0.27	0.1	0.13
Copper	µg/L	2_{TBC1} [B]	5^{C} $1/5_{s13}$ [E]	<1	<1	<1	**2.4** [BE]	0.6	0.7	0.6	1.4	0.97	1.6	0.54	<0.5	1	<1	0.7	1	**1.6** [E]	0.56	0.5	0.4
CCME Copper Guideline				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline				5	1	1	1	5	5	1	5	1	5	5	1	1	1	1	1	1	5	1	1
Europium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	<1	<1	-	<1	<1	-	<1	<1
Gallium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	<1	<1	-	<1	<1	-	<1	<1
Iron	µg/L	300^{B}	300^{C}	**1,600** [BC]	260	260	**600** [BC]	**500** [BC]	**530** [BC]	**510** [BC]	**540** [BC]	**568** [BC]	**700** [BC]	**608** [BC]	**554** [BC]	170	200	**482** [BC]	**410** [BC]	**440** [BC]	**607** [BC]	**430** [BC]	**449** [BC]
Lanthanum	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	<1	<1	-	<1	<1	-	<1	<1
Lead	µg/L	1_{TBC1} [B]	$5/10/20/25_{s14}$ [C] $1/3/5_{s15}$ [E]	0.9	0.3	0.3	0.4	0.39	0.42	0.19	0.3	0.31	0.39	0.247	0.474	0.4	0.5	0.282	0.85	0.69	0.311	0.59	0.717
CCME Lead Guideline				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
PWQO Lead Guideline (s14)				5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
PWQO Lead Guideline (s15)				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Lithium	µg/L	n/v	n/v	<5	<5	<5	<1	1	<1	1	<1	<1	<1	<1	<1	<5	<5	<1	<1	<1	<1	<1	<1
Magnesium	µg/L	n/v	n/v	1,930	749	871	1,560	1,790	1,700	1,460	1,760	1,680	1,840	2,000	1,340	502	624	1,450	935	1,110	1,940	1,080	1,290
Manganese	µg/L	$3,600_{EQ3}$ [A] 430_{EQ4} [B]	n/v	**455** [B]	52	23	131	195	61.2	43.5	16.8	20.8	91.7	30.1	63.2	34	25	16	40.4	47.4	34.3	49.4	52.9
CCME Manganese Guideline (EQ3)				2012.2	1970.8	1970.8	1970.8	1970.8	1970.8	1970.8	1970.8	1970.8	1970.8	1970.8	1970.8	1970.8	1970.8	1970.8	1970.8	1970.8	1970.8	1970.8	1970.8
CCME Manganese Guideline (EQ4)				290	290	290	290	330	310	290	290	290	290	350	290	290	290	350	290	290	350	290	290
Mercury	µg/L	0.026^{B}	0.2^{C}	***<0.1***	***<0.1***	***<0.1***	**0.1** [B]	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	<0.01	-	-	***<0.1***	***<0.1***	-	***<0.1***	***<0.1***	-	***<0.1***	***<0.1***
Mercury (Trace)	ng/L	n/v	n/v	4.45	5.5	-	-	-	-	-	-	-	2.92	1.24	2.23	6.35	-	<5	-	-	1.41	-	-
Mercury (by CV)	ng/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl Mercury	ng/L	4^{B}	n/v	-	-	-	-	-	-	-	-	-	0.08	0.05	0.06	-	-	-	-	-	0.05	-	-
Molybdenum	µg/L	73^{B}	40^{E}	<1	<1	<1	<0.05	<0.05	<0.05	<0.05	0.11	<0.05	0.05	<0.05	<0.05	<1	<1	<0.05	<0.05	<0.05	0.052	<0.05	<0.05
Nickel	µg/L	25_{TBC1} [B]	25^{C}	<1	<1	<1	0.8	0.8	0.8	<0.5	0.6	<0.5	<0.5	0.75	<0.5	<1	<1	0.66	<0.5	0.5	0.8	<0.5	<0.5
CCME Nickel Guideline				25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Niobium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	<1	<1	-	<1	<1	-	<1	<1
Phosphorus	µg/L	n/v	30_{s4} [E]	-	-	-	-	-	-	-	-	-	-	***<50***	***<50***	-	-	***<50***	-	-	***<50***	-	-
Potassium	µg/L	n/v	n/v	320	370	<100	110	120	<50	170	60	<50	80	169	52	520	200	178	50	60	226	50	<50
Rhodium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	<1	<1	-	<1	<1	-	<1	<1
Rubidium	µg/L	n/v	n/v	2	1	<1	0.4	0.5	0.3	0.8	0.2	<0.2	0.3	0.91	<0.2	1	<1	0.82	<0.2	<0.2	1.16	0.2	<0.2
Scandium	µg/L	n/v	n/v	2	<1	<1	<1	<1	<1	1	<1	<1	<1	-	-	<1	<1	-	<1	1	-	1	<1
Selenium	µg/L	1^{B}	100^{C}	<0.5	<0.2	<0.5	<0.05	0.11	<0.05	0.11	<0.05	0.058	0.22	0.111	0.136	<0.2	<0.5	0.127	<0.05	0.1	0.12	<0.05	0.099
Silicon	µg/L	n/v	n/v	4,300	940	<600	1,000	1,630	2,080	2,380	1,260	1,160	2,140	1,530	1,220	830	<600	330	1,330	2,560	1,090	2,900	1,760
Silver	µg/L	0.25^{B}	0.1^{C}	<0.1	<0.1	<0.1	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.01	0.04	<0.01	<0.01	<0.01	<0.01
Sodium	µg/L	n/v	n/v	680	440	400	560	230	300	470	630	460	470	298	344	430	400	415	410	350	354	280	460
Strontium	µg/L	n/v	n/v	11	5	7	10.3	12.5	11.5	12.2	11.3	8.81	11.4	15.7	9.51	4	6	12.5	6.6	8.4	15.5	8.4	9.97
Sulfur	µg/L	n/v	n/v	<800	<800	<800	900	<500	<500	1,800	<500	1,600	600	<500	<500	<800	<800	<500	1,000	<500	<500	<500	<500
Tellurium	µg/L	n/v	n/v	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/L	0.8^{B}	0.3_{s} [E]	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Thorium	µg/L	n/v	n/v	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tin	µg/L	n/v	n/v	<1	<1	<1	<0.1	0.3	0.3	0.5	0.2	0.55	<0.1	<0.1	<0.1	<1	<1	<0.1	0.1	0.4	<0.1	0.3	0.39
Titanium	µg/L	n/v	n/v	15	2	2	5.1	4	6.4	2.8	3.1	3.09	4.3	9.64	2.77	2	1	5.34	2.3	3	13.4	2.3	2.2
Tungsten	µg/L	n/v	30_{s} [E]	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Uranium	µg/L	33^{A} 15^{B}	5_{a} [E]	<1	<1	<1	0.02	0.01	0.02	<0.01	<0.01	<0.01	0.01	0.017	<0.01	<1	<1	0.016	<0.01	<0.01	0.02	<0.01	<0.01
Vanadium	µg/L	n/v	6^{E}	<1	<1	<1	0.6	0.5	0.6	<0.5	<0.5	<0.5	0.5	0.63	<0.5	<1	<1	0.53	<0.5	<0.5	0.79	<0.5	0.52
Yttrium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	<1	<1	-	<1	<1	-	<1	<1
Zinc	µg/L	37_{EQ1} [A] 7.0_{EQ2} [B]	30^{C} 20^{E}	10	4	6	10	5	8	4	7	6	7	5.9	8.4	5	4	5.1	7	7	8	14	5
CCME Zinc Guideline (EQ1)				21.3	12.7	12.9	17.4	19.9	20	16.1	19.7	15.3	20.6	18.8	15.6	12.7	12.7	17.7	12.8	15	19.9	14.6	17.2
CCME Zinc Guideline (EQ2)				61.4	29.1	41.8	54	40.5	49.1	53	111.3	62	78.7	26.3	98.8	40.7	36.5	29	67	98.3	34	89	170.9
Zirconium	µg/L	n/v	4_{a} [E]	<1	<1	<1	0.6	0.6	0.8	0.6	0.6	0.57	0.5	0.32	<0.2	<1	<1	0.28	0.3	0.4	0.4	0.4	0.56

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Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				WBR-P-04 (Continued)			WBR-S-01			WBR-S-02			WBR-S-03					WBR-S-04					
Sample Date				17-Oct-23	9-Nov-23	4-Dec-23	10-Aug-21	25-Oct-21	30-Aug-22	10-Aug-21	25-Oct-21	6-Jun-22	10-Aug-21	24-Oct-21	6-Jun-22	1-Sep-22	1-Sep-22	9-Aug-21	11-Aug-21	24-Oct-21	6-Jun-22	30-Aug-22	22-Feb-23
Sample ID				WBR-P-04	WBR-P-04	WBR-P-04	WBR-S-01	WBR-S-01	WBRS01	WBR-S-02	WBR-S-02	WBR-S-02	WBR-S-03	WBR-S-03	WBR-S-03	WBRS03	DUP02	WBR-S-04	CNC-DUP-01	WBR-S-04	WBR-S-04	WBRS04	WBR-S-04
Sampling Company				STANTEC	CNC	STANTEC	CNC	CNC	UNKNOWN	CNC	CNC	UNKNOWN	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	CNC	CNC	CNC	UNKNOWN	UNKNOWN	TESTMARK
Laboratory				TESTMARK	TESTMARK	TESTMARK	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	492012
Laboratory Work Order				516339	518809	520817	L2626399	L2656799	WT2213093	L2626399	L2656799	WT2205411	L2626399	L2655497	WT2205411	WT2213093	WT2213093	L2626399	L2626399	L2655497	WT2205411	WT2213093	1855428
Laboratory Sample ID				1942685	1951275	1958009	L2626399-6	L2656799-2	WT2213093-007	L2626399-7	L2656799-1	WT2205411-001	L2626399-8	L2655497-5	WT2205411-002	WT2213093-003	WT2213093-011	L2626399-9	L2626399-11	L2655497-4	WT2205411-003	WT2213093-008	
Sample Type	Units	CCME	PWQO														Field Duplicate		Field Duplicate				
Field Parameters																							
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	**3.76[BC]**	**5.22[BC]**	**4.5[BC]**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.83
Temperature, Field	deg C	n/v	30_{s6}[C]	8.27	0.31	0.56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
General Chemistry																							
Acidity as CaCO3	mg/L	n/v	n/v	22	21	15	<2.0	3.6	3.4	3.9	5.4	2.4	4	6.7	2.3	3.0	3.0	4.2	4	6.6	2.3	3.1	12
Alkalinity, Total	mg/L	n/v	n/v	4	4.1	3	74.3	55.8	22.0	54.7	23.6	17.6	63	26.8	20.8	25.0	24.7	66.2	59	25.6	17.1	25.3	56
Ammonia (as N)	mg/L	[B] TBC2	n/v	0.09	0.0644	0.061	0.013	0.014	0.0328	0.016	0.014	0.0159	0.023	0.018	0.0136	0.0315	0.0322	0.034	0.023	0.019	0.0153	0.0263	0.141
Bromide	mg/L	n/v	n/v	-	-	-	<0.10	<0.10	-	<0.10	<0.10	<1.00	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	-
Chloride	mg/L	640[A] 120[B]	n/v	0.5	0.43	0.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.7
Chrysotile Asbestos (>0.5 um)	MFL	n/v	n/v	-	-	<0.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysotile Asbestos (>10 um)	MFL	n/v	n/v	-	-	<0.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide	mg/L	0.0050[B]	n/v	-	-	-	<0.0020	<0.0020	0.0020	<0.0020	<0.0020	0.0023	<0.0020	<0.0020	0.0021	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0022	<0.0020	-
Cyanide (Free)	mg/L	0.0050[B]	0.0050[C]	-	-	0.004	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0021	0.004
Cyanide (Strong Acid Dissociable)	mg/L	0.0050[B]	n/v	-	-	<0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.003
Cyanide (Weak Acid Dissociable)	mg/L	0.0050[B]	n/v	-	-	0.004	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.002
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	55.3	52.1	51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32.2
Electrical Conductivity, Lab	µS/cm	n/v	n/v	37	34.9	36	142	112	53.7	106	53.4	40.9	119	55.7	44.3	58.5	58.8	114	111	55.2	40.4	58.8	109
Fluoride	mg/L	0.12[B]	n/v	<0.05	<0.05	<0.05	0.038	0.029	0.021	0.028	<0.020	<0.020	0.033	<0.020	<0.020	0.023	0.022	0.032	0.032	<0.020	<0.020	0.023	<0.05
Hardness (as CaCO3)	mg/L	n/v	n/v	19.2	13.3	17.1	75.3	67.8	37.5	64.4	37.6	29.5	69.4	40.7	31.2	41.0	40.3	66.7	65.7	39.2	28.4	40.2	58.3
Nitrate (as N)	mg/L	124[A] 3.0[B]	n/v	<0.1	0.17	0.2	<0.020	0.141	0.078	<0.020	0.05	0.022	<0.020	0.058	0.027	0.059	0.054	<0.020	<0.020	0.046	0.020	0.117	<0.1
Nitrite (as N)	mg/L	0.060[B]	n/v	0.01	0.03	0.04	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.01
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	**4.75[BC]**	**4.68[BC]**	**4.73[BC]**	7.76	7.52	6.93	7.57	6.99	6.89	7.63	6.9	6.98	7.13	7.09	7.62	7.85	6.91	6.91	7.04	7.02
Phosphorus, Total	mg/L	n/v	0.030_{s4}[E]	0.009	0.011	0.013	0.0201	0.019	**0.0356[E]**	**0.0487[E]**	0.0288	0.0280	**0.05[E]**	**0.0301[E]**	**0.0449[E]**	**0.0395[E]**	0.0054	**0.0439[E]**	**0.0429[E]**	0.029	**0.0326[E]**	0.0053	**0.041[E]**
Radium-226	Bq/L	n/v	1[C]	-	-	<0.005	-	0.0031	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	<0.5	<0.5	<0.5	1.13	1.58	0.66	1.1	0.92	<0.30	0.5	0.83	<0.30	0.60	0.59	0.46	0.46	0.78	<0.30	0.98	2.6
BC MECC Sulfate Guideline (s2)				128	128	128	218	218	218	218	218	128	218	218	218	218	218	218	218	218	128	218	218
Total Dissolved Solids	mg/L	n/v	n/v	95	75	90	120	131	103	132	125	85	134	132	84	105	113	132	132	129	72	111	140
Total Suspended Solids	mg/L	[B] SN	n/v	3	1.7	2	<3.0	<3.0	6.1	12.9	5.4	<3.0	4.4	<3.0	6.0	8.8	9.6	3.1	3	4.2	7.6	11.8	6.7

See notes on last page

Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				WBR-P-04 (Continued)			WBR-S-01			WBR-S-02			WBR-S-03					WBR-S-04					
Sample Date				17-Oct-23	9-Nov-23	4-Dec-23	10-Aug-21	25-Oct-21	30-Aug-22	10-Aug-21	25-Oct-21	6-Jun-22	10-Aug-21	24-Oct-21	6-Jun-22	1-Sep-22	1-Sep-22	9-Aug-21	11-Aug-21	24-Oct-21	6-Jun-22	30-Aug-22	22-Feb-23
Sample ID				WBR-P-04	CNC	WBR-P-04	WBR-S-01	CNC	WBRS01	WBR-S-02	CNC	UNKNOWN	WBR-S-03	CNC	WBR-S-03	WBRS03	DUP02	WBR-S-04	CNC-DUP-01	WBR-S-04	WBR-S-04	WBRS04	WBR-S-04
Sampling Company				STANTEC	TESTMARK	STANTEC	CNC	ALS	UNKNOWN	ALS	ALS	ALS	ALS	ALS	UNKNOWN	UNKNOWN	UNKNOWN	ALS	ALS	ALS	UNKNOWN	UNKNOWN	TESTMARK
Laboratory				TESTMARK	518809	TESTMARK	ALS	L2656799	ALS	L2626399	L2656799	UNKNOWN	L2626399	L2655497	WT2205411	WT2213093	WT2213093	L2626399	L2626399	L2655497	WT2205411	WT2213093	492012
Laboratory Work Order				516339	1951275	520817	L2626399		WT2213093			WT2205411			WT2205411								
Laboratory Sample ID				1942685		1958009	L2626399-6	L2656799-2	WT2213093-007	L2626399-7	L2656799-1	WT2205411-001	L2626399-8	L2655497-5	WT2205411-002	WT2213093-003	WT2213093-011	L2626399-9	L2626399-11	L2655497-4	WT2205411-003	WT2213093-008	1855428
Sample Type																	Field Duplicate		Field Duplicate				
Metals - Dissolved																							
Aluminum	µg/L	$5/100_{VAR1}$ [B]	n/v	**167** [B]	**140** [B]	**150** [B]	69.7	**260** [B]	**342** [B]	**185** [B]	**331** [B]	**297** [B]	**158** [B]	**378** [B]	**321** [B]	**331** [B]	**307** [B]	**198** [B]	**186** [B]	**362** [B]	**235** [B]	**325** [B]	**156** [B]
CWQG Aluminum Guideline				5	5	5	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Aluminum (0.2u)	µg/L	n/v	75^{E}	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Antimony	µg/L	n/v	20^{E}	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	0.8	0.69	0.8	0.74	0.91	1.53	1.4	1.34	1.21	1.4	1.41	1.22	1.5	1.5	1.39	1.45	1.35	1.06	1.52	<1
Barium	µg/L	n/v	n/v	4.5	3.35	4.2	9.61	9.41	7.54	7.55	6.69	6.69	7.59	7.27	6.42	7.32	7.06	7.53	7.16	7.29	5.29	7.32	7
Beryllium	µg/L	n/v	$11/1,100_{s3}$ [C]	<0.02	<0.02	<0.02	<0.1	<0.1	0.029	<0.1	<0.1	0.026	<0.1	<0.1	0.024	0.026	0.027	<0.1	<0.1	<0.1	<0.02	0.024	<0.5
PWQO Beryllium Guideline				11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
Boron	µg/L	$29,000^{A}$ $1,500^{B}$	200_{a} [E]	<2	2.6	<2	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<2
Cadmium	µg/L	1.0_{STB} [A] 0.09_{LTG} [B]	0.2^{C} $0.1/0.5_{s12}$ [E]	0.04	0.039	0.04	0.0135	0.031	0.0366	0.0183	0.0438	0.0534	0.0179	0.0333	0.0345	0.0295	0.0296	0.0169	0.0175	0.0383	0.0314	0.0322	<0.1
CWQG Cadmium Guideline (STB)				0.39	0.27	0.35	1.57	1.41	0.77	1.34	0.78	0.61	1.45	0.84	0.64	0.85	0.83	1.39	1.37	0.81	0.58	0.83	1.21
CWQG Cadmium Guideline (LTG)				0.04	0.04	0.04	0.13	0.11	0.07	0.11	0.07	0.06	0.12	0.08	0.06	0.08	0.07	0.11	0.11	0.07	0.06	0.07	0.1
PWQO Cadmium Guideline				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	5,180	4,830	4,780	22,400	18,600	10,500	18,300	11,000	8,710	19,600	11,500	9,130	11,800	11,400	20,200	19,900	11,200	8,280	11,300	16,200
Cerium	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
Cesium	µg/L	n/v	n/v	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<1
Chromium	µg/L	n/v	n/v	0.7	0.71	0.8	0.5	0.73	1.06	0.74	0.92	0.8	0.74	0.9	0.82	1.07	1.04	0.8	0.77	0.93	0.63	1.11	3
Cobalt	µg/L	n/v	0.9^{E}	0.1	0.13	0.1	<0.1	<0.1	0.15	0.16	0.13	0.25	0.16	0.17	0.15	0.15	0.15	0.16	0.16	0.16	0.18	0.19	0.6
Copper	µg/L	2_{TBC1} [B]	5^{C} $1/5_{s13}$ [E]	1	0.84	**1.9** [E]	0.87	1.43	**2.07** [B]	1.69	**2.84** [B]	**2.32** [B]	1.4	**2.03** [B]	**2.22** [B]	1.99	1.98	1.44	1.46	1.93	1.55	1.96	1
CCME Copper Guideline				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline				1	1	1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Europium	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
Gallium	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
Iron	µg/L	300^{B}	300^{C}	**420** [BC]	**424** [BC]	**410** [BC]	271	**517** [BC]	**775** [BC]	**604** [BC]	**798** [BC]	**560** [BC]	**667** [BC]	**824** [BC]	**542** [BC]	**761** [BC]	**749** [BC]	**682** [BC]	**668** [BC]	**807** [BC]	**494** [BC]	**772** [BC]	**740** [BC]
Lanthanum	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
Lead	µg/L	1_{TBC1} [B]	$5/10/20/25_{s14}$ [C] $1/3/5_{s15}$ [E]	0.72	0.54	0.65	0.069	0.178	0.292	0.254	0.298	0.38	0.271	0.306	0.33	0.276	0.281	0.265	0.308	0.303	0.272	0.284	0.3
CCME Lead Guideline				1	1	1	2.2	1.9	1	1.8	1	1	2	1	1	1	1	1.9	1.9	1	1	1	1
PWQO Lead Guideline (s14)				5	5	5	20	20	10	20	10	5	20	10	5	10	10	20	20	10	5	10	20
PWQO Lead Guideline (s15)				1	1	1	3	3	3	3	3	1	3	3	3	3	3	3	3	3	1	3	3
Lithium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5
Magnesium	µg/L	n/v	n/v	1,430	1,230	1,210	5,890	4,940	2,740	4,480	2,600	1,880	5,080	2,980	2,040	2,810	2,870	4,880	4,930	2,940	1,880	2,920	3,920
Manganese	µg/L	$3,600_{EQ3}$ [A] 430_{EQ4} [B]	n/v	61	53.6	55.9	31.6	40.7	35.8	93.5	35.9	96.6	65.6	43.6	42.7	37.2	36	62.1	61.1	45.7	58.1	51.5	86
CCME Manganese Guideline (EQ3)				1970.8	1970.8	1970.8	5188.8	4732.2	2813.5	4523.2	2820	2279	4830.1	3023.2	2393.9	3042.7	2997.1	4664.7	4603.2	2925.1	2204.2	2990.6	4144.8
CCME Manganese Guideline (EQ4)				290	290	290	440	430	350	430	350	350	430	350	350	380	380	430	390	350	350	380	500
Mercury	µg/L	0.026^{B}	0.2^{C}	***<0.1***	***<0.1***	***<0.1***	0.000201	0.000156	-	0.000372	0.000213	-	0.00038	0.000277	-	-	-	0.00034	0.000345	0.000296	-	-	***<0.1***
Mercury (by CV)	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	<0.05	<0.05	0.16	0.11	0.08	0.052	0.092	<0.05	<0.05	0.094	0.054	0.053	0.052	0.05	0.099	0.09	<0.05	<0.05	0.054	<1
Nickel	µg/L	25_{TBC1} [B]	25^{C}	0.6	<0.5	0.5	<0.5	0.69	1.1	0.87	1.02	0.89	0.82	1.01	0.84	1.07	1.11	0.85	0.85	0.95	0.7	1.11	<1
CCME Nickel Guideline				25	25	25	77	71.1	25	68.4	25	25	72.4	25	25	25	25	70.3	69.5	25	25	25	25
Niobium	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
Phosphorus	µg/L	n/v	30_{s4} [E]	***<50***	***<50***	***<50***	<30	<30	***<50***	<30	<30	***<50***	<30	<30	***<50***	***<50***	***<50***	<30	<30	<30	***<50***	***<50***	***<50***
Potassium	µg/L	n/v	n/v	<50	<50	<50	489	321	276	344	193	148	378	216	171	308	306	353	352	207	104	316	360
Rhodium	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
Rubidium	µg/L	n/v	n/v	<0.2	<0.2	<0.2	1.45	0.71	1.13	1.2	0.68	0.62	1.21	0.74	0.69	1.19	1.16	1.18	1.14	0.68	0.43	1.23	<1
Scandium	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Selenium	µg/L	1^{B}	100^{C}	<0.05	<0.05	<0.05	0.09	0.212	0.237	0.151	0.189	0.198	0.099	0.203	0.2	0.204	0.195	0.161	0.134	0.197	0.173	0.239	<0.2
Silicon	µg/L	n/v	n/v	1,240	1,250	1,740	1,800	2,280	2,700	1,880	2,080	848	1,950	2,290	1,040	2,730	2,710	2,010	1,940	2,240	651	2,780	2,800
Silver	µg/L	0.25^{B}	0.1^{C}	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1
Sodium	µg/L	n/v	n/v	510	460	470	2,490	2,050	1,080	1,630	1,110	741	1,830	1,140	774	1,000	1,050	1,760	1,790	1,110	634	1,010	1,810
Strontium	µg/L	n/v	n/v	9.4	7.46	7.9	51.5	42	25.9	35.5	22.9	19.1	39.9	25.7	19	25.3	25.4	39.8	38.9	24.2	17	26	28
Sulfur	µg/L	n/v	n/v	<500	1,600	<500	720	940	680	890	930	<500	600	610	<500	610	620	700	670	640	<500	610	1,100
Tellurium	µg/L	n/v	n/v	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1
Thallium	µg/L	0.8^{B}	0.3_{s} [E]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1
Thorium	µg/L	n/v	n/v	<0.1	<0.1	<0.1	<0.1	<0.1	0.16	0.2	0.13	0.14	0.15	0.12	0.17	0.16	0.17	0.16	0.16	0.11	0.11	0.17	<1
Tin	µg/L	n/v	n/v	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1
Titanium	µg/L	n/v	n/v	2	2	1.9	2.46	6.28	9.51	8.5	7.97	8.1	7.01	9.83	10	9.97	8.73	9.13	8.35	9.63	5.91	9.82	6
Tungsten	µg/L	n/v	30_{E} [E]	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1
Uranium	µg/L	33^{A} 15^{B}	5_{a} [E]	<0.01	<0.01	<0.01	0.087	0.076	0.062	0.091	0.059	0.062	0.071	0.055	0.063	0.06	0.061	0.075	0.071	0.047	0.046	0.06	<1
Vanadium	µg/L	n/v	6^{E}	<0.5	<0.5	<0.5	0.55	0.6	0.91	1.01	0.86	0.89	0.86	0.81	0.88	0.94	0.92	0.84	0.83	0.78	0.69	0.93	<1
Yttrium	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
Zinc	µg/L	37_{EQ1} [A] 7.0_{EQ2} [B]	30^{C} 20^{E}	7	5.3	8	1.2	3.9	7.2	1.9	7.8	8.9	1.9	6.7	7.9	6.8	7.7	3.3	5.2	9.9	6.5	6.3	5
CCME Zinc Guideline (EQ1)				16.7	12.7	15.2	52.2	47.9	29.2	45.9	29.3	23.9	48.8	31.3	25.1	31.5	31	47.2	46.6	30.3	23.2	31	42.2
CCME Zinc Guideline (EQ2)				172.3	125.8	151.9	43	47.3	43.7	43.3	41.7	36	44.2	48.4	35.2	40.4	41.1	43	35.1	46.3	34.1	42.7	62.5
Zirconium	µg/L	n/v	4_{a} [E]	0.5	0.36	0.4	0.3	0.48	0.81	0.96	0.64	0.7	0.83	0.7	0.77	0.79	0.79	0.86	0.8	0.66	0.51	0.81	2

See notes on last page

Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				WBR-P-04 (Continued)			WBR-S-01			WBR-S-02			WBR-S-03					WBR-S-04					
Sample Date				17-Oct-23	9-Nov-23	4-Dec-23	10-Aug-21	25-Oct-21	30-Aug-22	10-Aug-21	25-Oct-21	6-Jun-22	10-Aug-21	24-Oct-21	6-Jun-22	1-Sep-22	1-Sep-22	9-Aug-21	11-Aug-21	24-Oct-21	6-Jun-22	30-Aug-22	22-Feb-23
Sample ID				WBR-P-04	WBR-P-04	WBR-P-04	WBR-S-01	WBR-S-01	WBRS01	WBR-S-02	WBR-S-02	WBR-S-02	WBR-S-03	WBR-S-03	WBR-S-03	WBRS03	DUP02	WBR-S-04	CNC-DUP-01	WBR-S-04	WBR-S-04	WBRS04	WBR-S-04
Sampling Company				STANTEC	CNC	STANTEC	CNC	CNC	UNKNOWN	CNC	CNC	UNKNOWN	CNC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	CNC	CNC	CNC	UNKNOWN	UNKNOWN	TESTMARK
Laboratory				TESTMARK	TESTMARK	TESTMARK	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	492012
Laboratory Work Order				516339	518809	520817	L2626399	L2656799	WT2213093	L2626399	L2656799	WT2205411	L2626399	L2655497	WT2205411	WT2213093	WT2213093	L2626399	L2626399	L2655497	WT2205411	WT2213093	1855428
Laboratory Sample ID				1942685	1951275	1958009	L2626399-6	L2656799-2	WT2213093-007	L2626399-7	L2656799-1	WT2205411-001	L2626399-8	L2655497-5	WT2205411-002	WT2213093-003	WT2213093-011	L2626399-9	L2626399-11	L2655497-4	WT2205411-003	WT2213093-008	
Sample Type	Units	CCME	PWQO														Field Duplicate		Field Duplicate				
Metals - Total																							
Aluminum	µg/L	$5/100_{VAR1}$[B]	n/v	**175**[B]	**145**[B]	**159**[B]	**215**[B]	**337**[B]	**711**[B]	**1,350**[B]	**733**[B]	**769**[B]	**820**[B]	**713**[B]	**775**[B]	**808**[B]	**801**[B]	**773**[B]	**760**[B]	**661**[B]	**738**[B]	**884**[B]	**691**[B]
CWQG Aluminum Guideline				5	5	5	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Antimony	µg/L	n/v	20^{E}	<0.1	0.12	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	0.7	0.56	0.7	0.78	1	1.59	1.67	1.45	1.17	1.58	1.41	1.18	1.62	1.54	1.56	1.57	1.35	1.11	1.61	1
Barium	µg/L	n/v	n/v	4.7	3.33	3.7	10.2	10.1	9.47	15.2	9.48	8.68	11.7	9.25	9.21	10.4	10.7	10.7	10.6	9.06	8.6	10.8	10
Beryllium	µg/L	n/v	$11/1,100_{s3}$[C]	<0.02	<0.02	<0.02	<0.1	<0.1	0.031	<0.1	<0.1	0.035	<0.1	<0.1	0.033	0.037	0.046	<0.1	<0.1	<0.1	0.033	0.046	<0.5
Beryllium	µg/L	n/v	$11/1,100_{s3}$[C]	<0.02	<0.02	<0.02	<0.1	<0.1	0.031	<0.1	<0.1	0.035	<0.1	<0.1	0.033	0.037	0.046	<0.1	<0.1	<0.1	0.033	0.046	<0.5
PWQO Beryllium Guideline				11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1
Boron	µg/L	$29,000^{A}$ $1,500^{B}$	200_{a}[E]	<2	2.2	<2	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<2
Cadmium	µg/L	1.0_{STB}[A] 0.09_{LTG}[B]	0.2^{C} $0.1/0.5_{s12}$[E]	0.04	0.033	0.04	0.0168	0.0304	0.0436	0.0356	0.0406	0.0463	0.0281	0.04	0.05	0.041	0.037	0.0214	0.0225	0.0438	0.0375	0.0409	0.03
CWQG Cadmium Guideline (STB)				0.39	0.27	0.35	1.57	1.41	0.77	1.34	0.78	0.61	1.45	0.84	0.64	0.85	0.83	1.39	1.37	0.81	0.58	0.83	1.21
CWQG Cadmium Guideline (LTG)				0.04	0.04	0.04	0.13	0.11	0.07	0.11	0.07	0.06	0.12	0.08	0.06	0.08	0.07	0.11	0.11	0.07	0.06	0.07	0.1
PWQO Cadmium Guideline				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	5,110	4,690	5,050	21,500	18,600	11,200	18,600	10,400	8,400	20,100	11,300	9,080	11,600	11,800	19,200	18,900	10,900	8,140	11,700	16,500
Cerium	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Cesium	µg/L	n/v	n/v	<0.01	<0.01	<0.01	0.017	<0.01	0.054	0.129	0.043	0.066	0.073	0.041	0.065	0.071	0.068	0.07	0.069	0.04	0.065	0.081	<1
Chromium	µg/L	n/v	n/v	0.8	0.79	1	0.74	1.06	1.9	2.88	1.71	1.82	1.95	1.57	1.84	2.24	2.09	1.82	1.78	1.57	1.69	2.38	2
Cobalt	µg/L	n/v	0.9^{E}	0.1	0.14	0.2	0.13	0.12	0.37	0.74	0.33	0.4	0.46	0.33	0.42	0.46	0.47	0.42	0.4	0.37	0.47	0.54	0.7
Copper	µg/L	2_{TBC1}[B]	5^{C} $1/5_{s13}$[E]	0.9	0.44	**1.5**[E]	1	1.6	**2.39**[B]	**2.28**[B]	**2.65**[B]	**2.75**[B]	1.84	**2.28**[B]	**2.45**[B]	**2.4**[B]	**2.17**[B]	1.71	1.67	**2.11**[B]	**2.06**[B]	**2.38**[B]	2
CCME Copper Guideline				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline				1	1	1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Europium	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
Gallium	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
Iron	µg/L	300[B]	300^{C}	**430**[BC]	**418**[BC]	**430**[BC]	**418**[BC]	**620**[BC]	**1,260**[BC]	**1,760**[BC]	**1,250**[BC]	**1,080**[BC]	**1,360**[BC]	**1,190**[BC]	**1,100**[BC]	**1,480**[BC]	**1,450**[BC]	**1,310**[BC]	**1,260**[BC]	**1,160**[BC]	**1,090**[BC]	**1,560**[BC]	**1,400**[BC]
Lanthanum	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
Lead	µg/L	1_{TBC1}[B]	$5/10/20/25_{s14}$[C] $1/3/5_{s15}$[E]	0.76	0.548	0.6	0.138	0.23	0.537	0.768	0.454	0.508	0.565	0.464	0.523	0.547	0.555	0.522	0.512	0.465	0.546	0.622	0.6
CCME Lead Guideline				1	1	1	2.2	1.9	1	1.8	1	1	2	1	1	1	1	1.9	1.9	1	1	1	1
PWQO Lead Guideline (s14)				5	5	5	20	20	10	20	10	5	20	10	5	10	10	20	20	10	5	10	20
PWQO Lead Guideline (s15)				1	1	1	3	3	3	3	3	1	3	3	3	3	3	3	3	3	1	3	3
Lithium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	1.2	2.2	1	<1	1.6	<1	<1	<1	1.3	1.5	1.5	<1	<1	1.4	<5
Magnesium	µg/L	n/v	n/v	1,430	1,240	1,280	5,220	5,170	2,980	4,330	2,830	2,030	4,690	3,030	2,450	2,990	3,060	4,530	4,490	2,890	2,160	3,130	4,060
Manganese	µg/L	$3,600_{EQ3}$[A] 430_{EQ4}[B]	n/v	60.8	53.6	59.5	37.5	48.4	50.7	118	50	47.3	78.2	53.6	53.7	63.9	68.5	75.6	73.3	66.9	80.4	84.1	101
CCME Manganese Guideline (EQ3)				1970.8	1970.8	1970.8	5188.8	4732.2	2813.5	4523.2	2820	2279	4830.1	3023.2	2393.9	3042.7	2997.1	4664.7	4603.2	2925.1	2204.2	2990.6	4144.8
CCME Manganese Guideline (EQ4)				290	290	290	440	430	350	430	350	350	430	350	350	380	380	430	390	350	350	380	500
Mercury	µg/L	0.026^{B}	0.2^{C}	***<0.1***	***<0.1***	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	***<0.1***
Mercury (Trace)	ng/L	n/v	n/v	-	-	4.38	1.82	4.02	-	3.11	3.68	8.66	2.68	2.86	8.80	5.26	7.22	2.06	0.93	2.03	7.90	4.21	5.18
Mercury (by CV)	ng/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl Mercury	ng/L	4^{B}	n/v	-	-	0.13	-	-	0.20	-	-	0.21	-	-	0.25	0.20	0.20	-	-	-	0.21	0.23	-
Molybdenum	µg/L	73^{B}	40^{E}	<0.05	<0.05	<0.05	0.125	0.095	0.06	0.096	0.066	0.055	0.107	0.057	<0.05	0.051	0.062	0.113	0.101	<0.05	0.057	0.072	<1
Nickel	µg/L	25_{TBC1}[B]	25^{C}	0.6	<0.5	<0.5	0.63	0.87	1.64	2.28	1.55	1.52	1.51	1.48	1.55	1.77	1.71	1.47	1.45	1.44	1.45	1.85	1
CCME Nickel Guideline				25	25	25	77	71.1	25	68.4	25	25	72.4	25	25	25	25	70.3	69.5	25	25	25	25
Niobium	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
Phosphorus	µg/L	n/v	30_{s4}[E]	-	-	-	***<50***	***<50***	***<50***	**62**[E]	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	**51**[E]	***<50***	***<50***	***<50***	***<50***	***<50***	-
Potassium	µg/L	n/v	n/v	<50	<50	<50	496	347	359	622	292	282	545	295	281	419	405	488	483	274	301	436	490
Rhodium	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
Rubidium	µg/L	n/v	n/v	<0.2	<0.2	<0.2	1.58	0.88	1.89	3.3	1.39	1.51	2.35	1.48	1.48	2.18	2.12	2.08	2.19	1.35	1.38	2.23	2
Scandium	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Selenium	µg/L	1^{B}	100^{C}	<0.05	0.11	0.22	0.131	0.2	0.21	0.155	0.219	0.164	0.149	0.218	0.174	0.195	0.18	0.127	0.152	0.187	0.156	0.203	<0.2
Silicon	µg/L	n/v	n/v	1,270	1,250	1,880	2,130	2,530	3,330	3,850	2,930	1,830	3,200	2,950	1,870	3,530	3,480	3,180	2,970	2,830	1,660	3,780	4,000
Silver	µg/L	0.25^{B}	0.1^{C}	<0.01	<0.01	<0.01	<0.05	<0.05	<0.01	<0.05	<0.05	<0.01	<0.05	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.01	<0.01	<0.1
Sodium	µg/L	n/v	n/v	500	470	530	2,390	2,210	1,100	1,710	1,240	789	1,840	1,200	840	1,080	999	1,750	1,740	1,080	788	1,070	1,890
Strontium	µg/L	n/v	n/v	9.5	6.87	8.8	49.6	43.6	29.3	35.8	25.8	18.9	40.5	25.4	20.4	26.3	28	38.7	38.1	24.5	18.3	28.7	31
Sulfur	µg/L	n/v	n/v	<500	1,800	<500	730	800	770	740	560	<500	<500	<500	<500	<500	690	560	<500	<500	<500	630	1,000
Tellurium	µg/L	n/v	n/v	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.25	<0.2	<0.2	<0.2	<0.2	0.29	<0.2	<0.2	<0.2	<0.2	<1
Thallium	µg/L	0.8^{B}	0.3_{b}[E]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.018	<0.01	<0.01	0.012	<0.01	<0.01	0.01	0.01	0.011	0.011	<0.01	<0.01	0.011	<0.1
Thorium	µg/L	n/v	n/v	<0.1	<0.1	<0.1	<0.1	<0.1	0.14	0.25	0.17	0.17	0.21	0.15	0.15	0.16	0.15	0.22	0.19	0.13	0.14	0.16	<1
Tin	µg/L	n/v	n/v	0.2	0.52	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.17	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1
Titanium	µg/L	n/v	n/v	2.3	2.1	2.1	8.13	9.09	24.8	51.1	24.3	26.7	32.4	24.3	27.7	29.8	29.4	28.8	29.3	21.6	26.2	32.8	28
Tungsten	µg/L	n/v	30_{a}[E]	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1
Uranium	µg/L	33^{A} 15^{B}	5_{a}[E]	<0.01	<0.01	<0.01	0.094	0.086	0.074	0.127	0.068	0.065	0.093	0.065	0.064	0.071	0.072	0.092	0.087	0.061	0.055	0.075	<1
Vanadium	µg/L	n/v	6^{E}	<0.5	<0.5	<0.5	0.94	0.82	1.61	3.03	1.46	1.78	2.11	1.46	1.78	1.97	1.83	1.97	1.88	1.35	1.66	1.99	2
Yttrium	µg/L	n/v	n/v	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1
Zinc	µg/L	37_{EQ1}[A] 7.0_{EQ2}[B]	30^{C} 20^{E}	9	4.1	7	<3	4.4	8.5	6.8	9.4	7.8	4.6	8.1	8.1	8.1	7.7	3.9	4	8	13.6	8.4	9
CCME Zinc Guideline (EQ1)				16.7	12.7	15.2	52.2	47.9	29.2	45.9	29.3	23.9	48.8	31.3	25.1	31.5	31	47.2	46.6	30.3	23.2	31	42.2
CCME Zinc Guideline (EQ2)				172.3	125.8	151.9	43	47.3	43.7	43.3	41.7	36	44.2	48.4	35.2	40.4	41.1	43	35.1	46.3	34.1	42.7	62.5
Zirconium	µg/L	n/v	4_{a}[E]	0.5	0.37	0.3	0.34	0.64	0.78	1.19	0.85	0.79	1.05	0.78	0.78	0.88	0.79	1.26	1.06	0.7	0.65	0.84	2

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Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				WBR-S-04 (Continued)												WBR-S-05	WBR-S-06				
Sample Date				23-Mar-23	19-Apr-23	23-May-23	4-Jun-23	12-Jun-23	14-Jul-23	17-Jul-23	17-Jul-23	1-Aug-23	26-Sep-23	17-Oct-23	17-Oct-23	9-Nov-23	4-Dec-23	18-Sep-22	22-Feb-23	23-Mar-23	22-Apr-23	23-May-23	12-Jun-23
Sample ID				WBR-S-04	WBR-S-04	WBR-S-04	WBR-S-04	WBR-S-04	WBR-S-04	WBR-S-04	SW-DUP	WBR-S-04	WBR-S-04	WBR-S-04	SWDup	WBR-S-04	WBR-S-04	WBR-S-05	WBR-S-06	WBR-S-06	WBR-S-06	WBR-S-06	WBR-S-06
Sampling Company				UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	ALS	ALS	UNKNOWN	CNC	STANTEC	STANTEC	CNC	STANTEC	ALS	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	WT2322070	WT2322070	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	WT2215061	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK
Laboratory Work Order				493844	496342	500390	WT2315817	502339	506589	WT2322070	WT2322070	507996	513823	516339	516339	518809	520817	WT2215061	492012	493844	496973	500390	502339
Laboratory Sample ID				1861888	1870244	1884833	WT2315817-001	1891904	1906648	WT2322070-008	WT2322070-009	1911842	1932456	1942682	1942686	1951272	1958007	WT2215061-009	1855430	1861889	1872510	1884834	1891905
Sample Type	Units	CCME	PWQO								Field Duplicate				Field Duplicate								
Field Parameters																							
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	6.73	**6.12**[BC]	-	-	**6.32**[BC]	6.52	-	-	7.34	**4.39**[BC]	**6.33**[BC]	-	**6.18**[BC]	**5.06**[BC]	-	7.17	7.12	**6.32**[BC]	-	6.54
Temperature, Field	deg C	n/v	$30_{\mu6}$[C]	0.02	0.05	12.09	-	12.49	19.8	-	-	15.2	11.22	7.46	-	0.19	0.75	-	0	0.01	0.41	11.71	15.46
General Chemistry																							
Acidity as CaCO3	mg/L	n/v	n/v	14	12	16	<2	9	7	3.3	3.2	8	14	9	10	13	23	4.5	10	11	12	8	8
Alkalinity, Total	mg/L	n/v	n/v	81	10	23	39.8	43	40	47.7	61.5	62	22.1	19	19	23.7	17	10.8	76	92	18	19	58
Ammonia (as N)	mg/L	$_{TBC2}$[B]	n/v	0.112	0.036	0.045	0.0205	0.046	0.034	0.0284	0.0268	0.044	0.0636	0.1	0.1	0.0722	0.077	0.0897	0.098	0.072	0.041	0.045	0.053
Bromide	mg/L	n/v	n/v	-	-	-	<0.1	-	-	<0.1	<0.10	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640[A] 120[B]	n/v	0.9	0.3	<0.2	<0.5	0.3	<0.2	<0.5	<0.50	0.3	0.38	0.4	0.3	0.43	0.3	<0.50	1.1	1.2	<0.2	<0.2	0.3
Chrysotile Asbestos (>0.5 um)	MFL	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.20	-	-	-	-	-	-
Chrysotile Asbestos (>10 um)	MFL	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.20	-	-	-	-	-	-
Cyanide	mg/L	0.0050[B]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0020	-	-	-	-	-
Cyanide (Free)	mg/L	0.0050[B]	0.0050[C]	0.002	0.002	0.005	<0.002	0.001	0.002	<0.002	<0.0020	0.004	0.0025	0.001	0.004	**0.0063**[BC]	0.003	<0.0020	0.004	0.004	0.003	0.004	0.001
Cyanide (Strong Acid Dissociable)	mg/L	0.0050[B]	n/v	0.004	**0.009**[B]	<0.002	<0.002	**0.008**[B]	0.004	<0.002	<0.0020	0.003	0.0036	<0.002	<0.002	0.0022	<0.002	-	<0.002	0.003	0.005	<0.002	**0.008**[B]
Cyanide (Weak Acid Dissociable)	mg/L	0.0050[B]	n/v	0.003	0.004	0.002	<0.002	<0.001	**0.007**[B]	<0.002	<0.0020	0.005	0.0031	**0.007**[B]	0.004	0.0043	0.004	<0.0020	0.001	-	0.003	0.003	<0.001
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	32.3	21.5	26.6	-	36	33.4	-	-	33	47.8	50	42.2	43.6	48	-	38	31.7	23	27.4	35
Electrical Conductivity, Lab	µS/cm	n/v	n/v	156	26	45	59.3	84	81	83.3	87.5	128	53.5	48	47	52.1	47	35.2	151	176	38	42	109
Fluoride	mg/L	0.12[B]	n/v	<0.05	<0.05	<0.05	0.026	<0.05	<0.05	0.028	0.028	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.020	<0.05	<0.05	<0.05	<0.05	<0.05
Hardness (as CaCO3)	mg/L	n/v	n/v	79.7	17	23.6	40.6	47.8	47.4	48.6	51.1	66.9	34.9	31.5	31.4	24.2	29.7	20.9	72.4	-	23.5	26	64.4
Nitrate (as N)	mg/L	124[A] 3.0[B]	n/v	0.3	<0.1	0.3	0.026	<0.1	<0.1	0.032	0.041	<0.1	0.11	0.2	0.1	0.21	0.3	0.033	0.1	0.3	0.1	0.2	<0.1
Nitrite (as N)	mg/L	0.060[B]	n/v	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	<0.01	0.012	<0.01	<0.01	0.029	0.04	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	7.17	**6.16**[BC]	6.75	7.32	7.47	7.28	7.55	7.57	7.34	6.68	6.57	6.5	6.84	**5.91**[BC]	6.85	7.36	7.43	6.77	6.6	7.23
Phosphorus, Total	mg/L	n/v	$0.030_{\mu4}$[E]	**0.052**[E]	**0.038**[E]	0.011	0.0231	0.03	0.022	**0.039**[E]	**0.0349**[E]	**0.04**[E]	**0.0312**[E]	0.021	0.019	0.02	0.019	0.0271	**0.059**[E]	-	0.023	0.012	**0.039**[E]
Radium-226	Bq/L	n/v	1[C]	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	3.9	<0.5	<0.5	0.31	<0.5	0.8	0.44	0.51	0.8	1.1	0.7	0.5	0.71	0.7	<0.30	3.3	4.8	<0.5	<0.5	0.6
BC MECC Sulfate Guideline (s2)				309	128	128	218	218	218	218	218	218	218	218	218	128	128	128	218	218	128	128	218
Total Dissolved Solids	mg/L	n/v	n/v	155	80	80	73	105	45	92	94	80	70	55	85	90	90	57	155	-	50	75	140
Total Suspended Solids	mg/L	$_{SN}$[B]	n/v	9	4.7	8.33	4.1	4	7.67	5.9	3.5	6.3	7.67	4.3	7.33	4.3	5	<3.0	5.7	-	14.3	4.7	21

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Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				WBR-S-04 (Continued)													WBR-S-05	WBR-S-06				
Sample Date				23-Mar-23	19-Apr-23	23-May-23	4-Jun-23	12-Jun-23	14-Jul-23	17-Jul-23	17-Jul-23	1-Aug-23	26-Sep-23	17-Oct-23	17-Oct-23	9-Nov-23	4-Dec-23	18-Sep-22	22-Feb-23	23-Mar-23	22-Apr-23	23-May-23	12-Jun-23
Sample ID				WBR-S-04	WBR-S-04	WBR-S-04	WBR-S-04	WBR-S-04	WBR-S-04	WBR-S-04	WBR-S-04	WBR-S-04	WBR-S-04	WBR-S-04	SWDup	WBR-S-04	WBR-S-04	WBR-S-05	WBR-S-06	WBR-S-06	WBR-S-06	WBR-S-06	WBR-S-06
Sampling Company				UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	ALS	ALS	UNKNOWN	CNC	STANTEC	STANTEC	CNC	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				TESTMARK	TESTMARK	TESTMARK	ALS	TESTMARK	TESTMARK	WT2322070	WT2322070	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK
Laboratory Work Order				493844	496342	500390	WT2315817	502339	506589	WT2322070	WT2322070	507996	513823	516339	516339	518809	520817	WT2215061	492012	493844	496973	500390	502339
Laboratory Sample ID				1861888	1870244	1884833	WT2315817-001	1891904	1906648	WT2322070-008	WT2322070-009	1911842	1932456	1942682	1942686	1951272	1958007	WT2215061-009	1855430	1861889	1872510	1884834	1891905
Sample Type											Field Duplicate				Field Duplicate								
Metals - Dissolved																							
Aluminum	µg/L	$5/100_{VAR1}$[B]	n/v	**143**[B]	**130**[B]	**172**[B]	**245**[B]	**132**[B]	**267**[B]	**169**[B]	**165**[B]	**117**[B]	**242**[B]	**282**[B]	**271**[B]	**246**[B]	**237**[B]	**109**[B]	**180**[B]	**124**[B]	**157**[B]	**179**[B]	**132**[B]
CWQG Aluminum Guideline				100	5	100	100	100	100	100	100	100	100	5	5	100	5	100	100	100	100	100	100
Aluminum (0.2u)	µg/L	n/v	75^{E}	-	**76**[E]	**158**[E]	-	-	**181**[E]	-	-	-	-	-	-	-	-	-	-	-	**108**[E]	**162**[E]	-
Antimony	µg/L	n/v	20^{E}	<0.5	<0.5	<0.5	<0.1	-	<0.1	<0.1	<0.10	<0.1	0.15	<0.1	0.1	<0.1	<0.1	<1	<0.5	<0.5	<0.5	<0.5	-
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	1	<1	<1	1.19	-	1.4	1.34	1.28	1.2	1.14	0.9	0.9	0.85	0.8	<1	1	1	<1	<1	-
Barium	µg/L	n/v	n/v	9	12	4	6.65	-	8.4	6.35	6.58	10.7	5.8	5.7	5.6	5.17	6	3.42	9	10	4	4	-
Beryllium	µg/L	n/v	$11/1,100_{83}$[C]	<0.5	<0.5	<0.5	0.022	-	0.03	0.023	<0.020	0.02	0.024	<0.02	0.02	0.027	<0.02	<0.2	<0.5	<0.5	<0.5	<0.5	-
PWQO Beryllium Guideline				1100	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	<1	<1	<1	<0.05	-	<0.05	<0.05	<0.050	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<1	<1	<1	<1	-
Boron	µg/L	$29,000^{A}$ $1,500^{B}$	200_{a}^{E}	6	2	2	<10	-	5	<10	<10	5	4.2	2	2	4	<2	<100	<2	7	3	2	-
Cadmium	µg/L	1.0_{STB}[A] 0.09_{LTG}[B]	0.2^{C} $0.1/0.5_{s12}$[E]	<0.1	**<0.1**	**<0.1**	0.0309	-	0.04	0.0198	0.0203	0.03	0.043	0.04	0.05	**0.0656**[B]	0.05	**<0.05**	<0.1	**<0.1**	**<0.1**	**<0.1**	-
CWQG Cadmium Guideline (STB)				1.67	0.35	0.48	0.84	0.99	0.98	1.01	106	1.4	0.72	0.65	0.65	0.5	0.61	0.43	1.51	0.89	0.48	0.53	1.34
CWQG Cadmium Guideline (LTG)				0.13	0.04	0.05	0.08	0.09	0.09	0.09	0.09	0.11	0.07	0.06	0.06	0.05	0.06	0.04	0.12	0.08	0.05	0.05	0.11
PWQO Cadmium Guideline				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	21,900	4,040	6,340	11,600	-	13,700	13,700	14,500	18,600	8,960	8,560	8,550	9,140	8,450	5,860	20,400	24,300	6,090	6,910	-
Cerium	µg/L	n/v	n/v	<1	<1	<1	-	-	1	-	-	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	-
Cesium	µg/L	n/v	n/v	<1	<1	<1	<0.01	-	<0.01	<0.01	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<1	<1	<1	<1	-
Chromium	µg/L	n/v	n/v	2	<1	<1	0.81	-	1.3	0.72	0.74	1	1.13	0.8	0.9	0.84	0.9	<5	3	2	<1	<1	-
Cobalt	µg/L	n/v	0.9^{E}	0.3	0.1	0.1	0.18	-	0.2	0.16	0.15	0.1	<0.1	<0.1	<0.1	0.13	0.3	**<1**	0.4	0.1	<0.1	<0.1	-
Copper	µg/L	2_{TBC1}[B]	5^{C} $1/5_{s13}$[E]	1	**5**[BE]	2	**2.16**[B]	-	1.9	1.39	1.5	1.8	**3.11**[B]	1.6	**2.9**[B]	**2.02**[B]	2	**<2**	2	2	2	**3**[B]	-
CCME Copper Guideline				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline				5	1	5	5	5	5	5	5	5	5	5	5	5	5	1	5	5	5	5	5
Europium	µg/L	n/v	n/v	<1	<1	<1	-	-	<1	-	-	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	-
Gallium	µg/L	n/v	n/v	<1	<1	<1	-	-	<1	-	-	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	-
Iron	µg/L	300^{B}	300^{C}	**710**[BC]	238	**320**[BC]	**505**[BC]	-	**800**[BC]	**537**[BC]	**549**[BC]	**650**[BC]	**640**[BC]	**620**[BC]	**620**[BC]	**660**[BC]	**700**[BC]	**533**[BC]	**760**[BC]	**590**[BC]	280	**330**[BC]	-
Lanthanum	µg/L	n/v	n/v	<1	<1	<1	-	-	<1	-	-	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	-
Lead	µg/L	1_{TBC1}[B]	$5/10/20/25_{s14}$[C] $1/3/5_{s15}$[E]	0.2	0.2	0.2	0.516	-	0.25	0.205	0.207	0.26	0.25	0.28	0.27	0.24	0.37	<0.5	0.3	0.1	0.2	0.3	-
CCME Lead Guideline				2.4	1	1	1	1	1	1	1	1.9	1	1	1	1	1	1	2.1	1	1	1	1.8
PWQO Lead Guideline (s14)				25	5	10	10	20	10	20	20	20	10	5	5	10	5	5	20	25	5	5	20
PWQO Lead Guideline (s15)				3	1	1	3	3	3	3	3	3	3	3	3	1	1	1	3	3	1	1	3
Lithium	µg/L	n/v	n/v	<5	<5	<5	<1	-	<1	<1	<1.0	<1	<1	<1	<1	<1	<1	<10	<5	<5	<5	<5	-
Magnesium	µg/L	n/v	n/v	5,340	1,070	1,480	2,830	-	2,940	3,490	3,610	4,600	2,190	2,240	2,200	2,160	2,130	1,530	5,140	5,820	1,350	1,630	-
Manganese	µg/L	$3,600_{EQ3}$[A] 430_{EQ4}[B]	n/v	91	41	27	60.5	-	55.6	60.9	57	46.2	28.2	21	20.9	25.1	101	90.8	23	7	30	22	-
CCME Manganese Guideline (EQ3)				5454.1	1970.8	1970.8	3016.7	3481.6	3456	3532.7	3691.8	4677	2641.5	2414.1	2407.4	1970.8	2292.6	1970.8	5012.9	3172.7	1970.8	2039.8	4523.2
CCME Manganese Guideline (EQ4)				590	290	350	380	380	380	350	430	490	330	330	330	350	290	350	490	380	350	330	490
Mercury	µg/L	0.026^{B}	0.2^{C}	***<0.1***	***<0.1***	***<0.1***	-	-	***<0.1***	-	-	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	-	***<0.1***	***<0.1***	***<0.1***	***<0.1***	-
Mercury (by CV)	µg/L	n/v	n/v	-	-	-	-	-	<0.01	-	-	<0.01	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	<1	<1	<1	0.074	-	0.06	0.082	0.102	0.07	0.11	<0.05	1.1	<0.05	0.4	<0.5	<1	<1	<1	<1	-
Nickel	µg/L	25_{TBC1}[B]	25^{C}	<1	<1	<1	0.9	-	1.3	0.7	0.72	1.2	1.1	1.1	1.2	0.52	0.8	<5	1	<1	<1	<1	-
CCME Nickel Guideline				80.4	25	25	25	25	25	25	25	70.4	25	25	25	25	25	25	74.8	25	25	25	68.4
Niobium	µg/L	n/v	n/v	<1	<1	<1	<1	-	<1	-	-	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	-
Phosphorus	µg/L	n/v	30_{s4}^{E}	***<50***	***<50***	***<50***	***<50***	-	***<50***	***<50***	***<50***	***<50***	***<50***	**140**[E]	***<50***	***<50***	***<50***	***<500***	***<50***	***<50***	***<50***	**50**[E]	-
Potassium	µg/L	n/v	n/v	510	340	100	288	-	280	241	267	370	240	180	190	210	140	<500	530	580	300	200	-
Rhodium	µg/L	n/v	n/v	<1	<1	<1	-	-	<1	-	-	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	-
Rubidium	µg/L	n/v	n/v	1	1	<1	0.99	-	0.9	0.88	0.92	1	0.87	0.6	0.6	0.58	0.5	<2	1	1	<1	<1	-
Scandium	µg/L	n/v	n/v	2	<1	<1	-	-	1	-	-	<1	1.1	1	1	1.2	<1	-	1	2	<1	<1	-
Selenium	µg/L	1^{B}	100^{C}	<0.5	0.2	<0.5	0.18	-	<0.05	0.151	0.181	<0.05	0.19	<0.05	0.07	<0.05	<0.05	<0.5	<0.2	<0.5	<0.2	<0.5	-
Silicon	µg/L	n/v	n/v	3,600	980	<600	1,050	-	2,490	1,560	1,640	720	2,020	1,570	1,550	1,500	2,040	1,840	3,200	3,600	1,200	600	-
Silver	µg/L	0.25^{B}	0.1^{C}	<0.1	<0.1	<0.1	<0.01	-	<0.01	<0.01	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	-
Sodium	µg/L	n/v	n/v	2,970	390	600	996	-	1,100	1,210	1,340	2,040	923	890	900	1,030	760	<500	2,510	3,310	500	700	-
Strontium	µg/L	n/v	n/v	37	7	12	23.3	-	23.9	29.7	31.5	34.1	19.9	17.7	17.4	16	15	10.8	38	40	10	13	-
Sulfur	µg/L	n/v	n/v	<800	<800	<800	<500	-	2,200	<500	<500	<500	<500	<500	<500	1,900	<500	<5,000	1,400	<800	900	<800	-
Tellurium	µg/L	n/v	n/v	<1	<1	<1	<0.2	-	<0.2	<0.2	<0.20	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<1	<1	<1	<1	-
Thallium	µg/L	0.8^{B}	0.3_{b}^{E}	<0.1	0.1	<0.1	<0.01	-	<0.01	<0.01	<0.010	<0.01	<0.01	<0.01	0.07	<0.01	0.01	<0.1	<0.1	<0.1	<0.1	<0.1	-
Thorium	µg/L	n/v	n/v	<1	<1	<1	0.13	-	<0.1	0.12	0.14	0.1	0.15	<0.1	0.1	<0.1	<0.1	<1	<1	<1	<1	<1	-
Tin	µg/L	n/v	n/v	<1	<1	<1	<0.1	-	<0.1	<0.1	<0.10	0.1	<0.1	0.2	0.2	<0.1	<0.1	<1	<1	<1	<1	<1	-
Titanium	µg/L	n/v	n/v	6	4	3	9.18	-	7.8	6.54	6.56	6.2	7.61	5.7	5.3	6.01	5.2	<3	8	6	4	4	-
Tungsten	µg/L	n/v	30_{E}^{E}	<1	<1	<1	<0.1	-	<0.1	<0.1	<0.10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<1	<1	<1	-
Uranium	µg/L	33^{A} 15^{B}	5_{a}^{E}	<1	<1	<1	0.064	-	0.05	0.066	0.068	0.06	0.038	0.04	0.04	0.046	0.03	<0.1	<1	<1	<1	<1	-
Vanadium	µg/L	n/v	6^{E}	<1	<1	<1	1.03	-	1.3	0.89	0.92	1	0.89	0.6	0.7	0.57	0.6	<5	1	<1	<1	<1	-
Yttrium	µg/L	n/v	n/v	<1	<1	<1	-	-	<1	-	-	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	-
Zinc	µg/L	37_{EQ1}[A] 7.0_{EQ2}[B]	30^{C} 20^{E}	2	4	4	3.9	-	3	2.3	2.2	1	4.5	5	8	6.2	8	<10	3	3	5	5	-
CCME Zinc Guideline (EQ1)				54.8	15.1	19.9	31.2	35.8	35.5	36.3	37.8	47.3	27.5	25.3	25.2	20.3	24.1	18	50.6	32.8	19.8	21.5	45.9
CCME Zinc Guideline (EQ2)				74.5	33.4	30.7	34.3	37.5	42.2	33.7	34.8	55.4	59.4	60	59.2	35.5	95.6	26.8	62.2	33.3	28.4	38.4	59.9
Zirconium	µg/L	n/v	4_{a}^{E}	2	<1	<1	0.73	-	2.3	0.69	0.74	2.6	3.01	1.6	1.6	1.5	0.9	<3	2	2	<1	<1	-

See notes on last page

Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				WBR-S-04 (Continued)													WBR-S-05	WBR-S-06				
Sample Date				23-Mar-23	19-Apr-23	23-May-23	4-Jun-23	12-Jun-23	14-Jul-23	17-Jul-23	17-Jul-23	1-Aug-23	26-Sep-23	17-Oct-23	17-Oct-23	9-Nov-23	4-Dec-23	18-Sep-22	22-Feb-23	23-Mar-23	22-Apr-23	23-May-23	12-Jun-23
Sample ID				WBR-S-04	WBR-S-04	WBR-S-04	WBR-S-04	WBR-S-04	WBR-S-04	WBR-S-04	SW-DUP	WBR-S-04	WBR-S-04	WBR-S-04	SWDup	WBR-S-04	WBR-S-04	WBR-S-05	WBR-S-06	WBR-S-06	WBR-S-06	WBR-S-06	WBR-S-06
Sampling Company				UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	ALS	ALS	UNKNOWN	CNC	STANTEC	STANTEC	CNC	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN
Laboratory				TESTMARK	TESTMARK	TESTMARK	ALS	TESTMARK	TESTMARK	WT2322070	WT2322070	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	ALS	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK
Laboratory Work Order				493844	496342	500390	WT2315817	502339	506589	WT2322070-008	WT2322070-009	507996	513823	516339	516339	518809	520817	WT2215061	492012	493844	496973	500390	502339
Laboratory Sample ID				1861888	1870244	1884833	WT2315817-001	1891904	1906648		Field Duplicate	1911842	1932456	1942682	Field Duplicate	1951272	1958007	WT2215061-009	1855430	1861889	1872510	1884834	1891905
Sample Type	Units	CCME	PWQO																				
Metals - Total																							
Aluminum	µg/L	$5/100_{VAR1}$ [B]	n/v	**1,020** [B]	**387** [B]	**425** [B]	**789** [B]	**317** [B]	**343** [B]	**1,010** [B]	**762** [B]	**910** [B]	**758** [B]	**386** [B]	**454** [B]	**489** [B]	**381** [B]	**140** [B]	**711** [B]	**2,770** [B]	**439** [B]	**410** [B]	**381** [B]
CWQG Aluminum Guideline				100	5	100	100	100	100	100	100	100	100	5	5	100	5	100	100	100	100	100	100
Antimony	µg/L	n/v	20^{E}	<0.5	<0.5	<0.5	<0.1	<0.1	0.1	<0.1	<0.10	<0.1	0.13	<0.1	0.2	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<0.1
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	1	<1	<1	1.21	1.1	1.2	1.48	1.52	1.2	1	0.8	0.9	0.68	0.7	0.71	2	2	<1	<1	1.1
Barium	µg/L	n/v	n/v	14	6	5	10.3	7.8	7.9	12.3	11.0	13	8.54	6.5	6.6	6.44	6.2	3.68	13	30	6	5	10.2
Beryllium	µg/L	n/v	$11/1,100_{s3}$ [C]	<0.5	<0.5	<0.5	0.035	0.03	0.03	0.052	<0.04	0.05	0.037	<0.02	0.02	0.027	<0.02	<0.02	<0.5	<0.5	<0.5	<0.5	0.03
Beryllium	µg/L	n/v	$11/1,100_{s3}$ [C]	<0.5	<0.5	<0.5	0.035	0.03	0.03	0.052	<0.04	0.05	0.037	<0.02	0.02	0.027	<0.02	<0.02	<0.5	<0.5	<0.5	<0.5	0.03
PWQO Beryllium Guideline				1100	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	<1	<1	<1	<0.05	<0.05	<0.05	<0.05	<0.050	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<1	<1	<1	<0.05
Boron	µg/L	$29,000^{A}$ $1,500^{B}$	200_{a} [E]	5	<2	2	<10	4	4	<10	<10	4	3.1	<2	<2	4	<2	<10	<2	8	<2	2	5
Cadmium	µg/L	1.0_{STB} [A] 0.09_{LTG} [B]	0.2^{C} $0.1/0.5_{s12}$ [E]	0.04	**0.06** [B]	0.04	0.0344	0.06	0.05	0.0257	0.0265	0.05	0.0543	0.04	0.05	**0.0533** [B]	0.04	0.0139	0.04	**0.13** [BE]	0.04	0.04	0.06
CWQG Cadmium Guideline (STB)				1.67	0.35	0.48	0.84	0.99	0.98	1.01	106	1.4	0.72	0.65	0.65	0.5	0.61	0.43	1.51	0.89	0.48	0.53	1.34
CWQG Cadmium Guideline (LTG)				0.13	0.04	0.05	0.08	0.09	0.09	0.09	0.09	0.11	0.07	0.06	0.06	0.05	0.06	0.04	0.12	0.08	0.05	0.05	0.11
PWQO Cadmium Guideline				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	22,200	4,740	6,360	11,700	14,200	13,100	14,500	15,100	19,900	8,850	8,640	8,420	9,090	8,290	5,770	20,800	26,000	6,590	6,890	18,300
Cerium	µg/L	n/v	n/v	2	<1	<1	-	1	2	-	-	2	1.4	1	1	<1	<1	-	2	5	1	<1	1
Cesium	µg/L	n/v	n/v	<1	<1	<1	0.071	0.01	0.02	0.101	<0.072	0.08	0.052	0.01	0.02	0.021	0.01	<0.01	<1	<1	<1	<1	0.02
Chromium	µg/L	n/v	n/v	2	<1	1	1.81	1.1	1.5	2.5	1.95	2.1	2.45	1.1	1.1	1.47	1.2	0.68	2	5	1	1	1.4
Cobalt	µg/L	n/v	0.9^{E}	0.7	0.3	0.2	0.47	0.3	0.3	0.59	0.45	0.5	0.3	0.1	0.1	0.21	0.3	0.46	0.5	**1.8** [E]	0.2	0.2	0.3
Copper	µg/L	2_{TBC1} [B]	5^{C} $1/5_{s13}$ [E]	2	**2** [E]	**7** [BCE]	**2.19** [B]	1.7	**2.1** [B]	**2.21** [B]	1.98	**2.1** [B]	1.9	**2.6** [B]	2	1.9	1.5	0.63	**3** [B]	**3** [B]	2	2	**2.8** [B]
CCME Copper Guideline				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline				5	1	5	5	5	5	5	5	5	5	5	5	5	5	1	5	5	5	5	5
Europium	µg/L	n/v	n/v	<1	<1	<1	-	<1	<1	-	-	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1
Gallium	µg/L	n/v	n/v	<1	<1	<1	-	<1	<1	-	-	<1	<1	<1	<1	<1	<1	-	<1	1	<1	<1	<1
Iron	µg/L	300^{B}	300^{C}	**1,600** [BC]	**478** [BC]	**550** [BC]	**1,070** [BC]	**700** [BC]	**1,000** [BC]	**1,510** [BC]	**1,270** [BC]	**1,300** [BC]	**1,010** [BC]	**700** [BC]	**700** [BC]	**790** [BC]	**800** [BC]	**741** [BC]	**1,400** [BC]	**3,640** [BC]	**550** [BC]	**530** [BC]	**800** [BC]
Lanthanum	µg/L	n/v	n/v	<1	<1	<1	-	<1	<1	-	-	1	<1	<1	<1	<1	<1	-	<1	2	<1	<1	<1
Lead	µg/L	1_{TBC1} [B]	$5/10/20/25_{s14}$ [C] $1/3/5_{s15}$ [E]	0.6	0.3	0.6	0.582	0.47	0.88	0.674		0.57	0.42	0.45	0.34	0.34	0.38	0.296	0.6	**1.8** [B]	0.4	0.3	0.57
CCME Lead Guideline				2.4	1	1	1	1	1	1		1.9	1	1	1	1	1	1	2.1	1	1	1	1.8
PWQO Lead Guideline (s14)				25	5	10	10	20	10	20		20	10	5	5	10	5	5	20	25	5	5	20
PWQO Lead Guideline (s15)				3	1	1	3	3	3	3		3	3	3	3	1	1	1	3	3	1	1	3
Lithium	µg/L	n/v	n/v	<5	<5	<5	1	<1	1	1.8	<1.4	2	1	<1	<1	1.1	<1	<1	<5	<5	<5	<5	<1
Magnesium	µg/L	n/v	n/v	5,530	1,320	1,620	3,090	3,240	2,860	3,650	3,790	4,680	2,280	2,270	2,230	2,240	2,140	1,760	5,340	6,720	1,560	1,690	4,180
Manganese	µg/L	$3,600_{EQ3}$ [A] 430_{EQ4} [B]	n/v	130	46	35	70.4	64.2	63.6	80.7	74.2	63.9	42.8	28	25.5	28	105	96.7	34	278	41	26	85.9
CCME Manganese Guideline (EQ3)				5454.1	1970.8	1970.8	3016.7	3481.6	3456	3532.7	3691.8	4677	2641.5	2414.1	2407.4	1970.8	2292.6	1970.8	5012.9	3172.7	1970.8	2039.8	4523.2
CCME Manganese Guideline (EQ4)				590	290	350	380	380	380	350	430	490	330	330	330	350	290	350	490	380	350	330	490
Mercury	µg/L	0.026^{B}	0.2^{C}	***<0.1***	***<0.1***	<0.01	-	<0.01	-	-	-	-	-	<0.01	<0.01	-	<0.01	-	***<0.1***	***<0.1***	***<0.1***	<0.01	<0.01
Mercury (Trace)	ng/L	n/v	n/v	4.55	6.83	6.12	<5	3.84	6.43	3.12	2.93	3.28	6.46	6.84	6.99	-	3.61	1.37	6.26	7.87	7.46	7.35	4.27
Mercury (by CV)	ng/L	n/v	n/v	-	-	-	-	-	-	-	-	-	<0.01	-	-	<0.01	-	-	-	-	-	-	-
Methyl Mercury	ng/L	4^{B}	n/v	-	-	0.15	-	0.19	0.27	0.11	0.16	0.23	0.19	0.12	0.14	1.02	0.09	0.06	-	-	-	0.15	0.25
Molybdenum	µg/L	73^{B}	40^{E}	<1	<1	<1	0.078	0.46	0.16	0.101	0.097	0.06	<0.05	0.12	0.97	<0.05	0.07	<0.05	<1	<1	<1	<1	0.32
Nickel	µg/L	25_{TBC1} [B]	25^{C}	<1	<1	<1	1.45	1.1	1.3	1.99	1.55	1.6	1.5	1.1	1.2	<0.5	<0.5	0.64	2	4	<1	<1	1.3
CCME Nickel Guideline				80.4	25	25	25	25	25	25	25	70.4	25	25	25	25	25	25	74.8	25	25	25	68.4
Niobium	µg/L	n/v	n/v	<1	<1	<1	-	<1	<1	-	-	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1
Phosphorus	µg/L	n/v	30_{s4} [E]	-	-	-	***<50***	-	-	**51** [E]	***<50***	-	-	-	-	-	-	***<50***	-	-	-	-	-
Potassium	µg/L	n/v	n/v	670	490	200	433	320	270	515	453	570	330	210	210	240	170	178	720	1,110	300	200	480
Rhodium	µg/L	n/v	n/v	<1	<1	<1	-	<1	<1	-	-	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1
Rubidium	µg/L	n/v	n/v	2	2	<1	1.97	1.1	1.1	2.56	2.09	2.4	1.7	0.8	0.9	0.92	0.6	0.99	2	6	1	<1	1.5
Scandium	µg/L	n/v	n/v	2	<1	<1	-	<1	2	-	-	1	1.5	1	1	1.5	<1	-	2	4	<1	<1	<1
Selenium	µg/L	1^{B}	100^{C}	<0.5	<0.2	<0.5	0.13	0.37	0.16	0.15	0.166	<0.05	0.17	<0.05	<0.05	0.11	0.17	0.087	<0.2	<0.5	<0.2	<0.5	0.08
Silicon	µg/L	n/v	n/v	4,700	1,500	700	2,080	1,280	2,340	3,210	2,790	2,330	3,010	1,650	1,780	2,160	2,290	2,040	4,300	7,100	1,800	900	1,670
Silver	µg/L	0.25^{B}	0.1^{C}	<0.1	<0.1	<0.1	<0.01	0.06	<0.01	<0.01	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	0.06
Sodium	µg/L	n/v	n/v	2,960	500	600	1,060	1,320	1,070	1,280	1,400	2,040	925	990	890	1,110	750	356	2,770	3,430	500	700	1,860
Strontium	µg/L	n/v	n/v	38	8	13	24	22.6	23.4	30.7	31.8	36.9	21.5	17.7	17.9	16.7	15.1	12.2	41	50	11	14	28.5
Sulfur	µg/L	n/v	n/v	<800	<800	<800	<500	1,300	2,100	<500	<500	<500	<500	<500	<500	2,100	<500	<500	1,300	<800	<800	<800	1,400
Tellurium	µg/L	n/v	n/v	<1	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.20	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<1	<1	<1	<0.2
Thallium	µg/L	0.8^{B}	0.3_{s} [E]	<0.1	<0.1	<0.1	0.011	0.02	<0.01	0.011	<0.010	<0.01	0.013	<0.01	0.03	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.01
Thorium	µg/L	n/v	n/v	<1	<1	<1	0.16	0.1	<0.1	0.18	0.18	0.3	0.22	0.1	0.1	<0.1	<0.1	<0.1	<1	<1	<1	<1	0.1
Tin	µg/L	n/v	n/v	<1	<1	<1	<0.1	0.2	0.2	<0.1	<0.10	0.3	0.44	0.2	0.3	0.92	<0.1	<0.1	<1	<1	<1	<1	<0.1
Titanium	µg/L	n/v	n/v	34	16	13	31.4	10.3	10.5	39.4	29.5	34.4	23	7.9	10.4	12.9	9.7	3.4	30	103	15	12	12.4
Tungsten	µg/L	n/v	30_{s} [E]	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<1	<1	<0.1
Uranium	µg/L	33^{A} 15^{B}	5_{a} [E]	<1	<1	<1	0.079	0.06	0.07	0.088	0.085	0.08	0.055	0.04	0.04	0.047	0.03	<0.01	<1	<1	<1	<1	0.08
Vanadium	µg/L	n/v	6^{E}	2	<1	1	1.99	1.2	1.5	2.5	2.07	2.3	1.7	0.8	0.9	0.86	0.8	<0.5	2	4	1	1	1.4
Yttrium	µg/L	n/v	n/v	<1	<1	<1	-	<1	<1	-	-	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1
Zinc	µg/L	37_{EQ1} [A] 7.0_{EQ2} [B]	30^{C} 20^{E}	6	5	8	6.1	5	4	7.2	5.0	11	5.5	9	7	7.4	7	6.6	7	-	5	5	7
CCME Zinc Guideline (EQ1)				54.8	15.1	19.9	31.2	35.8	35.5	36.3	37.8	47.3	27.5	25.3	25.2	20.3	24.1	18	50.6	32.8	19.8	21.5	45.9
CCME Zinc Guideline (EQ2)				74.5	33.4	30.7	34.3	37.5	42.2	33.7	34.8	55.4	59.4	60	59.2	35.5	95.6	26.8	62.2	33.3	28.4	38.4	59.9
Zirconium	µg/L	n/v	4_{a} [E]	3	2	1	0.81	1.6	2.9	1.12	1.06	**5** [E]	3.91	1.8	1.8	1.5	0.9	<0.2	3	**5** [E]	1	1	2

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Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				WBR-S-06 (Continued)					WBR-S-07					WBR-S-Ref								
Sample Date				15-Jul-23	24-Aug-23	20-Sep-23	18-Oct-23	9-Nov-23	28-Feb-23	21-Apr-23	17-Jul-23	4-Dec-23	4-Dec-23	10-Mar-23	19-Apr-23	23-May-23	12-Jun-23	31-Jul-23	24-Aug-23	26-Sep-23	18-Oct-23	9-Nov-23	4-Dec-23
Sample ID				WBR-S-06	WBR-S-06	WBR-S-06	WBR-S-06	WBR-S-06	WBR-S-07	WBR-S-07	WBR-S-07	WBR-S-07	SWDup	WBR-S-Ref	WBR-REF	WBR-S-Ref	WBR-S-Ref	WBR-S-Ref	WBR-S-Ref	WBR-S-Ref	WBR-S-Ref	WBR-S-Ref	WBR-S-Ref
Sampling Company				UNKNOWN	UNKNOWN	STANTEC	STANTEC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	CNC	STANTEC	CNC	STANTEC
Laboratory				TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK
Laboratory Work Order				506589	510423	513650	516339	518809	492012	496973	506922	520817	520817	492826	496342	500390	502339	507838	510423	513823	516339	518809	520817
Laboratory Sample ID				1906649	1920567	1931822	1942683	1951273	1855435	1872509	1907861	1958011	1958012	1858179	1870248	1884832	1891903	1911307	1920566	1932455	1942681	1951271	1958006
Sample Type	Units	CCME	PWQO										Field Duplicate										
Field Parameters																							
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	7.13	**5.84**[BC]	**5.55**[BC]	**4.74**[BC]	6.79	7.24	**6.25**[BC]	6.59	6.67	-	6.7	6.64	-	**6.47**[BC]	**5.07**[BC]	**5.67**[BC]	**4.48**[BC]	**5.07**[BC]	**6.05**[BC]	**6.21**[BC]
Temperature, Field	deg C	n/v	30_{96}[C]	20.3	17.76	9.13	6.5	0.65	0	0.39	21.8	0.37	-	0.05	0.07	11.54	16.96	18.71	17.75	10.87	6.01	0.25	0.34
General Chemistry																							
Acidity as CaCO3	mg/L	n/v	n/v	8	8	7	12	15	9	5	6	12	6	11	13	8	7	7	13	12	11	13	5
Alkalinity, Total	mg/L	n/v	n/v	42	59	26	21	17	73	15	51	31	34	66	15	19	50	51	50	25.9	24	32.5	21
Ammonia (as N)	mg/L	[B] TBC2	n/v	0.07	0.064	0.068	0.07	0.0707	0.111	0.037	0.06	0.106	0.107	0.06	0.035	0.052	0.043	0.056	0.057	0.0627	0.11	0.0656	0.108
Bromide	mg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640[A] 120[B]	n/v	0.2	0.5	0.3	0.4	0.41	0.7	0.2	0.2	0.5	0.4	1.1	0.2	<0.2	0.2	0.3	1.2	0.36	0.5	0.6	0.6
Chrysotile Asbestos (>0.5 um)	MFL	n/v	n/v	-	-	-	-	-	-	-	-	<0.20	-	-	-	-	-	-	-	-	-	-	<0.20
Chrysotile Asbestos (>10 um)	MFL	n/v	n/v	-	-	-	-	-	-	-	-	<0.20	-	-	-	-	-	-	-	-	-	-	<0.20
Cyanide	mg/L	0.0050[B]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide (Free)	mg/L	0.0050[B]	0.0050[C]	0.004	0.004	0.003	0.002	**0.0186**[BC]	0.004	0.002	0.002	0.004	-	0.002	0.003	0.004	0.003	**0.006**[BC]	0.004	0.0022	0.003	0.0038	0.002
Cyanide (Strong Acid Dissociable)	mg/L	0.0050[B]	n/v	0.005	0.004	<0.002	<0.002	0.0026	<0.002	**0.006**[B]	0.003	0.002	-	<0.002	0.005	<0.002	**0.01**[B]	**0.006**[B]	0.004	0.0049	<0.002	0.0026	<0.002
Cyanide (Weak Acid Dissociable)	mg/L	0.0050[B]	n/v	**0.012**[B]	0.004	0.003	0.003	0.0048	<0.001	0.003	<0.001	0.003	-	0.002	0.003	0.002	<0.001	**0.008**[B]	0.004	0.0039	<0.001	0.0046	0.003
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	37.1	31.9	50	49.1	47.3	31.8	21	36	44	44	30	21.4	25.9	34	35	31.5	48.4	48.4	41.8	40
Electrical Conductivity, Lab	µS/cm	n/v	n/v	87	111	58	50	45.6	145	34	91	74	81	140	33	41	91	107	107	58.9	53	70.7	64
Fluoride	mg/L	0.12[B]	n/v	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.09	**0.13**[B]	<0.05
Hardness (as CaCO3)	mg/L	n/v	n/v	50.7	62.7	40.8	32.6	23.6	63.7	21.5	56.9	44.9	44.2	72.2	19.3	26.3	55.2	61.9	56.7	38.9	33.9	30.3	34.6
Nitrate (as N)	mg/L	124[A] 3.0[B]	n/v	<0.1	0.1	0.1	0.3	0.22	0.1	<0.1	<0.1	0.5	0.5	0.3	0.2	0.2	<0.1	<0.1	0.1	0.2	0.2	0.21	0.5
Nitrite (as N)	mg/L	0.060[B]	n/v	<0.01	<0.01	0.01	0.01	0.029	<0.01	<0.01	<0.01	0.04	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.012	0.01	0.028	0.05
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	7.11	7.2	6.81	6.67	6.59	7.45	6.7	7.26	6.5	6.96	7.25	**6.46**[BC]	6.66	7.17	7.31	7.17	6.94	**6.19**[BC]	7.02	6.83
Phosphorus, Total	mg/L	n/v	0.030_{94}[E]	**0.041**[E]	**0.041**[E]	**0.031**[E]	0.019	**0.0523**[E]	**0.056**[E]	0.026	**0.039**[E]	0.03	0.028	**0.069**[E]	0.028	0.02	**0.037**[E]	**0.052**[E]	**0.041**[E]	**0.0365**[E]	0.02	0.0243	0.024
Radium-226	Bq/L	n/v	1[C]	-	-	-	-	-	-	-	-	0.007	-	-	-	-	-	-	-	-	-	-	<0.005
Sulfate	mg/L	n/v	n/v	0.9	1.8	0.8	0.8	0.54	2.1	<0.5	0.8	1.4	1.4	5.2	0.6	<0.5	<0.5	0.8	6.1	1	1	1.1	2.4
BC MECC Sulfate Guideline (s2)				218	218	218	218	128	218	128	218	218	218	218	128	128	218	218	218	218	218	128	218
Total Dissolved Solids	mg/L	n/v	n/v	25	140	120	75	115	140	55	120	100	75	155	55	85	110	145	125	110	125	105	115
Total Suspended Solids	mg/L	[B] SN	n/v	9.33	14	8.67	5	19	9.33	7.33	12.7	4.3	4.3	14	6	9	6.7	11	8.67	14	7.33	6.7	7

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Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				WBR-S-06 (Continued)					WBR-S-07					WBR-S-Ref								
Sample Date				15-Jul-23	24-Aug-23	20-Sep-23	18-Oct-23	9-Nov-23	28-Feb-23	21-Apr-23	17-Jul-23	4-Dec-23	4-Dec-23	10-Mar-23	19-Apr-23	23-May-23	12-Jun-23	31-Jul-23	24-Aug-23	26-Sep-23	18-Oct-23	9-Nov-23	4-Dec-23
Sample ID				WBR-S-06	WBR-S-06	WBR-S-06	WBR-S-06	WBR-S-06	WBR-S-07	WBR-S-07	WBR-S-07	WBR-S-07	SWDup	WBR-S-Ref	WBR-REF	WBR-S-Ref	WBR-S-Ref	WBR-S-Ref	WBR-S-Ref	WBR-S-Ref	WBR-S-Ref	WBR-S-Ref	WBR-S-Ref
Sampling Company				UNKNOWN	UNKNOWN	STANTEC	STANTEC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	CNC	STANTEC	CNC	STANTEC
Laboratory				TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK
Laboratory Work Order				506589	510423	513650	516339	518809	492012	496973	506922	520817	520817	492826	496342	500390	502339	507838	510423	513823	516339	518809	520817
Laboratory Sample ID				1906649	1920567	1931822	1942683	1951273	1855435	1872509	1907861	1958011	1958012	1858179	1870248	1884832	1891903	1911307	1920566	1932455	1942681	1951271	1958006
Sample Type	Units	CCME	PWQO										Field Duplicate										
Metals - Dissolved																							
Aluminum	µg/L	$5/100_{VAR1}$ [B]	n/v	**228** [B]	**124** [B]	**258** [B]	**295** [B]	**218** [B]	**158** [B]	**150** [B]	**133** [B]	**231** [B]	**227** [B]	**143** [B]	**146** [B]	**192** [B]	**123** [B]	**131** [B]	**134** [B]	**255** [B]	**284** [B]	**235** [B]	**253** [B]
CWQG Aluminum Guideline				100	100	100	100	5	100	100	100	5	100	100	5	100	100	100	100	100	5	100	100
Aluminum (0.2u)	µg/L	n/v	75^{E}	**165** [E]	75	-	-	-	-	**103** [E]	**122** [E]	-	-	-	**89** [E]	**150** [E]	-	-	**91** [E]	-	-	-	-
Antimony	µg/L	n/v	20^{E}	<0.1	<0.1	0.2	<0.1	<0.1	<0.5	<0.5	0.1	<0.1	<0.1	<0.5	<0.5	<0.5	-	<0.1	<0.1	0.24	<0.1	<0.1	0.1
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	1.4	1	1	0.9	0.74	<1	<1	0.9	0.9	0.9	1	<1	<1	-	1.4	1.1	1.24	0.9	0.76	0.9
Barium	µg/L	n/v	n/v	8.8	17.9	6	6	4.58	7	5	12.7	6.3	6.9	6	13	4	-	12.9	15.5	6.13	6.2	6.23	6.5
Beryllium	µg/L	n/v	$11/1,100_{s3}$ [C]	0.02	<0.02	<0.02	<0.02	<0.02	<0.5	<0.5	<0.02	0.02	<0.02	<0.5	<0.5	<0.5	-	0.02	<0.02	0.029	0.02	<0.02	0.03
PWQO Beryllium Guideline				11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	<0.05	0.06	<0.05	<0.05	<0.05	<1	<1	<0.05	<0.05	<0.05	<1	<1	<1	-	<0.05	0.06	<0.05	<0.05	<0.05	<0.05
Boron	µg/L	$29,000^{A}$ $1,500^{B}$	200_{a} [E]	6	3	5	2	3.7	<2	4	4	3	4	9	2	2	-	4	11	4.6	3	5.1	6
Cadmium	µg/L	1.0_{STB} [A] 0.09_{LTG} [B]	0.2^{C} $0.1/0.5_{s12}$ [E]	0.04	0.03	0.04	0.05	0.039	<0.1	**<0.1**	0.03	0.05	0.05	<0.1	**<0.1**	**<0.1**	-	0.03	0.02	0.048	0.04	0.0514	0.07
CWQG Cadmium Guideline (STB)				1.05	1.31	0.84	0.67	0.48	1.33	0.44	1.18	0.93	0.92	1.51	0.39	0.54	1.15	1.29	1.18	0.8	0.7	0.62	0.71
CWQG Cadmium Guideline (LTG)				0.09	0.11	0.08	0.06	0.05	0.11	0.04	0.1	0.08	0.08	0.12	0.04	0.05	0.1	0.11	0.1	0.07	0.06	0.06	0.07
PWQO Cadmium Guideline				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	14,400	17,600	11,800	9,180	8,000	19,900	5,650	15,700	11,900	12,700	20,000	5,480	6,850	-	16,600	16,000	9,800	9,490	11,800	9,830
Cerium	µg/L	n/v	n/v	1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	-	1	<1	<1	<1	<1	<1
Cesium	µg/L	n/v	n/v	<0.01	<0.01	<0.01	<0.01	<0.01	<1	<1	<0.01	<0.01	<0.01	<1	<1	<1	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	µg/L	n/v	n/v	11.2	1.7	1.5	0.9	0.79	2	<1	1.3	1	1	2	<1	<1	-	1.1	1.8	1.47	0.9	0.87	1
Cobalt	µg/L	n/v	0.9^{E}	0.2	<0.1	0.1	<0.1	0.12	0.3	<0.1	0.2	0.2	0.3	0.1	<0.1	<0.1	-	0.2	<0.1	<0.1	<0.1	0.11	0.1
Copper	µg/L	2_{TBC1} [B]	5^{C} $1/5_{s13}$ [E]	1.8	**2.1** [B]	**2.9** [B]	2	**2.28** [B]	1	2	**7.2** [BCE]	1.6	**2.3** [B]	2	**5** [BE]	2	-	**2.6** [B]	**2.4** [B]	**2.73** [B]	**3.2** [B]	**2.58** [B]	**2.8** [B]
CCME Copper Guideline				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline				5	5	5	5	5	5	5	5	5	5	5	1	5	5	5	5	5	5	5	5
Europium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1
Gallium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1
Iron	µg/L	300^{B}	300^{C}	**800** [BC]	**610** [BC]	**600** [BC]	**650** [BC]	**645** [BC]	**720** [BC]	260	**500** [BC]	**700** [BC]	**800** [BC]	**590** [BC]	227	**330** [BC]	-	**620** [BC]	**560** [BC]	**620** [BC]	**620** [BC]	**650** [BC]	**700** [BC]
Lanthanum	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1
Lead	µg/L	1_{TBC1} [B]	$5/10/20/25_{s14}$ [C] $1/3/5_{s15}$ [E]	0.3	0.22	0.26	0.27	0.21	0.2	0.2	0.28	0.25	0.28	0.2	0.2	0.2	-	0.26	0.22	0.22	0.25	0.2	0.31
CCME Lead Guideline				1	1.8	1	1	1	1.8	1	1	1	1	2.1	1	1	1	1.7	1	1	1	1	1
PWQO Lead Guideline (s14)				20	20	10	10	5	20	5	20	10	10	20	5	5	20	20	20	10	10	10	10
PWQO Lead Guideline (s15)				3	3	3	3	1	3	1	3	3	3	3	1	1	3	3	3	3	3	1	3
Lithium	µg/L	n/v	n/v	<1	1	1	<1	<1	<5	<5	<1	<1	<1	<5	<5	<5	-	<1	<1	<1	<1	<1	<1
Magnesium	µg/L	n/v	n/v	3,130	3,890	2,650	2,310	1,950	4,800	1,360	3,450	2,850	3,050	4,660	1,370	1,550	-	3,390	3,460	2,250	2,420	2,740	2,340
Manganese	µg/L	$3,600_{EQ3}$ [A] 430_{EQ4} [B]	n/v	64.1	39.1	31.6	20.4	30.1	20	29	63.5	99.9	172	13	18	18	-	43.7	28.6	19.5	16.1	24.8	34.5
CCME Manganese Guideline (EQ3)				3666.4	4418.2	3029.7	2488	1970.8	4480	1970.8	4057.2	3295.4	3250.3	5000.8	1970.8	2060.5	3950.6	4368.6	4044.7	2905.5	2574.9	2333.2	2621.5
CCME Manganese Guideline (EQ4)				500	490	350	330	330	490	350	490	330	350	490	310	330	500	490	500	350	290	380	350
Mercury	µg/L	0.026^{B}	0.2^{C}	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	-	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***	***<0.1***
Mercury (by CV)	µg/L	n/v	n/v	<0.01	<0.01	-	-	-	-	-	<0.01	-	-	-	-	-	-	<0.01	<0.01	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	0.06	<0.05	<0.05	<0.05	<0.05	<1	<1	0.15	0.11	0.14	<1	<1	<1	-	0.07	<0.05	0.18	0.07	<0.05	1.09
Nickel	µg/L	25_{TBC1} [B]	25^{C}	1.4	1.2	1.1	1.1	<0.5	<1	<1	0.9	1	0.9	<1	<1	<1	-	1	1.2	1.2	1.2	0.58	1
CCME Nickel Guideline				25	67	25	25	25	67.8	25	25	25	25	74.6	25	25	25	66.4	25	25	25	25	25
Niobium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1
Phosphorus	µg/L	n/v	30_{s4} [E]	***<50***	***<50***	***<50***	**2,170** [E]	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***	-	***<50***	***<50***	***<50***	***<50***	***<50***	***<50***
Potassium	µg/L	n/v	n/v	310	420	270	230	120	450	300	260	260	270	430	320	200	-	320	550	290	250	270	330
Rhodium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1
Rubidium	µg/L	n/v	n/v	1	1.2	0.8	0.7	0.36	1	<1	0.9	0.7	0.7	1	<1	<1	-	1	1.6	1	0.7	0.72	0.8
Scandium	µg/L	n/v	n/v	2	<1	1	1	1	1	<1	<1	<1	<1	1	<1	<1	-	<1	<1	1.1	1	1.4	<1
Selenium	µg/L	1^{B}	100^{C}	<0.05	<0.05	0.11	<0.05	<0.05	0.2	<0.2	<0.05	<0.05	<0.05	<0.2	<0.2	<0.5	-	<0.05	<0.05	0.13	<0.05	<0.05	0.12
Silicon	µg/L	n/v	n/v	2,390	1,040	2,630	1,650	1,310	3,100	1,200	1,580	2,120	2,210	3,300	1,100	<600	-	1,400	860	2,100	1,670	1,740	1,960
Silver	µg/L	0.25^{B}	0.1^{C}	<0.01	0.02	<0.01	<0.01	<0.01	<0.1	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	-	<0.01	0.03	<0.01	<0.01	<0.01	<0.01
Sodium	µg/L	n/v	n/v	1,260	1,880	1,190	1,030	748	2,340	500	1,340	1,280	1,270	2,590	500	700	-	1,170	2,910	1,060	1,200	1,420	1,510
Strontium	µg/L	n/v	n/v	25.5	33.1	21.2	19	12.9	35	10	24.2	21.2	22.9	34	10	13	-	26	30.8	22.4	20.6	21.6	19.5
Sulfur	µg/L	n/v	n/v	2,500	1,700	3,400	<500	1,900	860	1,000	<500	900	1,100	1,900	<800	<800	-	<500	2,700	<500	<500	2,300	1,100
Tellurium	µg/L	n/v	n/v	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<1	<0.2	<0.2	<0.2	<1	<1	<1	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/L	0.8^{B}	0.3_{b} [E]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	-	<0.01	<0.01	0.011	<0.01	<0.01	0.03
Thorium	µg/L	n/v	n/v	<0.1	0.1	0.1	0.1	<0.1	<1	<1	0.1	<0.1	<0.1	<1	<1	<1	-	0.2	0.2	0.18	0.1	<0.1	0.1
Tin	µg/L	n/v	n/v	<0.1	0.3	0.2	0.2	<0.1	<1	<1	0.3	<0.1	<0.1	<1	<1	<1	-	0.5	0.5	<0.1	0.4	0.14	<0.1
Titanium	µg/L	n/v	n/v	7.3	5.3	9.4	8.2	4.43	7	4	5.3	6.4	6.3	7	4	4	-	6.1	5.3	8.42	5.5	5.41	7.1
Tungsten	µg/L	n/v	30_{E} [E]	<0.1	0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	<0.1	<0.1	<1	<1	<1	-	<0.1	0.2	<0.1	<0.1	<0.1	<0.1
Uranium	µg/L	33^{A} 15^{B}	5_{a} [E]	0.05	0.05	0.05	0.04	0.026	<1	<1	0.08	0.05	0.05	<1	<1	<1	-	0.08	0.05	0.047	0.04	0.05	0.05
Vanadium	µg/L	n/v	6^{E}	1.2	1.1	1.1	0.7	<0.5	<1	<1	1.4	0.7	0.8	1	<1	<1	-	1	1.2	0.99	0.7	0.57	0.8
Yttrium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1
Zinc	µg/L	37_{EQ1} [A] 7.0_{EQ2} [B]	30^{C} 20^{E}	4	4	6	6	6.7	4	5	4	6	7	4	4	6	-	3	4	5.7	12	6.2	8
CCME Zinc Guideline (EQ1)				37.6	44.8	31.4	26	19.9	45.4	18.4	41.4	34	33.5	50.4	16.8	21.7	40.3	44.4	41.2	30.1	26.9	24.5	27.3
CCME Zinc Guideline (EQ2)				53.9	57.6	63.1	56.7	43.9	47.7	26.6	52.5	84.5	57.2	61.7	29.4	36.2	53.7	54	53.4	53.5	86.6	37.3	48.6
Zirconium	µg/L	n/v	4_{a} [E]	2.4	2.5	2.9	1.8	0.98	2	<1	1.4	1.4	1.4	2	1	1	-	2.7	2.7	3.43	1.8	1.4	1.6

See notes on last page

Table
Summary of Surface Water Analytical Data - Rivers-Streams-Creeks
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Sample Location				WBR-S-06 (Continued)					WBR-S-07					WBR-S-Ref								
Sample Date				15-Jul-23	24-Aug-23	20-Sep-23	18-Oct-23	9-Nov-23	28-Feb-23	21-Apr-23	17-Jul-23	4-Dec-23	4-Dec-23	10-Mar-23	19-Apr-23	23-May-23	12-Jun-23	31-Jul-23	24-Aug-23	26-Sep-23	18-Oct-23	9-Nov-23	4-Dec-23
Sample ID				WBR-S-06	WBR-S-06	WBR-S-06	WBR-S-06	WBR-S-06	WBR-S-07	WBR-S-07	WBR-S-07	WBR-S-07	SWDup	WBR-S-Ref	WBR-REF	WBR-S-Ref	WBR-S-Ref	WBR-S-Ref	WBR-S-Ref	WBR-S-Ref	WBR-S-Ref	WBR-S-Ref	WBR-S-Ref
Sampling Company				UNKNOWN	UNKNOWN	STANTEC	STANTEC	CNC	UNKNOWN	UNKNOWN	UNKNOWN	STANTEC	STANTEC	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	CNC	STANTEC	CNC	STANTEC
Laboratory				TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK	TESTMARK
Laboratory Work Order				506589	510423	513650	516339	518809	492012	496973	506922	520817	520817	492826	496342	500390	502339	507838	510423	513823	516339	518809	520817
Laboratory Sample ID				1906649	1920567	1931822	1942683	1951273	1855435	1872509	1907861	1958011	1958012	1858179	1870248	1884832	1891903	1911307	1920566	1932455	1942681	1951271	1958006
Sample Type	Units	CCME	PWQO										Field Duplicate										
Metals - Total																							
Aluminum	µg/L	$5/100_{VAR1}$[B]	n/v	**359**[B]	**500**[B]	**402**[B]	**401**[B]	**1,520**[B]	**904**[B]	**530**[B]	**486**[B]	**580**[B]	**577**[B]	**1,870**[B]	**435**[B]	**616**[B]	**389**[B]	**378**[B]	**364**[B]	**870**[B]	**525**[B]	**450**[B]	**710**[B]
CWQG Aluminum Guideline				100	100	100	100	5	100	100	100	5	100	100	5	100	100	100	100	100	5	100	100
Antimony	µg/L	n/v	20^{E}	0.2	0.9	0.2	<0.1	<0.1	<0.5	<0.5	0.3	<0.1	<0.1	<0.5	<0.5	<0.5	0.3	<0.1	1.1	0.2	<0.1	<0.1	0.1
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	1.3	1.1	1	0.8	0.8	1	<1	1.2	0.8	0.8	2	<1	<1	1.4	1.4	1.1	1.05	0.9	0.66	0.9
Barium	µg/L	n/v	n/v	8.7	11	7.1	6.4	12	12	6	9.5	8.4	8.2	17	6	7	9.1	8.7	8.3	9.4	8	7.39	8.7
Beryllium	µg/L	n/v	$11/1,100_{s3}$[C]	0.03	0.04	0.03	<0.02	0.054	<0.5	<0.5	0.04	0.02	0.03	<0.5	<0.5	<0.5	0.11	0.04	0.02	0.035	0.02	<0.02	0.04
Beryllium	µg/L	n/v	$11/1,100_{s3}$[C]	0.03	0.04	0.03	<0.02	0.054	<0.5	<0.5	0.04	0.02	0.03	<0.5	<0.5	<0.5	0.11	0.04	0.02	0.035	0.02	<0.02	0.04
PWQO Beryllium Guideline				11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Bismuth	µg/L	n/v	n/v	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<1	0.25	<0.05	<0.05	<1	<1	<1	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.05
Boron	µg/L	$29,000_{a}$[A] $1,500$[B]	200_{a}[E]	5	<2	5	<2	3.7	<2	2	5	3	<2	9	<2	2	5	4	11	3.6	2	4.3	6
Cadmium	µg/L	1.0_{STB}[A] 0.09_{LTG}[B]	0.2^{C} $0.1/0.5_{s12}$[E]	0.06	0.04	0.05	0.05	**0.0897**[B]	0.04	0.04	0.05	0.05	0.05	0.06	**0.06**[B]	0.04	**0.136**[BE]	0.05	0.04	0.0589	0.05	0.0528	0.07
CWQG Cadmium Guideline (STB)				1.05	1.31	0.84	0.67	0.48	1.33	0.44	1.18	0.93	0.92	1.51	0.39	0.54	1.15	1.29	1.18	0.8	0.7	0.62	0.71
CWQG Cadmium Guideline (LTG)				0.09	0.11	0.08	0.06	0.05	0.11	0.04	0.1	0.08	0.08	0.12	0.04	0.05	0.1	0.11	0.1	0.07	0.06	0.06	0.07
PWQO Cadmium Guideline				0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Calcium	µg/L	n/v	n/v	14,200	17,900	11,700	8,740	8,440	20,700	5,770	16,200	12,700	12,500	21,000	5,540	7,050	16,100	16,800	16,300	10,200	9,850	11,500	10,100
Cerium	µg/L	n/v	n/v	2	2	1	1	2.6	2	<1	2	1	1	3	<1	1	2	2	1	1.6	1	<1	1
Cesium	µg/L	n/v	n/v	0.02	0.04	0.01	0.01	0.115	<1	<1	0.03	0.03	0.03	<1	<1	<1	0.02	0.03	0.03	0.063	0.03	0.019	0.05
Chromium	µg/L	n/v	n/v	1.5	1.8	1.6	1	3.05	2	2	1.7	1.6	1.7	4	<1	2	1.3	1.2	1.7	2.37	1.4	1.27	1.8
Cobalt	µg/L	n/v	0.9^{E}	0.3	0.4	0.2	0.1	**1.01**[E]	0.6	0.2	0.5	0.5	0.5	**1**[E]	0.2	0.3	0.4	0.4	0.3	0.32	0.1	0.21	0.3
Copper	µg/L	2_{TBC1}[B]	5^{C} $1/5_{s13}$[E]	2	1.9	2	1.9	**2.05**[B]	2	2	**2.3**[B]	2	1.9	**3**[B]	**2**[E]	2	**2.6**[B]	**2.9**[B]	**2.9**[B]	**2.36**[B]	**2.8**[B]	1.8	**2.5**[B]
CCME Copper Guideline				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
PWQO Copper Guideline				5	5	5	5	5	5	5	5	5	5	5	1	5	5	5	5	5	5	5	5
Europium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Gallium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Iron	µg/L	300^{B}	300^{C}	**900**[BC]	**1,000**[BC]	**900**[BC]	**700**[BC]	**2,070**[BC]	**1,700**[BC]	**630**[BC]	**1,230**[BC]	**1,100**[BC]	**1,100**[BC]	**2,450**[BC]	**491**[BC]	**700**[BC]	**700**[BC]	**800**[BC]	**900**[BC]	**1,110**[BC]	**800**[BC]	**820**[BC]	**1,000**[BC]
Lanthanum	µg/L	n/v	n/v	<1	<1	<1	<1	1.1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1
Lead	µg/L	1_{TBC1}[B]	$5/10/20/25_{s14}$[C] $1/3/5_{s15}$[E]	0.59	0.49	0.43	0.35	**1.35**[BE]	0.7	0.4	0.64	0.36	0.37	1.3	0.3	0.4	0.63	0.54	0.45	0.45	0.41	0.3	0.42
CCME Lead Guideline				1	1.8	1	1	1	1.8	1	1	1	1	2.1	1	1	1	1.7	1	1	1	1	1
PWQO Lead Guideline (s14)				20	20	10	10	5	20	5	20	10	10	20	5	5	20	20	20	10	10	10	10
PWQO Lead Guideline (s15)				3	3	3	3	1	3	1	3	3	3	3	1	1	3	3	3	3	3	1	3
Lithium	µg/L	n/v	n/v	1	2	1	<1	2.4	<5	<5	1	1	1	<5	<5	<5	<1	<1	1	1.2	<1	1.2	1
Magnesium	µg/L	n/v	n/v	3,100	4,040	2,790	2,290	2,550	5,030	1,520	3,640	3,230	3,190	5,230	1,410	1,750	3,370	3,510	3,680	2,540	2,440	2,830	2,480
Manganese	µg/L	$3,600_{EQ3}$[A] 430_{EQ4}[B]	n/v	71.9	75.8	44.1	22.3	203	47	36	102	191	191	107	23	29	78	63.1	45.3	32.2	22.1	33.4	42.8
CCME Manganese Guideline (EQ3)				3666.4	4418.2	3029.7	2488	1970.8	4480	1970.8	4057.2	3295.4	3250.3	5000.8	1970.8	2060.5	3950.6	4368.6	4044.7	2905.5	2574.9	2333.2	2621.5
CCME Manganese Guideline (EQ4)				500	490	350	330	330	490	350	490	330	350	490	310	330	500	490	500	350	290	380	350
Mercury	µg/L	0.026^{B}	0.2^{C}	-	-	<0.01	<0.01	-	***<0.1***	***<0.1***	-	<0.01	***<0.1***	***<0.1***	***<0.1***	<0.01	<0.01	-	-	-	<0.01	-	<0.01
Mercury (Trace)	ng/L	n/v	n/v	6.17	4.57	7.95	7.03	-	5.7	8.32	4.38	4.68	-	4.61	6.98	7.09	4.62	4.57	4.15	7.22	7.35	-	4.66
Mercury (by CV)	µg/L	n/v	n/v	-	-	-	-	<0.01	-	-	-	-	-	-	-	-	-	-	-	<0.01	-	<0.01	-
Methyl Mercury	ng/L	4^{B}	n/v	0.29	0.23	0.20	0.13	1.98	-	-	0.24	0.24	-	-	-	0.16	0.25	<0.02	0.25	0.19	0.16	0.53	0.10
Molybdenum	µg/L	73^{B}	40^{E}	0.15	<0.05	<0.05	<0.05	<0.05	<1	<1	0.26	0.07	0.08	<1	<1	<1	2.65	0.07	<0.05	<0.05	0.14	<0.05	0.2
Nickel	µg/L	25_{TBC1}[B]	25^{C}	1.5	1.6	1.2	1.1	1.1	2	<1	1.6	0.9	0.7	2	<1	<1	1.4	1.3	1.5	1.7	1.4	<0.5	0.8
CCME Nickel Guideline				25	67	25	25	25	67.8	25	25	25	25	74.6	25	25	25	66.4	25	25	25	25	25
Niobium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Phosphorus	µg/L	n/v	30_{s4}[E]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Potassium	µg/L	n/v	n/v	310	520	280	220	340	640	400	330	340	330	870	470	300	400	360	590	400	290	300	450
Rhodium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Rubidium	µg/L	n/v	n/v	1.3	1.9	1	0.8	2.5	3	2	1.6	1.2	1.2	4	2	1	1.7	1.4	2.1	1.9	1.1	1	1.6
Scandium	µg/L	n/v	n/v	2	<1	1	1	2.4	2	1	<1	1	1	3	<1	<1	<1	1	<1	1.6	1	1.5	1
Selenium	µg/L	1^{B}	100^{C}	0.24	<0.05	0.11	0.08	0.078	<0.2	<0.2	0.29	0.22	0.19	<0.2	<0.2	<0.5	**1.42**[B]	<0.05	<0.05	0.11	0.06	0.13	0.23
Silicon	µg/L	n/v	n/v	2,440	1,670	2,760	1,700	3,100	4,600	2,000	2,030	2,850	2,810	6,550	1,600	1,100	1,260	1,640	1,160	2,830	1,980	2,290	2,940
Silver	µg/L	0.25^{B}	0.1^{C}	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	0.01	<0.01	<0.01	<0.1	<0.1	<0.1	0.06	<0.01	<0.01	0.01	<0.01	<0.01	0.01
Sodium	µg/L	n/v	n/v	1,230	1,900	1,160	980	834	2,410	500	1,360	1,300	1,280	2,700	600	700	1,130	1,190	2,960	1,080	1,340	1,410	1,560
Strontium	µg/L	n/v	n/v	25.9	34.4	22.4	18.7	16.9	39	10	28.5	23.2	23.4	42	10	14	24.5	26.6	32.6	24.1	22.5	21.5	21.1
Sulfur	µg/L	n/v	n/v	2,300	1,400	2,700	<500	1,900	<800	<800	<500	1,000	1,000	1,700	<800	<800	1,100	<500	2,600	<500	<500	2,200	1,200
Tellurium	µg/L	n/v	n/v	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<1	<0.2	<0.2	<0.2	<1	<1	<1	0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/L	0.8^{B}	0.3_{b}[E]	<0.01	<0.01	<0.01	<0.01	0.018	<0.1	<0.1	0.01	<0.01	<0.01	<0.1	<0.1	<0.1	0.12	<0.01	<0.01	0.011	<0.01	<0.01	0.02
Thorium	µg/L	n/v	n/v	0.1	0.2	0.2	0.1	0.22	<1	<1	0.3	0.1	0.1	<1	<1	<1	0.1	0.2	0.2	0.24	0.1	<0.1	0.1
Tin	µg/L	n/v	n/v	0.1	0.4	0.5	0.2	0.42	<1	<1	0.5	<0.1	<0.1	<1	<1	<1	0.1	0.2	0.4	0.46	1	0.45	<0.1
Titanium	µg/L	n/v	n/v	11.8	17.3	12.1	8.8	48.9	38	21	14.5	16.7	17.4	78	16	21	12	11.9	11.5	26.3	11.9	12.1	24.2
Tungsten	µg/L	n/v	30_{a}[E]	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	0.3	<0.1	<0.1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Uranium	µg/L	33^{A} 15^{B}	5_{a}[E]	0.08	0.06	0.06	0.05	0.066	<1	<1	0.09	0.06	0.06	<1	<1	<1	0.08	0.09	0.06	0.066	0.05	0.054	0.06
Vanadium	µg/L	n/v	6^{E}	1.6	1.6	1.2	0.8	2.4	2	1	2	1.2	1.2	4	<1	1	1.7	1.5	1.6	1.9	1	0.86	1.4
Yttrium	µg/L	n/v	n/v	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Zinc	µg/L	37_{EQ1}[A] 7.0_{EQ2}[B]	30^{C} 20^{E}	5	6	6	6	11	8	5	9	8	6	11	6	5	5	5	8	7.4	19	5.7	7
CCME Zinc Guideline (EQ1)				37.6	44.8	31.4	26	19.9	45.4	18.4	41.4	34	33.5	50.4	16.8	21.7	40.3	44.4	41.2	30.1	26.9	24.5	27.3
CCME Zinc Guideline (EQ2)				53.9	57.6	63.1	56.7	43.9	47.7	26.6	52.5	84.5	57.2	61.7	29.4	36.2	53.7	54	53.4	53.5	86.6	37.3	48.6
Zirconium	µg/L	n/v	4_{a}[E]	3.2	3.4	3	2	2.54	3	1	3.9	1.6	1.5	**5**[E]	2	2	2.5	4	3.4	**4.4**[E]	2	1.5	2.1

See notes on last page

Table
Summary of Surface Water Analytical Data
Crawford Project Preliminary Water Quality Assessment
Canadian Nickel Company

Notes:

CCME	Canadian Council of Ministers of the Environment
A	Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Life - Freshwater Aquatics Short Term
B	Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Life - Freshwater Aquatics Long Term
PWQO	Provincial Water Quality Objectives of the Ministry of Environment and Energy (MOEE, 1999)
C	PWQO Table 2
D	PWQO Table 2 - Calculated
E	PWQO Table 2 - Interim
BC MECC	British Columbia Ministry of Environment and Climate Change Strategy
F	BC Water Quality Guidelines to Protect Aquatic Life for Sulphate (2023)
6.5[A]	Concentration exceeds the indicated standard.
15.2	Measured concentration did not exceed the indicated standard.
<0.50	Laboratory reporting limit was greater than the applicable standard.
<0.03	Analyte was not detected at a concentration greater than the laboratory reporting limit.
n/v	No standard/guideline value.
-	Parameter not analyzed / not available.
a	This Interim PWQO was set for emergency purposes based on the best information readily available. Employ due caution when applying this value.
b	This Interim PWQO is currently under development. The value is subject to change upon publication by MOE.
EQ1	The short-term benchmark is for dissolved zinc and is calculated using the following equation: Benchmark = exp(0.833[ln(hardness mg·L-1)] + 0.240[ln(DOC mg·L-1)] + 0.526). The value in the table is for surface water of 50 mg CaCO3·L −1 hardness and 0.5 mg·L−1 dissolved organic carbon (DOC). The benchmark equation is valid between hardness 13.8 and 250.5 mg CaCO3·L−1 and DOC 0.3 and 17.3 mg·L−1.
EQ2	The long-term CWQG is for dissolved zinc and is calculated using the following equation: CWQG = exp(0.947[ln(hardness mg·L-1)] - 0.815[pH] + 0.398[ln(DOC mg·L-1)] + 4.625). The value in the table is for surface water of 50 mg CaCO3·L −1 hardness, pH of 7.5 and 0.5 mg·L−1 DOC. The CWQG equation is valid between hardness 23.4 and 399 mg CaCO3·L−1, pH 6.5 and 8.13 and DOC 0.3 to 22.9 mg·L−1.
EQ3	The short-term benchmark is calculated using the benchmark calculator in Appendix B of the Scientific Criteria Document for the Development of the Canadian Water Quality Guidelines for the Protection of Aquatic Life: Manganese or the following equation: Benchmark = exp(0.878[ln(hardness)] + 4.76) where the benchmark is expressed in dissolved manganese concentration (µg/L), and hardness is measured as CaCO3 equivalents in mg/L. The value in the table is for surface water of 50 mg/L hardness. The benchmark equation is valid between hardness 25 and 250 mg/L.
EQ4	The long-term CWQG is found using the look-up table (see Table 5) or the CWQG and benchmark calculator is Appendix B of CCME (2019). The value in the table is for surface water of 50 mg/L hardness and pH of 7.5. The CWQG table is valid between hardness 25 and 670 mg/L and pH 5.8 and 8.4.
LTG	The CWQG for cadmium (i.e. long-term guideline) of 0.09 µg·L-1 is for waters of 50 mg CaCO3·L-1 hardness. The CWQG for cadmium is related to water hardness (as CaCO3): When the water hardness is > 0 to < 17 mg/L, the CWQG is 0.04 µg/L; at hardness ≥ 17 to ≤ 280 mg/L, the CWQG is calculated using this equation (CWQG (µg/L) = 10^{0.83(log[hardness]) – 2.46 }); At hardness > 280 mg/L, the CWQG is 0.37 µg/L.
s2	Sulphate Guideline is hardness dependent. For hardness between 0-30 mg/L, guideline is 128 mg/L. For hardness between 31-75 mg/L, guideline is 218 mg/L. For hardness between 76-180 mg/L, guideline is 309 mg/L. For hardness between 181-250 mg/L, guideline is 429 mg/L. For hardness >250 mg/L, guideline is determined on a site specific basis.
s3	The PWQO for beryllium is hardness dependent. If hardness <75 mg/L than PWQO is 0.011 mg/L. For hardness > 75 mg/L, PWQO is 1.1 mg/L.
s4	Applies to Phosphorus, total. PWQO is 0.03 mg/L for rivers and streams, 0.02 mg/L for lakes, and 0.01 mg/L for lakes naturally below this value.
s6	Temperature at the edge of a mixing zone shall not exceed natural ambient water temperature by more than 10 deg C. The maximum temperature of the receiving body of water shall not exceed 30 deg C. See PWQO pg 25.
s12	The interim PWQO for cadmium is hardness dependent. If hardness <100 mg/L than PWQO is 0.0001 mg/L. For hardness >100 mg/L, PWQO is 0.0005 mg/L.
s13	The interim PWQO for copper is hardness dependent. If hardness <20 mg/L than PWQO is 0.001 mg/L. For hardness >20 mg/L, PWQO is 0.005 mg/L.
s14	PWQO for lead is alkalinity dependent. For alkalinity <20 mg/L, PWQO is 0.005 mg/L. For alkalinity between 20-40 mg/L, PWQO is 0.01 mg/L. For alkalinity between 40-80 mg/L, PWQO is 0.02 mg/L. For alkalinity >80 mg/L, PWQO is 0.025 mg/L.
s15	Interim PWQO for lead is hardness dependent. For hardness <30 mg/L, interim PWQO is 0.001 mg/L. For hardness between 30-80 mg/L, interim PWQO is 0.003 mg/L. For hardness >80 mg/L, interim PWQO is 0.005 mg/L.
SN	see Narrative
STB	The short-term benchmark concentration of 1.0 µg·L-1 is for waters of 50 mg CaCO3·L-1 hardness. The short-term benchmark for cadmium is related to water hardness (as CaCO3): When the water hardness is 0 to < 5.3 mg/L, the short-term benchmark is 0.11 µg/L, At hardness ≥ 5.3 to ≤ 360 mg/L, the short-term benchmark is calculated using this equation (Short-term benchmark (µg/L) = 10^{1.016(log[hardness]) – 1.71 }); At hardness > 360 mg/L, the short-term benchmark is 7.7 µg/L.
TBC1	Value is minimum value available. Sample-specific value to be calculated (equation).
TBC2	To be calculated (equation), then the present guideline values (mg/L NH3) can be converted to mg/L total ammonia-N by multiplying the corresponding guideline value by 0.8224.
VAR1	Variable, 5 µg/L if pH < 6.5 and 100 µg/L if pH > 6.5

Appendix B.7 Local Water Quality Field Measurements

Location ID	Date (dd/mm/yy)	Time (24-hr)	Sample Depth (m)	pH	Water Temperature (deg C)	Conductivity (us/cm)	Conductivity (mS/cm)	Turbidity (NTU)	DO (%)	DO (mg/L)	TDS (mg/L)	ORP (mV)
BS-SW-01	25/05/2023	8:10		3.67	7.75		0.021	33.5	55.0	6.55		320
BS-SW-01	22/06/2023	11:20		5.02	19.23		0.070	13.2	23.9	2.20		177
BS-SW-01	31/07/2023	10:20		3.72	15.65		0.044	89.8	17.2	1.71		212
BS-SW-01	26/08/2023	14:50		3.46	15.17		0.041	13.3	10.9	1.09		-
GERLK	29/05/2023	13:10	Top	8.05	20.63		0.163	8.9	104.7	9.43		333
GERLK	29/05/2023	13:25	Bottom - 26 ft	7.28	11.80		-	0.0	-	-		-
GERLK	05/07/2023	10:55		7.67	27.42		0.205	0.0	86.4	6.83		203
GERLK	17/02/2023	10:30		6.22	2.33		0.195	1.70	50.5	6.90		232
JCRK-01	30/05/2023	11:35		7.49	20.20		0.106	16.6	88.1	8.10		197
JCRK-01	20/06/2023	10:30		7.59	23.02		0.108	0.0	103.6	8.88		219
JCRK-01	19/07/2023	8:50		5.89	21.47		0.129	0.0	62.1	5.48		264
JCRK-01	14/08/2023	11:50		6.29	21.05		0.115	0.0	82.5	7.34		-
JCRK-01	21/09/2023	10:10		5.10	15.23		0.085	45.5	93.8	9.41		-
JCRK-01	16/10/2023	9:05		4.66	8.52		0.114	42.2	76.3	8.92		311
JCRK-01	14/11/2023	8:45		7.59	2.72		0.061	4.7	98.4	13.35		199
JCRK-02	23/03/2023	15:40		6.19	0.00		0.060	49.5	60.3	8.79		167
JCRK-02	24/04/2023	12:50		6.09	1.41		0.039	0.0	65.6	9.22		210
JCRK-02	24/05/2023	14:30		4.42	10.63		0.036	14.2	84.0	9.35		289
JCRK-02	07/06/2023	8:20		6.47	15.90		0.057	35.3	53.0	5.24		298
JCRK-02	04/07/2023	11:30		5.44	20.78		0.072	5.9	54.5	4.88		211
JCRK-02	08/08/2023	9:50		4.91	16.44		0.056	14.8	67.7	6.61		-
JCRK-02	11/09/2023	12:20		4.92	13.32		0.054	35.5	61.6	6.44		-
JCRK-02	23/02/2023	15:00		5.90	-0.06		0.054	81.1	50.8	7.43		235
JCRK-02	30/10/2023	10:10		5.70	3.34		0.034	21.3	73.1	9.75		353
JCRK-02	21/11/2023	12:55		5.14	0.76		0.018	9.3	54.3	7.77		298
JCRK-03	22/03/2023	12:10		7.42	0.35		0.289	47.4	102.1	14.3		91
JCRK-03	17/04/2023	10:35		6.52	0.43		0.051	45.3	136.9	19.73		209
JCRK-03	29/05/2023	10:55		7.83	16.56		0.091	42.5	77.7	7.58		347
JCRK-03	13/06/2023	13:45		7.43	15.56		0.215	20.4	62.3	6.20		231
JCRK-03	05/07/2023	8:50		6.44	21.15		0.181	6.3	53.0	4.72		245
JCRK-03	08/08/2023	13:40		6.17	17.47		0.166	0.1	54.3	5.19		-
JCRK-03	26/09/2023	13:10		4.31	12.81		0.090	149.0	77.1	8.16		-
JCRK-03	27/02/2023	12:25		6.07	0.86		0.316	14.9	81.2	1.57		221
JCRK-03	18/10/2023	14:00		4.73	6.48		0.056	41.5	67.2	8.27		282
JCRK-03	30/11/2023	8:50		7.49	3.28		0.052	64.4	93.0	12.43		106
JC-S-01	18/10/2022	14:15	0.3	5.32	6.0	46.5	0.073		44.9	5.58	-1.28	257.1
JC-S-01	22/03/2023	12:50		6.17	0.07		0.253	80.8	69.2	10.06		118
JC-S-01	17/04/2023	13:30		6.67	1.55		0.109	7.8	115.3	16.14		244
JC-S-01	24/05/2023	14:10		3.91	9.82		0.047	0.4	90.5	10.25		293
JC-S-01	07/06/2023	11:35		4.90	12.68		0.069	0.0	85.2	9.04		302
JC-S-01	04/07/2023	11:00		4.21	17.52		0.090	0.0	53.7	5.13		273
JC-S-01	02/08/2023	10:45		4.53	15.00		0.156	0.0	60.3	6.10		-
JC-S-01	11/09/2023	12:00		4.19	12.21		0.126	0.0	0.8	0.09		-
JC-S-01	27/02/2023	16:10		5.93	-0.06		0.192	20.8	17.4	2.57		143
JC-S-01	29/05/2022	10:30	0.2	3.74	10.1	47.6	n/a		50.4	5.65	31.2	183.3
JC-S-01	30/10/2023	9:50		4.24	3.66		0.091	93.2	68.8	9.09		417
JC-S-01	21/11/2023	12:30		4.83	0.10		0.047	0.0	59.6	8.68		302
KC-01	22/03/2023	11:30		7.35	0.91		0.579	53.9	-	-		74
KC-01	17/04/2023	11:30		7.08	0.41		0.108	246.0	105.1	15.18		234
KC-01	16/02/2023	12:55		6.43	0.04		0.602	29.5	96.9	14.12		200
MARLK	22/03/2023	13:35		6.80	0.52		0.155	8.80	113.9	16.36		115
MARLK	18/04/2023	14:35		6.11	0.52		-	13.4	121.0	17.89		233
MARLK	29/05/2023	13:40	Top	7.59	21.87		0.073	3.5	94.5	8.88		232
MARLK	29/05/2023	13:56	Bottom - 17 ft	7.10	12.20		-	0.0	-	-		-
MARLK	13/06/2023	11:45		5.77	13.49		0.028	8.5	72.1	7.5		248

Location ID	Date (dd/mm/yy)	Time (24-hr)	Sample Depth (m)	pH	Water Temperature (deg C)	Conductivity (us/cm)	Conductivity (mS/cm)	Turbidity (NTU)	DO (%)	DO (mg/L)	TDS (mg/L)	ORP (mV)
MARLK	04/07/2023	10:25		5.25	18.46		0.051	19.5	56.7	5.31		210
MARLK	02/08/2023	9:45		5.57	17.05		0.102	17.5	91.9	8.87		-
MARLK	26/09/2023	14:00		4.09	14.37		0.062	17.3	67.0	6.85		-
MARLK	27/02/2023	13:15		5.95	0.11		0.065	14.9	80.8	11.69		243
MARLK	31/10/2023	10:50		4.68	2.48		0.017	6.8	78.5	10.72		361
MARLK	21/11/2023	12:10		5.64	0.52		0.016	0.0	60.4	8.70		259
MATR-01	28/10/2021	11:45	0.5	7.8	9.4	97			87.0	9.59		126.4
MATR-01	08/06/2022	19:30	0.1	6.70	17.3	83.8	n/a		87.8	8.4	54.6	116.1
MATR-01	25/10/2022	14:30	0.2	7.15	6.8	51	0.078		21.0	2.55	2.69	182.3
MATR-01	25/05/2023	11:30		4.48	12.48		0.075	14.1	113.2	12.06		368
MATR-01	21/06/2023	9:10		7.62	17.89		0.110	0.0	89.3	8.47		130
MATR-01	16/07/2023	11:15		7.62	21.70		0.122	-	85.5	7.71		-
MATR-01	26/08/2023	12:35		5.31	19.41		0.124	6.5	120.5	11.08		-
MATR-01	22/09/2023	12:10		5.48	15.25		0.092	16.9	92.7	9.29		-
MATR-01	16/10/2023	12:30		5.21	9.11		0.098	41.3	102.3	11.79		240
MATR-01	01/11/2023	12:50		6.48	5.78		0.092	12.7	107.9	13.51		324
MATR-02	28/10/2021	11:00	0.5	7.7	8.9	96			86.9	9.83		104.6
MATR-02	08/06/2022	0:00	0.1	6.62	17.4	84.1	n/a		89.0	8.49	54.6	126.9
MATR-02	25/10/2022	15:15	0.3	7.28	6.7	50.7	0.078		19.4	2.36	2.68	194.1
MATR-02	23/03/2023	11:00		7.74	0.08		0.119	5.40	99.8	14.50		130
MATR-02	17/04/2023	11:30		7.31	0.67		0.102	125.0	115.9	16.62		231
MATR-02	25/05/2023	11:55		4.46	12.62		0.076	15.9	115.8	12.30		362
MATR-02	16/07/2023	10:30		7.53	21.50		0.122	-	82.9	7.39		-
MATR-02	17/02/2023	11:50		6.39	-0.02		0.108	2.9	91.9	13.43		227
MATR-02	16/10/2023	12:45		5.40	9.08		0.099	40.0	98.0	11.31		258
MATR-02	01/11/2023	13:40		6.53	5.75		0.092	13.8	105.5	13.22		311
MATR-REF	30/05/2023	12:45		7.59	17.70		0.079	10.3	96.1	9.12		225
MATR-REF	20/06/2023	10:10		7.20	21.59		0.108	22.4	100.5	8.85		224
MATR-REF	19/07/2023	9:10		5.98	21.63		0.119	0.0	80.9	7.12		253
MATR-REF	14/08/2023	11:30		6.15	20.65		0.113	0.0	89.5	8.03		-
MATR-REF	21/09/2023	10:30		5.24	15.19		0.093	23.3	89.8	9.01		-
MATR-REF	16/10/2023	9:20		5.00	8.76		0.098	42.1	84.1	9.77		304
MATR-REF	14/11/2023	8:55		7.53	2.65		0.060	4.9	91.6	12.44		198
NDR-DAVLK	03/06/2022	13:30	0.1	7.57	18.2	228.2	n/a		76.5	7.17	148.2	116.5
NDR-GER-LK	11/08/2021	17:30		7.8	23.7	270			108.3	9.17		157.8
NDR-GER-LK	27/10/2021	16:50	0.5	7.7	8.2	193			57.9	6.58		222.8
NDR-GER-LK	03/06/2022	10:20	0.1	7.46	19.3	200.1	n/a		62.7	5.76	130	104.4
NDR-JAC-LK	03/06/2022	11:15	0.1	7.64	19.2	232.1	n/a		113.4	10.35	63.8	101.5
NDR-MAR-LK	11/08/2021	16:45	0.5	7.1	23.7	119			90.8	7.68		106.3
NDR-MAR-LK	27/10/2021	17:20	0.5	7.4	8.2	83			58.2	6.69		205.1
NDR-MAR-LK	30/05/2022	n/a	0.1	4.81	10.4	28.5	n/a		83.5	9.25	18.2	176.2
NDR-P-01	29/05/2022	13:53	0.1	4.68	13.0	39	n/a		36.1	3.65	25.35	158.6
NDR-P-01	31/08/2022	18:15	0.5	5.69	16.2	n/a	0.053		35.8	3.34	n/a	72.2
NDR-P-01	08/08/2021	16:30	0.5	5.8	20.8	57			74.3	6.61		210.3
NDR-P-01	24/10/2021	11:15	0.5	6.0	4.7	31			58.4	7.31		199.7
NDR-P-02A	05/08/2021	10:00	0.5	7.9	22.6	150			97.1	8.37		194.2
NDR-P-02A	19/10/2021	17:45	0.5	8.0	10.7	132			105.5	11.07		257.4
NDR-P-02B	31/05/2022	n/a	0.1	7.45	23.3	221.6	n/a		125.1	10.56	144.3	127.4
NDR-P-02B	31/08/2022	17:00	0.2	8.11	17.54	145	0.170		74.6	6.98	n/a	-14.6
NDR-P-03	02/06/2022	10:35	0.1	6.84	20.6	69.9	n/a		98.0	8.75	45.5	114.6
NDR-P-03	30/08/2022	10:30	0.5	7.45	20.55	70	n/a		87.9	7.85	n/a	7
NDR-P-03	13/10/2022	n/a	0.1	7.19	9.5	n/a	0.780		96.4	11	n/a	101.6
NDR-P-03	05/08/2021	12:45	0.5	7.6	23.1	82			100.8	8.59		155.8
NDR-P-03	20/10/2021	8:40	1	6.8	10.9	61			79.6	8.55		200.9
NDR-P-04	30/05/2022	10:50	0.1	5.88	16.0	120.3	n/a		55.3	5.34	75	143.2

Location ID	Date (dd/mm/yy)	Time (24-hr)	Sample Depth (m)	pH	Water Temperature (deg C)	Conductivity (us/cm)	Conductivity (mS/cm)	Turbidity (NTU)	DO (%)	DO (mg/L)	TDS (mg/L)	ORP (mV)
NDR-P-04	31/08/2022	16:30	0.5	6.92	18.47	129	n/a		57.9	5.42	n/a	35.2
NDR-P-04	05/08/2021	9:00	0.5	5.6	21.3	148			73.0	6.45		212.6
NDR-P-04	19/10/2021	17:30	1	6.8	12.9	129			56.0	5.73		216.6
NDR-P-05	06/06/2022	14:05	0.1	5.65	20.1	48.6	n/a		77.3	7.01	31.85	127.3
NDR-P-06	01/06/2022	11:30	0.1	4.74	22.4	27.1	n/a		72.1	6.21	17.55	158
NDR-P-06	30/08/2022	14:35	0.3	6.42	21.0	n/a	0.049		68.6	5.83	n/a	109.4
NDR-P-06	16/10/2022	12:00	0.1	5.45	6.4	19.2	0.030		58.5	7.21	-0.89	188.5
NDR-P-07	01/06/2022	10:00	0.1	4.46	17.8	27.9	n/a		50.3	4.73	18.2	174.4
NDR-P-07	30/08/2022	13:00	0.3	5.32	19.5	n/a	0.044		75.1	6.57	n/a	159.3
NDR-P-07	15/10/2022	15:00	0.1	5.27	6.5	20.3	0.031		68.0	8.34	-1.34	227.9
NDR-S-01	29/05/2022	13:15	0.1	4.88	14.7	38.9	n/a		60.8	6.15	25.35	149.6
NDR-S-01	23/10/2022	11:45	0.2	5.84	5.5	25.4	0.040		27.1	3.42	-1	166.5
NDR-S-01	08/08/2021	14:45	0.5	4.5	19.8	53			66.4	6.06		278.1
NDR-S-01	23/10/2021	12:15	0.5	6.8	4.5	35			59.7	7.46		187.2
NDR-S-02	07/06/2022	13:35	0.25	5.86	16.0	74.2	n/a		59.2	5.77	48.1	139.6
NDR-S-02	31/08/2022	10:00	0.5	6.68	17.4	n/a	0.126		54.4	5	n/a	157.2
NDR-S-02	16/10/2022	13:30	0.2	6.56	6.5	52.6	0.081		46.6	5.74	0.39	176
NDR-S-02	22/03/2023	14:25		7.02	0.06		0.205	66.8	86.1	12.56		116
NDR-S-02	17/04/2023	14:50		6.50	0.82		0.066	22.3	117.3	16.75		238
NDR-S-02	29/05/2023	15:15		7.25	21.19		0.065	12.9	81.6	7.25		195
NDR-S-02	21/06/2023	11:15		7.33	23.53		0.103	2.6	43.0	3.65		159
NDR-S-02	31/07/2023	8:30		5.42	17.44		0.110	86.7	57.8	5.48		275
NDR-S-02	15/08/2023	10:45		5.72	17.53		0.094	17.8	73.4	7.01		-
NDR-S-02	18/09/2023	11:00		5.90	12.33		0.073	23.2	61.4	6.59		-
NDR-S-02	17/02/2023	14:20		6.80	-0.05		0.107	11.4	12.7	1.88		179
NDR-S-02	11/08/2021	10:20	0.5	6.6	20.7	131			60.7	5.18		90.3
NDR-S-02	18/10/2023	8:45		4.77	6.76		0.082	23.9	67.8	8.28		352
NDR-S-02	22/11/2023	10:00		7.78	0.85		0.068	0.0	59.1	8.44		116
NDR-S-04	31/05/2022	n/a	0.1	5.78	16.1	74	n/a		67.3	6.58	48.1	138.4
NDR-S-04	30/08/2022	12:00	0.5	6.93	12.27	107	0.120		44.5	4.1	n/a	-11
NDR-S-04	06/08/2021	13:15	0.5	6.7	19.7	147			42.8	3.92		165.4
NDR-S-04	21/10/2021	13:45	0.5	6.9	7.0	70			80.9	9.49		191.6
NDR-S-04b	23/03/2023	11:35		7.03	0.62		0.152	55.3	41.2	5.98		147
NDR-S-04b	17/04/2023	13:10		6.65	0.27		0.064	18.9	131.1	19.01		224
NDR-S-04b	25/05/2023	13:30		4.41	12.60		0.061	16.4	91.7	9.74		321
NDR-S-04b	13/06/2023	12:30		7.08	16.66		0.089	36.5	54.6	5.31		257
NDR-S-04b	12/07/2023	14:00		6.37	20.70		0.094	16.0	81.5	7.31		215
NDR-S-04b	15/08/2023	11:30		5.83	15.92		0.094	15.2	81.6	8.07		-
NDR-S-04b	18/09/2023	10:25		5.69	12.28		0.091	52.7	69.5	7.44		-
NDR-S-04b	17/02/2023	12:50		6.40	-0.04		0.108	24.1	9.70	1.45		128
NDR-S-04b	16/10/2023	10:15		4.82	7.73		0.092	36.6	62.6	7.46		304
NDR-S-04b	15/11/2023	14:50		7.90	1.87		0.062	25.9	54.3	7.53		187
NDR-S-05	01/06/2022	19:00	0.1	4.64	21.4	26	n/a		61	5.34	17.55	162.6
NDR-S-05	30/08/2022	14:25	0.1	6.16	19.3	n/a	0.183		40	3.48	n/a	130.4
NDR-S-06	23/03/2023	11:55		6.98	0.07		0.164	199.0	43.7	6.37		145
NDR-S-06	24/05/2023	13:15		4.89	11.85		0.066	9.0	76.9	8.32		311
NDR-S-06	07/06/2023	9:35		6.97	15.84		0.078	79.3	53.9	5.34		254
NDR-S-06	04/07/2023	12:00		6.06	24.29		0.079	42.7	62.1	5.20		207
NDR-S-06	02/08/2023	10:15		5.80	17.69		0.134	58.5	48.3	4.60		-
NDR-S-06	11/09/2023	11:25		6.18	13.24		0.116	35.7	72.9	7.63		-
NDR-S-06	28/02/2023	13:55		7.50	0.00		0.143	9.4	14.9	2.01		102
NDR-S-06	30/10/2023	9:10		4.86	8.84		0.109	113.0	94.8	10.99		373
NDR-S-06	21/11/2023	11:10		5.71	0.09		0.071	0.0	65.3	9.52		263
NDR-TRIB-01	06/06/2022	8:50	0.1	6.95	17	85.25	n/a		65.7	6.35	55.25	130.3
NDR-TRIB-01	18/10/2022	12:15	0.1	6.81	6.1	66.9	0.105		43	5.33	0.6	189.2

Location ID	Date (dd/mm/yy)	Time (24-hr)	Sample Depth (m)	pH	Water Temperature (deg C)	Conductivity (us/cm)	Conductivity (mS/cm)	Turbidity (NTU)	DO (%)	DO (mg/L)	TDS (mg/L)	ORP (mV)
NDR-TRIB-01	31/08/2022	15:30	0.5	6.40	17.2	n/a	0.126		25.8	2.46	n/a	-36.9
NDR-TRIB-01	11/08/2021	15:45	0.5	6.4	21.7	130			26.1	2.30		118.7
NDR-TRIB-01	19/10/2021	13:20	1	6.9	11.0	81			64.7	6.94		199.0
NDR-TRIB-02	07/06/2022	15:05	0.1	4.82	14.2	33	n/a		18.8	1.9	21.45	145.6
NDR-TRIB-02	16/10/2022	16:00	1.0	5.53	6.3	19.2	0.030		58.3	7.2	-1.24	258.6
NDR-TRIB-02	11/08/2021	13:00	0.5	5.5	18.2	35			7.0	0.66		122.3
NDR-TRIB-02	20/10/2021	16:45	1	5.5	7.5	39			50.1	5.81		180.1
PC-01	10/03/2023	10:25		6.99	0.04		0.111	5.6	85.2	12.91		200
PC-01	19/04/2023	12:30		6.30	0.02		0.052	0.0	62.3	9.10		308
PC-01	23/05/2023	13:35		3.67	10.88		0.043	13.7	96.1	10.63		372
PC-01	23/06/2023	13:10		6.42	14.21		0.077	202.0	95.6	9.81		283
PC-01	31/07/2023	12:45		5.45	14.53		0.100	99.6	84.6	8.61		170
PC-01	24/08/2023	10:20		6.50	15.13		0.126	9.0	98.4	9.89		-
PC-01	26/09/2023	9:40		4.53	9.66		0.089	14.7	80.7	9.19		-
PC-01	18/10/2023	10:40		5.12	6.27		0.095	10.6	77.8	9.61		302
PC-01	09/11/2023	14:00		6.30	0.20		0.111	4.4	58.7	8.54		362
PRSLK	29/06/2023	9:00		6.18	19.31		0.093	0.0	64.1	5.91		215
PRSLK	01/09/2023	14:35		4.35	20.14		0.138	11.4	102.7	9.30		-
PRSLK	22/02/2023	10:45		6.88	1.02		0.108	1.2	92.0	13.12		159
PRSLK	16/11/2023	15:13	Top	7.52	2.78		0.091	1.6	49.6	6.71		146
PRSLK	16/11/2023	15:13	Bottom	-	-		-	-	-	-		-
SUTHLK	29/05/2023	12:10	Top	7.94	20.14		0.175	0.0	105.9	9.60		267
SUTHLK	29/05/2023	12:20	Bottom - 17 ft	8.02	15.90		-	0.0	-	-		-
SUTHLK	05/07/2023	10:02		7.40	25.43		0.199	0.0	52.2	4.27		227
SUTHLK	16/02/2023	14:55		7.10	-0.02		0.265	9.2	99.5	14.48		174
SUTHLK	03/10/2023	13:50	Top	5.38	18.61		0.223	1.5	95.6	8.88		240
SUTHLK	03/10/2023	14:05	Bottom	-	-		-	-	-	-		-
SW-BS-01	27/03/2023	11:50		4.41	0.88		0.059	12.2	84.8	12.10		202
SW-BS-01	19/04/2023	14:45		5.21	0.27		0.018	0.0	65.3	9.47		311
UWC-01	24/05/2023	10:10		3.81	11.02		0.018	0.0	61.2	6.74		305
UWC-01	12/07/2023	14:55		5.15	24.87		0.029	18.2	73.5	6.09		268
UWC-01	17/02/2023	12:20		5.43	-0.03		0.056	3.9	39.8	5.93		102
UWC-01	16/10/2023	11:40		3.79	8.16		0.031	86.4	52.6	6.20		317
WBR-P-01	07/08/2021	13:30	0.5	6.2	21.4	52			71.4	6.32		165.1
WBR-P-01	26/10/2021	10:00	0.5	6.1	4.4	27			54.0	6.86		n/a
WBR-P-01	07/06/2022	9:45	0.2	5.79	14.4	61.8	n/a		39.1	3.95	40.3	148.6
WBR-P-02	07/08/2021	11:45	0.5	6.0	19.7	40			59.8	5.47		141.0
WBR-P-02	26/10/2021	12:30	0.5	5.9	5.2	24			33.3	4.12		156.1
WBR-P-02	22/02/2023	13:45										
WBR-P-03	24/10/2022	15:00	0.2	5.33	10	22.3	0.031		20.4	2.3	-0.99	237.5
WBR-P-03	23/03/2023	12:55		6.19	0.05		0.053	23.2	26.5	3.85		163
WBR-P-03	19/04/2023	10:15		5.70	0.00		0.020	0.0	54.3	7.94		298
WBR-P-03	23/05/2023	11:40		3.50	13.58		0.020	0.0	50.7	5.27		392
WBR-P-03	23/06/2023	10:20		5.14	12.52		0.017	11.0	41.7	4.44		326
WBR-P-03	06/07/2023	10:20		5.01	21.89		0.071	15.2	40.0	3.51		280
WBR-P-03	01/08/2023	13:35		7.57	23.40	39.1		-	57.6	4.87		-
WBR-P-03	14/09/2023	9:15		4.84	10.37		0.030	0.0	48.8	5.46		-
WBR-P-03	17/09/2022	16:00	0.3	6.46	12.5	n/a	0.052		88	9.08	n/a	68.3
WBR-P-03	22/02/2023			7.60	0.00		0.039	53.1	96.2	14.09		147
WBR-P-03	17/10/2023	15:15		4.71	7.32		0.032	1.1	60.1	7.24		292
WBR-P-03	09/11/2023	10:40		6.17	0.36		0.033	9.0	43.8	6.33		324
WBR-P-04	23/10/2022	11:15	0.15	4.90	8.2	20.9	0.031		21.2	2.5	0.3	221.9
WBR-P-04	19/04/2023	11:00		5.09	0.04		0.018	0.0	54.9	8.01		319
WBR-P-04	23/05/2023	12:10		3.37	12.03		0.019	0.0	53.3	5.74		379
WBR-P-04	23/06/2023	11:15		3.95	12.54		0.019	6.9	52.3	5.57		347

Location ID	Date (dd/mm/yy)	Time (24-hr)	Sample Depth (m)	pH	Water Temperature (deg C)	Conductivity (us/cm)	Conductivity (mS/cm)	Turbidity (NTU)	DO (%)	DO (mg/L)	TDS (mg/L)	ORP (mV)
WBR-P-04	06/07/2023	10:50		4.21	17.86		0.027	0.0	39.2	3.72		315
WBR-P-04	01/08/2023	14:15		7.12	17.00	30.7		-	56.6	5.42		-
WBR-P-04	26/09/2023	11:30		2.79	10.54		0.036	88.4	35.5	3.95		-
WBR-P-04	17/09/2022	13:30	0.5	5.91	12.7	n/a	0.040		63.1	6.5	n/a	-87.3
WBR-P-04	17/10/2023	15:30		3.76	8.27		0.033	10.2	51.5	6.06		345
WBR-P-04	09/11/2023	11:05		5.22	0.31		0.032	0.7	52.5	7.61		377
WBR-P-05	17/09/2022	10:30	0.5	5.68	12.2	n/a	0.068		34.9	3.46	n/a	35.2
WBR-Ref	19/04/2023	12:45		6.64	0.07		0.040	13.8	53.8	7.85		288
WBR-S-01	10/08/2021	15:30	0.5	7.1	20.9	131			75.5	6.82		148.2
WBR-S-01	25/10/2021	15:45	0.25	7.2	5.4	68			87.0	10.75		211.5
WBR-S-01	06/06/2022	12:28	0.1	5.89	14.2	42.1	n/a		87.4	8.92	27.3	133.1
WBR-S-01	16/09/2022	17:00	0.5	6.85	14.97	45	0.055		84.9	8.56	n/a	74.3
WBR-S-02	10/08/2021	16:20	0.5	7.0	21.3	106			66.3	5.87		145.5
WBR-S-02	25/10/2021	14:00	0.5	6.2	4.9	32			93.4	11.68		197.3
WBR-S-03	10/08/2021	10:00	0.5	6.1	20.6	109			72.5	6.50		162.3
WBR-S-03	24/10/2021	16:40	0.2	6.7	5.3	35			90.4	11.17		195.7
WBR-S-03	06/06/2022	n/a	0.1	5.85	15.7	45.8	n/a		85.8	8.47	29.9	120.7
WBR-S-03	01/09/2022	13:15	0.5	6.70	14.97	48	0.059		82.2	8.29	n/a	-3
WBR-S-04	09/08/2021	14:30	0.5	5.6	20.6	103			83.1	7.46		176.5
WBR-S-04	24/10/2021	14:10	0.5	6.4	5.1	34			89.7	11.13		210.5
WBR-S-04	06/06/2022	15:00	0.1	5.79	15.9	45.05	n/a		85.9	8.45	29.25	125.3
WBR-S-04	01/09/2022	14:30	0.5	6.65	15.42	49	0.060		78.7	7.84	n/a	29.8
WBR-S-04	23/03/2023	13:15		6.73	0.02		0.150	20.3	42.0	6.14		165
WBR-S-04	19/04/2023	9:40		6.12	0.05		0.032	14.5	61.7	9.01		289
WBR-S-04	23/05/2023	11:15		3.54	12.09		0.034	129.0	85.6	9.21		402
WBR-S-04	23/06/2023	10:00		6.32	12.49		0.067	25.2	72.4	7.72		286
WBR-S-04	14/07/2023	15:30		6.52	19.80		0.078	-	88.0	7.7		-
WBR-S-04	01/08/2023	9:45		7.34	15.20	124		-	66.4	6.67		-
WBR-S-04	26/09/2023	11:05		4.39	11.22		0.050	36.0	79.0	8.76		-
WBR-S-04	22/02/2023	12:50		6.83	-0.04		0.100	34.7	108.2	15.85		181
WBR-S-04	17/10/2023	15:00		6.33	7.46		0.039	82.0	77.2	9.26		229
WBR-S-04	09/11/2023	11:00		6.18	0.19		0.052	20.7	57.7	8.40		325
WBR-S-05	17/09/2022	17:00	0.3	5.79	11	n/a	0.051		3.2	0.33	n/a	-212.1
WBR-S-06	23/03/2023	13:55		7.12	0.01		0.183	85.0	53.4	7.77		158
WBR-S-06	22/04/2023	11:50		6.32	0.41		0.034	16.8	62.5	9.52		289
WBR-S-06	23/05/2023	12:40		3.83	11.71		0.036	21.3	92.0	9.98		389
WBR-S-06	23/06/2023	11:55		6.54	15.46		0.089	111.0	75.9	7.58		283
WBR-S-06	15/07/2023	16:00		7.13	20.30		0.086	-	84.7	7.73		-
WBR-S-06	24/08/2023	11:25		5.84	17.76		0.108	52.0	79.9	7.60		-
WBR-S-06	20/09/2023	10:35		5.55	9.13		0.054	42.3	89.7	10.33		-
WBR-S-06	22/02/2023	15:10		7.17	-0.02		0.117	32.3	98.5	14.49		158
WBR-S-06	18/10/2023	12:10		4.74	6.50		0.049	89.3	68.1	8.37		286
WBR-S-06	09/11/2023	10:20		6.79	0.65		0.040	23.8	71.9	10.32		289
WBR-S-07	21/04/2023	9:30		6.25	0.39		0.039	23.9	61.0	8.83		297
WBR-S-07	-	-		6.59	21.80		0.075	-	86.0	7.81		-
WBR-S-07	28/02/2023	11:10		7.24	0.00		0.149	20.2	98.2	15.01		362
WBR-S-Ref	10/03/2023	9:50		6.70	0.05		0.144	23.0	49.7	7.25		228
WBR-S-Ref	23/05/2023	13:50		3.93	11.54		0.036	24.1	87.8	9.77		383
WBR-S-Ref	23/06/2023	12:55		6.47	16.96		0.065	87.3	96.9	9.37		291
WBR-S-Ref	31/07/2023	12:30		5.07	18.71		0.093	28.5	71.4	6.66		264
WBR-S-Ref	24/08/2023	10:10		5.67	17.75		0.111	42.6	83.3	7.92		-
WBR-S-Ref	26/09/2023	10:00		4.48	10.87		0.055	50.8	69.2	7.65		-
WBR-S-Ref	18/10/2023	11:00		5.07	6.01		0.051	23.3	87.2	10.85		278
WBR-S-Ref	09/11/2023	14:15		6.05	0.25		0.068	22.2	75.2	10.91		360

Appendix B.8 Local Water Quality Seasonal Analysis

Table B8.1 Local Water Quality Seasonal Analysis

	Parameter	Units	RDL	Seasonal Mean			
Watercourses				**Winter**	**Spring**	**Summer**	**Fall**
	pH, Field	S.U.	0	6.67	6.75	5.49	5.75
	Temperature, Field	deg C	-5	0.16	10.06	16.70	3.07
	Specific Conductivity, Field	mS/cm	0	0.17	0.06	0.09	0.06
	Dissolved Oxygen, Field	mg/L	0	10.24	9.30	7.03	8.86
	Chloride	mg/L	0.2	7.87	2.11	2.39	2.64
	Chrysotile Asbestos	MFL	0.20	-	-	-	-
	Cyanide	mg/L	0.002	-	-	-	-
	Cyanide (Free)	mg/L	0.001	0.0033	0.0028	0.0023	0.0033
	Cyanide (Weak Acid Dissociable)	mg/L	0.001	0.0023	0.0018	0.0035	0.0029
	Fluoride	mg/L	0.05	-	-	-	-
	Radium-226	Bq/L	0.005	-	-	-	-
	Hardness (as $CaCO_3$)	mg/L	0.1	67.23	29.74	46.87	36.96
	Sulphate	mg/L	0.3	15.58	1.03	1.10	1.27
	Total Alkalinity (as $CaCO_3$)	mg/L	2	58.81	24.39	38.75	27.38
	Total Suspended Solids (TSS)	mg/L	0.67	11.78	8.56	5.98	4.32
	Nitrate (as N)	mg/L	0.02	-	-	-	-
	Nitrite (as N)	mg/L	0.01	-	-	-	-
	Total Phosphorous	mg/L	0.002	0.048	0.022	0.027	0.018
	Dissolved Organic Carbon (DOC)	mg/L	1	28.65	24.00	32.17	39.70
	Ammonia (as N)	mg/L	0.005	0.14	0.03	0.05	0.06
	Dissolved Aluminum (0.45 µm)	µg/L	1	110.04	113.92	120.77	171.82
	Dissolved Aluminum (0.2 µm)	µg/L	1	78.20	80.48	82.06	-
	Total Aluminum	µg/L	1	631.65	361.89	335.54	314.83
	Total Antimony	µg/L	0.1	-	-	-	-
	Total Arsenic	µg/L	0.1	0.72	0.63	0.97	0.71
	Total Beryllium	µg/L	0.02	-	-	-	-
	Total Boron	µg/L	2	-	-	-	-
	Total Cadmium	µg/L	0.005	0.06	0.04	0.03	0.04
	Total Cobalt	µg/L	0.1	0.60	0.25	0.29	0.19
	Total Copper	µg/L	0.2	1.83	2.86	1.72	1.35
	Total Iron	µg/L	10	1241.42	537.43	700.08	636.82
	Total Lead	µg/L	0.05	0.68	0.44	0.39	0.36
	Dissolved Manganese	µg/L	0.1	63.92	33.88	54.74	36.29
	Mercury	µg/L	0.01	-	-	-	-
	Mercury (Trace)	ng/L	0.01	4.38	5.38	3.31	3.94
	Methyl Mercury	ng/L	0.02	-	0.21	0.11	0.12

	Parameter	Units	RDL	Seasonal Mean			
	Total Molybdenum	µg/L	0.05	-	-	-	-
	Total Nickel	µg/L	0.5	1.33	0.80	0.96	0.72
	Total Selenium	µg/L	0.05	0.23	0.15	0.15	0.14
	Total Silver	µg/L	0.01	-	-	-	-
	Total Thallium	µg/L	0.01	-	-	-	-
	Total Tungsten	µg/L	0.1	-	-	-	-
	Total Uranium	µg/L	0.01	0.02	0.03	0.05	0.04
	Total Vanadium	µg/L	0.5	1.25	0.87	1.01	0.71
	Dissolved Zinc	µg/L	1	8.31	5.97	4.76	6.43
	Total Zinc	µg/L	1	12.49	6.87	6.12	7.22
	Total Zirconium	µg/L	0.2	1.42	0.93	1.42	0.88
Waterbodies	pH, Field	S.U.	0	6.67	6.58	5.52	6.11
	Temperature, Field	deg C	-5	0.69	11.34	19.36	4.99
	Specific Conductivity, Field	mS/cm	0	0.16	0.10	0.12	0.16
	Dissolved Oxygen, Field	mg/L	0	13.95	11.11	6.88	8.04
	Chloride	mg/L	0.2	-	-	-	-
	Chrysotile Asbestos	MFL	0.20	-	-	-	-
	Cyanide	mg/L	0.002	-	-	-	-
	Cyanide (Free)	mg/L	0.001	-	-	-	-
	Cyanide (Weak Acid Dissociable)	mg/L	0.001	-	-	-	-
	Fluoride	mg/L	0.05	-	-	-	-
	Radium-226	Bq/L	0.005	-	-	-	-
	Hardness (as $CaCO_3$)	mg/L	0.1	48.30	58.69	84.14	61.69
	Sulphate	mg/L	0.3	1.00	0.86	1.22	0.83
	Total Alkalinity (as $CaCO_3$)	mg/L	2	55.00	64.08	83.94	59.27
	Total Suspended Solids (TSS)	mg/L	0.67	3.10	3.81	1.83	8.77
	Nitrate (as N)	mg/L	0.02	-	-	-	-
	Nitrite (as N)	mg/L	0.01	-	-	-	-
	Total Phosphorous	mg/L	0.002	0.026	0.023	0.017	0.053
	Dissolved Organic Carbon (DOC)	mg/L	1	22.34	17.33	19.42	28.47
	Ammonia (as N)	mg/L	0.005	0.11	0.03	0.02	0.04
	Dissolved Aluminum	µg/L	1	81.50	49.15	35.12	102.94
	Dissolved Aluminum (0.2 µ)	µg/L	1	84.00	62.17	36.25	-
	Total Aluminum	µg/L	1	256.13	111.20	58.18	214.84
	Total Antimony	µg/L	0.1	-	-	-	-
	Total Arsenic	µg/L	0.1	0.18	0.32	0.52	0.55
	Total Beryllium	µg/L	0.02	-	-	-	-
	Total Boron	µg/L	2	-	-	-	-
	Total Cadmium	µg/L	0.005	0.032	0.010	0.014	0.029

	Parameter	Units	RDL	Seasonal Mean			
	Total Cobalt	µg/L	0.1	-	-	-	-
	Total Copper	µg/L	0.2	-	-	-	-
	Total Iron	µg/L	10	633.38	481.42	217.19	612.57
	Total Lead	µg/L	0.05	0.37	0.14	0.14	0.33
	Dissolved Manganese	µg/L	0.1	79.38	32.26	11.56	52.22
	Mercury	µg/L	0.01	-	-	-	-
	Mercury (Trace)	ng/L	0.01	3.26	3.31	1.45	2.72[a]
	Methyl Mercury	ng/L	0.02	-	0.13	0.04	0.05
	Total Molybdenum	µg/L	0.05	-	-	-	-
	Total Nickel	µg/L	0.5	-	-	-	-
	Total Selenium	µg/L	0.05	0.08	0.07	0.09	0.08
	Total Silver	µg/L	0.01	-	-	-	-
	Total Thallium	µg/L	0.01	-	-	-	-
	Total Tungsten	µg/L	0.1	-	-	-	-
	Total Uranium	µg/L	0.01	0.01	0.02	0.05	0.05
	Total Vanadium	µg/L	0.5	-	-	-	-
	Dissolved Zinc	µg/L	1	4.13	4.04	2.24	4.96
	Total Zinc	µg/L	1	5.25	6.32	3.96	5.53
	Total Zirconium	µg/L	0.2	-	-	-	-

Note:
[a] removal of 565 ng/L from statistical calculations for North Driftwood River Watershed as discussed in Section 5.3.1.3.

Appendix B.9 Local Water Quality Watershed Analysis

Table B9.1 Local Water Quality Watershed Analysis

Parameter	Unit	RDL	Jocko Creek Watershed			North Driftwood River Watershed			West Buskegau River Watershed		
			Mean	75th Percentile (25th)	95th Percentile (5th)	Mean	75th Percentile (25th)	95th Percentile (5th)	Mean	75th Percentile (25th)	95th Percentile (5th)
pH, Field	S.U.	0	6.05	7.08 (5.15)	7.62 (4.24)	6.42	7.10 (5.73)	7.91 (4.80)	5.76	6.55 (5.02)	7.31 (3.83)
Temperature, Field	deg C	-5	10.09	17.24	21.62	9.74	17.46	23.72	8.12	14.83	20.19
Specific Conductivity, Field	mS/cm	0	0.11	0.12	0.27	0.11	0.13	0.21	0.06	0.09	0.14
Dissolved Oxygen, Field	mg/L	0	10.35	11.31 (6.61)	16.33 (2.56)	7.47	8.78 (5.40)	14.19 (2.32)	7.71	9.27 (6.02)	13.00 (2.41)
[a]Chloride	mg/L	0.2	6.3	4.6	30.7	2.9	4.2	8.0	0.3	0.4	0.7
Chrysotile Asbestos	MFL	0.20	-	-	-	-	-	-	-	-	-
Cyanide	mg/L	0.002	-	-	-	-	-	-	-	-	-
[a]Cyanide (Free)	mg/L	0.001	0.0026	0.0040	0.0060	0.0022	0.0030	0.0051	0.0027	0.0034	0.0049
[a]Cyanide (Weak Acid Dissociable)	mg/L	0.001	0.0026	0.0030	0.0078	0.0019	0.0021	0.0040	0.0027	0.0040	0.0070
Fluoride	mg/L	0.05	-	-	-	-	-	-	-	-	-
Radium-226	Bq/L	0.005	-	-	-	-	-	-	-	-	-
Hardness (as $CaCO_3$)	mg/L	0.1	47.1	53.3	111.8	62.9	80.8	131.4	36.6	54.2	69.3
Sulphate	mg/L	0.3	6.9	3.7	5.9	0.8	1.0	2.5	0.8	0.9	2.6
Total Alkalinity (as $CaCO_3$)	mg/L	2	38.5	52.0	80.0	60.4	82.0	140.4	29.9	49.5	72.9
Total Suspended Solids (TSS)	mg/L	0.67	6.82	6.40	15.02	5.23	5.70	21.17	5.72	7.65	14.00
Nitrate (as N)	mg/L	0.02	-	-	-	-	-	-	-	-	-
Nitrite (as N)	mg/L	0.01	-	-	-	-	-	-	-	-	-
Total Phosphorous	mg/L	0.002	0.021	0.023	0.050	0.023	0.027	0.044	0.028	0.037	0.052
Dissolved Organic Carbon (DOC)	mg/L	1	24.2	33.1	46.8	26.5	32.2	44.5	36.7	44.6	51.3
Ammonia (as N)	mg/L	0.005	0.050	0.057	0.133	0.038	0.048	0.090	0.060	0.069	0.112
Dissolved Aluminum (0.45 µm)	µg/L	1	95	120	229	80	135	207	172	230	325
Dissolved Aluminum (0.2 µm)	µg/L	1	65	75	155	56	86	107	107	133	176
Total Aluminum	µg/L	1	304	324	681	187	260	469	440	598	1000
Total Antimony	µg/L	0.1	-	-	-	-	-	-	-	-	-
Total Arsenic	µg/L	0.1	0.7	0.8	1.0	0.6	0.9	1.2	0.9	1.1	1.6
Total Beryllium	µg/L	0.02	-	-	-	-	-	-	-	-	-
Total Boron	µg/L	2	-	-	-	-	-	-	-	-	-
Total Cadmium	µg/L	0.005	0.042	0.050	0.102	0.020	0.030	0.044	0.039	0.050	0.060
[a]Total Cobalt	µg/L	0.1	0.2	0.2	0.6	0.3	0.3	0.7	0.3	0.4	0.8
[a]Total Copper	µg/L	0.2	2.3	2.0	5.3	1.2	1.5	2.6	1.7	2.2	2.9
Total Iron	µg/L	10	560	580	1400	503	644	1104	823	1075	1600
Total Lead	µg/L	0.05	0.41	0.50	0.95	0.28	0.33	0.64	0.47	0.59	0.88

Parameter	Unit	RDL	Jocko Creek Watershed			North Driftwood River Watershed			West Buskegau River Watershed		
			Mean	75th Percentile (25th)	95th Percentile (5th)	Mean	75th Percentile (25th)	95th Percentile (5th)	Mean	75th Percentile (25th)	95th Percentile (5th)
Dissolved Manganese	µg/L	0.1	25.8	38.1	70.5	46.4	51.1	140.0	50.8	59.2	111.3
Mercury	µg/L	0.01	-	-	-	-	-	-	-	-	-
Mercury (Trace)	ng/L	0.01	3.86	4.91	6.93	2.47[b]	3.45[b]	6.45[b]	4.77	6.45	8.51
Methyl Mercury	ng/L	0.02	0.12	0.14	0.20	0.10	0.14	0.25	0.14	0.21	0.24
Total Molybdenum	µg/L	0.05	-	-	-	-	-	-	-	-	-
[a]Total Nickel	µg/L	0.5	0.9	1.0	2.0	0.8	0.9	1.6	1.0	1.4	2.0
Total Selenium	µg/L	0.05	0.19	0.17	0.61	0.13	0.15	0.26	0.12	0.15	0.23
Total Silver	µg/L	0.01	-	-	-	-	-	-	-	-	-
Total Thallium	µg/L	0.01	-	-	-	-	-	-	-	-	-
Total Tungsten	µg/L	0.1	-	-	-	-	-	-	-	-	-
Total Uranium	µg/L	0.01	0.04	0.06	0.08	0.03	0.04	0.08	0.04	0.07	0.09
[a]Total Vanadium	µg/L	0.5	0.8	0.9	1.7	0.7	0.8	1.7	1.09	1.60	2.31
Dissolved Zinc	µg/L	1	7	9	14	5	6	11	6	7	10
Total Zinc	µg/L	1	8	10	20	6	7	14	7	8	14
[a]Total Zirconium	µg/L	0.2	1.0	1.0	2.9	0.8	1.1	2.0	1.3	2.0	3.9

Note:
[a] statistical calculation from predominantly watercourse parameter values as waterbodies had greater than 50% non-detect values and were not replaced with numeric values.
[b] removal of 565 ng/L from statistical calculations for North Driftwood River Watershed as discussed in **Section 5.3.1.3**.

Appendix B.10 Laboratory QA/QC – Relative Percent Differences

Sample Location				GERLK			MARLK						NDRP01			NDRP03		
Sample Date				3-Jun-22	3-Jun-22		11-Aug-21	11-Aug-21		4-Jul-23	4-Jul-23		24-Oct-21	24-Oct-21		30-Aug-22	30-Aug-22	
Sample ID				NDR-GERLK	CNC-DUP-02		NDR-MARLK	CNC-DUP-02		MARLk	SWDup		NDR-P-01	CNC-DUP-02		NDRP03	DUP01	
Laboratory				ALS	ALS		ALS	ALS		TESTMARK	TESTMARK		ALS	ALS		ALS	ALS	
Laboratory Work Order				WT2205034	WT2205034		L2626399	L2626399		504663	504663		L2655497	L2655497		WT2213093	WT2213093	
Laboratory Sample ID				WT2205034-001	WT2205034-004		L2626399-5	L2626399-10		1899885	1899889		L2655497-6	L2655497-7		WT2213093-010	WT2213093-006	
Sample Type	Units	CCME	PWQO		Field Duplicate	RPD		Field Duplicate	RPD		Field Duplicate	RPD		Field Duplicate	RPD		Field Duplicate	RPD
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	-	-	-	-	-	-	**5.25**	-	-	-	-	-	-	-	-
Temperature, Field	deg C	n/v	30_{s6}[C]	-	-	-	-	-	-	18.46	-	-	-	-	-	-	-	-
General Chemistry																		
Acidity as CaCO3	mg/L	n/v	n/v	<2.0	<2.0	-	<2.0	<2.0	-	9	12	-	8.7	8.2	6%	<2.0	<2.0	-
Alkalinity, Total	mg/L	n/v	n/v	122	116	5%	63.3	62.8	1%	19	20	5%	20	21.7	8%	37.4	38.3	2%
Ammonia (as N)	mg/L	$_{TBC2}$[B]	n/v	0.0185	0.014	28%	<0.010	<0.010	-	0.063	0.068	8%	0.02	0.023	14%	0.0213	0.0102	70%
Bromide	mg/L	n/v	n/v	-	-	-	<0.10	<0.10	-	-	-	-	<0.10	<0.10	-	-	-	-
Chloride	mg/L	640[A] 120[B]	n/v	0.52	<0.50	-	<0.50	<0.50	-	<0.2	<0.2	-	<0.50	<0.50	-	<0.50	<0.50	-
Chlorophyll a	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysotile Asbestos (>0.5 um)	MFL	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysotile Asbestos (>10 um)	MFL	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide	mg/L	0.0050[B]	n/v	<0.0020	<0.0020	-	<0.0020	<0.0020	-	-	-	-	<0.0020	<0.0020	-	<0.0020	<0.0020	-
Cyanide (Free)	mg/L	0.0050[B]	0.0050[C]	<0.0020	<0.0020	-	<0.0020	<0.0020	-	0.002	<0.001	-	<0.0020	<0.0020	-	<0.0020	<0.0020	-
Cyanide (Strong Acid Dissociable)	mg/L	0.0050[B]	n/v	-	-	-	-	-	-	**0.006**	0.005	18%	-	-	-	-	-	-
Cyanide (Weak Acid Dissociable)	mg/L	0.0050[B]	n/v	<0.0020	<0.0020	-	<0.0020	<0.0020	-	0.003	0.003	0%	<0.0020	<0.0020	-	<0.0020	<0.0020	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	-	-	-	-	-	-	34.8	36.7	5%	-	-	-	-	-	-
Electrical Conductivity, Lab	µS/cm	n/v	n/v	202	203	0%	120	119	1%	38	40	5%	49.9	50.6	1%	75.8	75.1	1%
Fluoride	mg/L	0.12[B]	n/v	0.052	0.044	17%	0.03	0.031	3%	<0.05	<0.05	-	<0.020	<0.020	-	<0.020	<0.020	-
Hardness (as CaCO3)	mg/L	n/v	n/v	105	107	2%	64.7	64.9	0%	26	26.3	1%	34.4	34.5	0%	40.7	39.5	3%
Nitrate (as N)	mg/L	124[A] 3.0[B]	n/v	<0.020	<0.020	-	<0.020	<0.020	-	<0.1	<0.1	-	<0.020	<0.020	-	<0.020	<0.020	-
Nitrite (as N)	mg/L	0.060[B]	n/v	<0.010	<0.010	-	<0.010	<0.010	-	<0.01	<0.01	-	<0.010	<0.010	-	<0.010	<0.010	-
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	8.17	8.15	0%	7.74	7.73	0%	**6.45**	6.58	2%	6.51	6.51	0%	7.56	7.53	0%
Phosphorus, Total	mg/L	n/v	0.030_{s4}[E]	0.0177	0.0127	33%	0.0166	0.0147	12%	0.02	0.023	14%	0.0196	0.0189	4%	0.0039	0.0038	3%
Radium-226	Bq/L	n/v	1[C]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	1.03	0.98	5%	0.33	0.33	0%	<0.5	<0.5	-	<0.30	<0.30	-	<0.30	<0.30	-
Sulfate	mg/L	n/v	n/v	1.03	0.98	-	0.33	0.33	-	<0.5	<0.5	-	<0.30	<0.30	-	<0.30	<0.30	-
BC MECC Sulfate Guideline (s2)				309	309	-	218	218	-	128	128	-	218	218	-	218	218	-
Total Dissolved Solids	mg/L	n/v	n/v	123	113	8%	88	95	8%	115	105	9%	122	118	3%	40	51	24%
Total Suspended Solids	mg/L	$_{SN}$[B]	n/v	3.4	<3.0	-	<3.0	<3.0	-	2	3	-	<3.0	<3.0	-	<3.0	<3.0	-
Polycyclic Aromatic Hydrocarbons																		
Acenaphthene	µg/L	5.8[B]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anthracene	µg/L	0.012[B]	0.0008_a[E]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	µg/L	0.018[B]	0.0004_a[E]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(e)pyrene	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	µg/L	n/v	0.00002_a[E]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	µg/L	n/v	0.0002_a[E]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Biphenyl	µg/L	n/v	0.2_a[E]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysene	µg/L	n/v	0.0001_a[E]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibenzo(a,h)anthracene	µg/L	n/v	0.002_a[E]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorobenzidine, 3,3'-	µg/L	n/v	0.6_a[E]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluoranthene	µg/L	0.04[B]	0.0008_a[E]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluorene	µg/L	3[B]	0.2_a[E]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylnaphthalene (Total)	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylnaphthalene, 1-	µg/L	n/v	2_b[E]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylnaphthalene, 2-	µg/L	n/v	2_b[E]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	µg/L	1.1[B]	7_a[E]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	µg/L	0.4[B]	0.03_a[E]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pyrene	µg/L	0.025[B]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

See notes on last page

Sample Location				GERLK			MARLK						NDRP01			NDRP03		
Sample Date				3-Jun-22	3-Jun-22		11-Aug-21	11-Aug-21		4-Jul-23	4-Jul-23		24-Oct-21	24-Oct-21		30-Aug-22	30-Aug-22	
Sampling Company				GERLK	GERLKY		MARLK	MARLKY		MARLK	MARLKY		NDRP01	NDRP01Y		NDRP03	NDRP03Y	
Laboratory				UNKNOWN	UNKNOWN		CNC	CNC		UNKNOWN	UNKNOWN		CNC	CNC		UNKNOWN	UNKNOWN	
Laboratory Work Order				ALS	ALS		ALS	ALS		TESTMARK	TESTMARK		ALS	ALS		ALS	ALS	
Laboratory Sample ID				WT2205034	WT2205034		L2626399	L2626399		504663	504663		L2655497	L2655497		WT2213093	WT2213093	
Sample Type	Units	CCME	PWQO	WT2205034-001	WT2205034-004 Field Duplicate	RPD	L2626399-5	L2626399-10 Field Duplicate	RPD	1899885	1899889 Field Duplicate	RPD	L2655497-6	L2655497-7 Field Duplicate	RPD	WT2213093-010	WT2213093-006 Field Duplicate	RPD
Metals - Dissolved																		
Aluminum	µg/L	$5/100_{VAR1}$[B]	n/v	**46.3**	**43.6**	6%	**14.4**	**13.9**	4%	**191**	**187**	2%	**205**	**206**	0%	**19.9**	**19**	5%
Aluminum	µg/L	$5/100_{VAR1}$[B]	n/v	46.3	43.6	-	14.4	13.9	-	191	187	-	205	206	-	19.9	19	-
CWQG Aluminum Guideline				100	100	-	100	100	-	5	5	-	5	5	-	100	100	-
Antimony	µg/L	n/v	20^{E}	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	<0.1	<0.1	-	<0.1	<0.1	-
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	0.53	0.51	4%	0.58	0.58	0%	-	-	-	1.12	1.12	0%	0.3	0.29	3%
Barium	µg/L	n/v	n/v	13.5	13.8	2%	5.77	5.76	0%	-	-	-	3.37	3.36	0%	2.32	2.33	0%
Beryllium	µg/L	n/v	$11/1,100_{s3}$[C]	<0.02	<0.02	-	<0.1	<0.1	-	-	-	-	<0.1	<0.1	-	<0.02	<0.02	-
Beryllium	µg/L	n/v	$11/1,100_{s3}$[C]	<0.02	<0.02	-	<0.1	<0.1	-	-	-	-	<0.1	<0.1	-	<0.02	<0.02	-
PWQO Beryllium Guideline				1100	1100	-	11	11	-	11	11	-	11	11	-	11	11	-
Bismuth	µg/L	n/v	n/v	<0.05	<0.05	-	<0.05	<0.05	-	-	-	-	<0.05	<0.05	-	<0.05	<0.05	-
Boron	µg/L	$29,000^{A}$ $1,500^{B}$	200_{a}[E]	<10	<10	-	<10	<10	-	-	-	-	<10	<10	-	<10	<10	-
Cadmium	µg/L	1.0_{STB}[A] 0.09_{LTG}	0.2^{C} $0.1/0.5_{s12}$[B]	0.0068	<0.005	-	<0.005	<0.005	-	-	-	-	0.0109	0.0139	24%	<0.005	<0.005	-
CWQG Cadmium Guideline (STB)				2.21	2.25	-	1.35	1.35	-	0.53	0.54	-	0.71	0.71	-	0.84	0.82	-
CWQG Cadmium Guideline (LTG)				0.17	0.17	-	0.11	0.11	-	0.05	0.05	-	0.07	0.07	-	0.08	0.07	-
PWQO Cadmium Guideline				0.5	0.5	-	0.1	0.1	-	0.1	0.1	-	0.1	0.1	-	0.1	0.1	-
Calcium	µg/L	n/v	n/v	29,300	29,800	2%	19,100	18,500	3%	-	-	-	9,900	9,910	0%	11,100	10,700	4%
Cerium	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cesium	µg/L	n/v	n/v	<0.01	<0.01	-	<0.01	<0.01	-	-	-	-	<0.01	<0.01	-	<0.01	<0.01	-
Chromium	µg/L	n/v	n/v	<0.5	<0.5	-	0.2	0.19	5%	-	-	-	0.61	0.57	7%	<0.5	<0.5	-
Copper	µg/L	2_{TBC1}[B]	5^{C} $1/5_{s13}$[E]	0.58	0.53	9%	0.31	0.3	3%	-	-	-	0.49	0.46	6%	<0.2	<0.2	-
Copper	µg/L	2_{TBC1}[B]	5^{C} $1/5_{s13}$[E]	0.58	0.53	-	0.31	0.3	-	-	-	-	0.49	0.46	-	<0.2	<0.2	-
CCME Copper Guideline				2.5	2.5	-	2	2	-	2	2	-	2	2	-	2	2	-
PWQO Copper Guideline				5	5	-	5	5	-	5	5	-	5	5	-	5	5	-
Europium	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gallium	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lanthanum	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	µg/L	1_{TBC1}[B]	$20/25_{s14}$[C] 1/3	<0.05	<0.05	-	<0.05	<0.05	-	-	-	-	0.137	0.13	5%	<0.05	<0.05	-
Lead	µg/L	1_{TBC1}[B]	$20/25_{s14}$[C] 1/3	<0.05	<0.05	-	<0.05	<0.05	-	-	-	-	0.137	0.13	-	<0.05	<0.05	-
PWQO Lead Guideline (s14)				25	25	-	20	20	-	5	5	-	5	10	-	10	10	-
PWQO Lead Guideline (s15)				5	5	-	3	3	-	1	1	-	3	3	-	3	3	-
Lithium	µg/L	n/v	n/v	<1	1	-	<1	<1	-	-	-	-	<1	<1	-	<1	<1	-
Magnesium	µg/L	n/v	n/v	7,670	7,820	2%	5,210	5,160	1%	-	-	-	3,080	2,940	5%	3,150	3,110	1%
Manganese	µg/L	600_{EQ3}[A] 430_{EQ}	n/v	15.1	14.7	-	6.26	6.16	-	-	-	-	13.9	14	-	0.66	0.41	-
CCME Manganese Guideline (EQ3)				6947.8	7063.8	-	4541.7	4554	-	2039.8	2060.5	-	2608.2	2614.9	-	3023.2	2944.8	-
CCME Manganese Guideline (EQ4)				370	370	-	390	390	-	310	330	-	330	330	-	350	350	-
Mercury	µg/L	0.026^{B}	0.2^{C}	-	-	-	0.000125	0.00012	4%	-	-	-	0.000133	0.000137	3%	-	-	-
Mercury	µg/L	0.026^{B}	0.2^{C}	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury (by CV)	µg/L	n/v	n/v	-	-	-	-	-	-	<0.01	<0.01	-	-	-	-	-	-	-
Methyl Mercury	ng/L	4.0^{B}	n/v	-	-	-	-	-	-	0.16	0.17	6%	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	0.099	0.104	5%	0.052	0.052	0%	-	-	-	<0.05	<0.05	-	<0.05	<0.05	-
Nickel	µg/L	25_{TBC1}[B]	25^{C}	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	<0.5	<0.5	-	<0.5	<0.5	-
Nickel	µg/L	25_{TBC1}[B]	25^{C}	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	<0.5	<0.5	-	<0.5	<0.5	-
CCME Nickel Guideline				99.2	100.6	-	68.6	68.8	-	25	25	-	25	25	-	25	25	-
Niobium	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phosphorus	µg/L	n/v	30_{s4}[E]	***<50***	***<50***	-	<30	<30	-	-	-	-	<30	<30	-	***<50***	***<50***	-
Potassium	µg/L	n/v	n/v	835	835	0%	428	430	0%	-	-	-	103	101	2%	308	299	3%
Rhodium	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rubidium	µg/L	n/v	n/v	1.23	1.22	1%	0.95	0.99	4%	-	-	-	0.53	0.54	2%	0.56	0.55	2%
Scandium	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	µg/L	1^{B}	100^{C}	0.075	0.091	19%	<0.05	0.064	-	-	-	-	0.201	0.157	25%	0.063	0.06	5%
Silicon	µg/L	n/v	n/v	1,890	1,890	0%	779	792	2%	-	-	-	1,640	1,620	1%	282	311	10%
Silver	µg/L	0.25^{B}	0.1^{C}	<0.01	<0.01	-	<0.01	<0.01	-	-	-	-	<0.01	<0.01	-	<0.01	<0.01	-
Sodium	µg/L	n/v	n/v	2,510	2,540	1%	1,330	1,320	1%	-	-	-	709	692	2%	526	492	7%

Sample Location				GERLK			MARLK						NDRP01			NDRP03		
Sample Date				3-Jun-22	3-Jun-22		11-Aug-21	11-Aug-21		4-Jul-23	4-Jul-23		24-Oct-21	24-Oct-21		30-Aug-22	30-Aug-22	
Sample ID				NDR-GERLK	CNC-DUP-02		NDR-MARLK	CNC-DUP-02		MARLk	SWDup		NDR-P-01	CNC-DUP-02		NDRP03	DUP01	
Sampling Company				UNKNOWN	UNKNOWN		CNC	CNC		UNKNOWN	UNKNOWN		CNC	CNC		UNKNOWN	UNKNOWN	
Laboratory				ALS	ALS		ALS	ALS		TESTMARK	TESTMARK		ALS	ALS		ALS	ALS	
Laboratory Work Order				WT2205034	WT2205034		L2626399	L2626399		504663	504663		L2655497	L2655497		WT2213093	WT2213093	
Laboratory Sample ID				WT2205034-001	WT2205034-004		L2626399-5	L2626399-10		1899885	1899889		L2655497-6	L2655497-7		WT2213093-010	WT2213093-006	
Sample Type	Units	CCME	PWQO		Field Duplicate	RPD		Field Duplicate	RPD		Field Duplicate	RPD		Field Duplicate	RPD		Field Duplicate	RPD
Sulfur	µg/L	n/v	n/v	530	<500	-	510	<500	-	-	-	-	<500	<500	-	<500	<500	-
Tellurium	µg/L	n/v	n/v	<0.2	<0.2	-	<0.2	<0.2	-	-	-	-	<0.2	<0.2	-	<0.2	<0.2	-
Thallium	µg/L	0.8[B]	0.3_b[E]	<0.01	<0.01	-	<0.01	<0.01	-	-	-	-	<0.01	<0.01	-	<0.01	<0.01	-
Thorium	µg/L	n/v	n/v	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	<0.1	<0.1	-	<0.1	<0.1	-
Tin	µg/L	n/v	n/v	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	<0.1	<0.1	-	<0.1	<0.1	-
Tungsten	µg/L	n/v	30_a[E]	<0.1	<0.1	-	<0.1	<0.1	-	-	-	-	<0.1	<0.1	-	<0.1	<0.1	-
Uranium	µg/L	33[A] 15[B]	5_a[E]	0.032	0.031	3%	0.024	0.025	4%	-	-	-	0.011	0.011	0%	<0.01	<0.01	-
Vanadium	µg/L	n/v	6[E]	<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	<0.5	<0.5	-	<0.5	<0.5	-
Yttrium	µg/L	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	µg/L	37_{EQ1}[A] 7.0_{EQ2}[B]	30[C] 20[E]	1.8	1.6	-	<1	<1	-	-	-	-	7.7	7.8	-	1.7	<1	-
CCME Zinc Guideline (EQ1)				68.9	70	-	46	46.2	-	21.5	21.7	-	27.2	27.3	-	31.3	30.5	-
CCME Zinc Guideline (EQ2)				36	37.3	-	32.3	32.7	-	47.8	44.4	-	56.7	56.9	-	28.3	28.1	-
Zirconium	µg/L	n/v	4_a[E]	<0.3	<0.3	-	<0.2	<0.2	-	-	-	-	0.22	0.22	-	<0.3	<0.3	-

See notes on last page

Metals - Total

Aluminum	µg/L	$5/100_{VAR1}$[B]	n/v	**59.2**	**55.8**	6%	**24.3**	**23.7**	3%	**308**	**319**	4%	**201**	**198**	2%	**26.5**	**25.8**	3%
Aluminum	µg/L	$5/100_{VAR1}$[B]	n/v	59.2	55.8	-	24.3	23.7	-	308	319	-	201	198	-	26.5	25.8	-
Antimony	µg/L	n/v	20[E]	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-
Arsenic	µg/L	5[B]	100[C] 5[E]	0.52	0.5	4%	0.6	0.61	2%	1	0.9	11%	1.18	1.12	5%	0.3	0.29	3%
Barium	µg/L	n/v	n/v	14.7	14.5	1%	5.69	6.31	10%	5	5.1	2%	3.31	3.24	2%	2.41	2.34	3%
Beryllium	µg/L	n/v	$11/1,100_{s3}$[C]	<0.02	<0.02	-	<0.1	<0.1	-	0.02	<0.02	-	<0.1	<0.1	-	<0.02	<0.02	-
Beryllium	µg/L	n/v	$11/1,100_{s3}$[C]	<0.02	<0.02	-	<0.1	<0.1	-	0.02	<0.02	-	<0.1	<0.1	-	<0.02	<0.02	-
PWQO Beryllium Guideline				1100	1100	-	11	11	-	11	11	-	11	11	-	11	11	-
Bismuth	µg/L	n/v	n/v	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-
Cadmium	µg/L	1.0_{STB}[A] 0.09_{LTG}	0.2[C] $0.1/0.5_{s12}$[	0.0103	<0.005	-	<0.005	<0.005	-	0.08	0.08	0%	0.0183	0.016	13%	<0.005	<0.005	-
Cadmium	µg/L	1.0_{STB}[A] 0.09_{LTG}	0.2[C] $0.1/0.5_{s12}$[	0.0103	<0.005	-	<0.005	<0.005	-	0.08	0.08	-	0.0183	0.016	-	<0.005	<0.005	-
CWQG Cadmium Guideline (STB)				2.21	2.25	-	1.35	1.35	-	0.53	0.54	-	0.71	0.71	-	0.84	0.82	-
CWQG Cadmium Guideline (LTG)				0.17	0.17	-	0.11	0.11	-	0.05	0.05	-	0.07	0.07	-	0.08	0.07	-
PWQO Cadmium Guideline				0.5	0.5	-	0.1	0.1	-	0.1	0.1	-	0.1	0.1	-	0.1	0.1	-
Calcium	µg/L	n/v	n/v	31,200	30,200	3%	18,400	18,600	1%	7,430	7,520	1%	9,160	9,320	2%	10,900	10,600	3%
Cesium	µg/L	n/v	n/v	<0.01	<0.01	-	<0.01	<0.01	-	0.01	0.02	67%	<0.01	<0.01	-	<0.01	<0.01	-
Chromium	µg/L	n/v	n/v	<0.5	<0.5	-	<0.5	<0.5	-	1.2	1.2	0%	0.61	0.63	3%	<0.5	<0.5	-
Cobalt	µg/L	n/v	0.9[E]	<0.1	<0.1	-	<0.1	<0.1	-	0.4	0.4	0%	0.14	0.12	15%	<0.1	<0.1	-
Copper	µg/L	2_{TBC1}[B]	5[C] $1/5_{s13}$[E]	1.44	0.75	-	<0.5	<0.5	-	3.8	3.8	-	0.7	0.6	-	<0.5	<0.5	-
CCME Copper Guideline				2.5	2.5	-	2	2	-	2	2	-	2	2	-	2	2	-
PWQO Copper Guideline				5	5	-	5	5	-	5	5	-	5	5	-	5	5	-
Europium	µg/L	n/v	n/v	-	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-
Iron	µg/L	300[B]	300[C]	226	212	6%	132	132	0%	**700**	**600**	15%	**631**	**629**	0%	41	41	0%
Lanthanum	µg/L	n/v	n/v	-	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-
Lead	µg/L	1_{TBC1}[B]	$20/25_{s14}$[C] 1/3	0.055	<0.05	-	<0.05	<0.05	-	0.61	0.64	5%	0.16	0.175	9%	<0.05	<0.05	-
Lead	µg/L	1_{TBC1}[B]	$20/25_{s14}$[C] 1/3	0.055	<0.05	-	<0.05	<0.05	-	0.61	0.64	-	0.16	0.175	-	<0.05	<0.05	-
CCME Lead Guideline				3.4	3.5	-	1.8	1.8	-	1	1	-	1	1	-	1	1	-
PWQO Lead Guideline (s14)				25	25	-	20	20	-	5	5	-	5	10	-	10	10	-
PWQO Lead Guideline (s15)				5	5	-	3	3	-	1	1	-	3	3	-	3	3	-
Lithium	µg/L	n/v	n/v	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1	-
Magnesium	µg/L	n/v	n/v	7,850	7,690	2%	4,540	4,510	1%	1,920	1,920	0%	2,790	2,740	2%	3,110	2,990	4%
Manganese	µg/L	600_{EQ3}[A] 430_{EQ}	n/v	36.5	32.6	11%	23.4	23.4	0%	96.3	104	8%	16	16	0%	13.9	13.6	2%
Manganese	µg/L	600_{EQ3}[A] 430_{EQ}	n/v	36.5	32.6	-	23.4	23.4	-	96.3	104	-	16	16	-	13.9	13.6	-
CCME Manganese Guideline (EQ3)				6947.8	7063.8	-	4541.7	4554	-	2039.8	2060.5	-	2608.2	2614.9	-	3023.2	2944.8	-
CCME Manganese Guideline (EQ4)				370	370	-	390	390	-	310	330	-	330	330	-	350	350	-
Mercury	µg/L	0.026[B]	0.2[C]	-	-		-	-		-	-	-	-	-		-	-	
Mercury	ng/L	26[B]	200[C]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Mercury (Trace)	ng/L	n/v	n/v	2.04	1.67	20%	1.13	1.64	37%	6.91	7.5	8%	0.76	0.78	3%	0.82	0.76	8%
Sample Location				**GERLK**			**MARLK**						**NDRP01**			**NDRP03**		
Sample Date				**3-Jun-22**	**3-Jun-22**		**11-Aug-21**	**11-Aug-21**		**4-Jul-23**	**4-Jul-23**		**24-Oct-21**	**24-Oct-21**		**30-Aug-22**	**30-Aug-22**	
Sample ID				**GERLK NDR-GERLK**	**GERLKY CNC-DUP-02**		**MARLK NDR-MARLK**	**MARLKY CNC-DUP-02**		**MARLk**	**MARLKY SWDup**		**NDRP01 NDR-P-01**	**NDRP01Y CNC-DUP-02**		**NDRP03 NDRP03**	**NDRP03Y DUP01**	
Sampling Company				**UNKNOWN**	**UNKNOWN**		**CNC**	**CNC**		**UNKNOWN**	**UNKNOWN**		**CNC**	**CNC**		**UNKNOWN**	**UNKNOWN**	
Laboratory				**ALS**	**ALS**		**ALS**	**ALS**		**TESTMARK**	**TESTMARK**		**ALS**	**ALS**		**ALS**	**ALS**	
Laboratory Work Order				**WT2205034**	**WT2205034**		**L2626399**	**L2626399**		**504663**	**504663**		**L2655497**	**L2655497**		**WT2213093**	**WT2213093**	
Sample Type	**Units**	**CCME**	**PWQO**		**Field Duplicate**	**RPD**		**Field Duplicate**	**RPD**		**Field Duplicate**	**RPD**		**Field Duplicate**	**RPD**		**Field Duplicate**	**RPD**
Methyl Mercury	µg/L	0.004[B]	n/v	0.000275	0.000163	51%	-	-	-	-	-	-	-	-	-	0.000022	0.000023	4%
Molybdenum	µg/L	73[B]	40[E]	0.121	0.113	7%	0.053	0.058	9%	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-
Nickel	µg/L	25_{TBC1}[B]	25[C]	<0.5	<0.5	-	<0.5	<0.5	-	1.1	1	10%	0.56	<0.5	-	<0.5	<0.5	-
Nickel	µg/L	25_{TBC1}[B]	25[C]	<0.5	<0.5	-	<0.5	<0.5	-	1.1	1	10%	0.56	<0.5	-	<0.5	<0.5	-
CCME Nickel Guideline				99.2	100.6	-	68.6	68.8	-	25	25	-	25	25	-	25	25	-
Niobium	µg/L	n/v	n/v	-	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-
Phosphorus	µg/L	n/v	30_{s4}[E]	**139**	***<50***	-	***<50***	***<50***	-	-	-	-	***<50***	***<50***	-	***<50***	***<50***	-
Potassium	µg/L	n/v	n/v	1,040	847	20%	421	435	3%	280	290	4%	89	93	4%	301	292	3%
Rhodium	µg/L	n/v	n/v	-	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-
Rubidium	µg/L	n/v	n/v	1.39	1.3	7%	0.93	0.99	6%	1.2	1.3	8%	0.55	0.5	10%	0.56	0.54	4%
Scandium	µg/L	n/v	n/v	-	-	-	-	-	-	1	1	0%	-	-	-	-	-	-
Selenium	µg/L	1[B]	100[C]	0.086	0.072	18%	0.069	0.08	15%	0.39	0.08	132%	0.147	0.161	9%	0.06	0.051	16%
Silicon	µg/L	n/v	n/v	1,870	1,880	1%	940	830	12%	1,560	1,530	2%	1,580	1,570	1%	340	320	6%
Silver	µg/L	0.25[B]	0.1[C]	<0.01	<0.01	-	<0.05	<0.05	-	<0.01	<0.01	-	<0.05	<0.05	-	<0.01	<0.01	-
Sodium	µg/L	n/v	n/v	2,760	2,560	8%	1,300	1,280	2%	400	410	2%	655	653	0%	475	470	1%
Strontium	µg/L	n/v	n/v	55.8	56.5	1%	31.1	31.6	2%	13.6	14	3%	15.2	14.7	3%	17.3	19.2	10%
Sulfur	µg/L	n/v	n/v	570	<500	-	530	<500	-	1,400	1,300	7%	<500	<500	-	<500	<500	-
Tellurium	µg/L	n/v	n/v	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	-
Thallium	µg/L	0.8[B]	0.3_{b}[E]	<0.01	<0.01	-	<0.01	<0.01	-	0.02	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	-
Thorium	µg/L	n/v	n/v	<0.1	<0.1	-	<0.1	<0.1	-	0.1	0.1	0%	<0.1	<0.1	-	<0.1	<0.1	-
Tin	µg/L	n/v	n/v	<0.1	<0.1	-	<0.1	<0.1	-	0.2	0.4	67%	<0.1	<0.1	-	0.16	<0.1	-
Titanium	µg/L	n/v	n/v	1.35	1.28	5%	0.79	0.69	14%	13.8	12.8	8%	2.96	2.94	1%	<0.3	<0.3	-
Tungsten	µg/L	n/v	30_{a}[E]	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-
Uranium	µg/L	33[A] 15[B]	5_{a}[E]	0.033	0.032	3%	0.026	0.026	0%	0.07	0.07	0%	0.012	0.012	0%	0.01	0.01	0%
Vanadium	µg/L	n/v	6[E]	<0.5	<0.5	-	<0.5	<0.5	-	1.1	1.1	0%	<0.5	<0.5	-	<0.5	<0.5	-
Yttrium	µg/L	n/v	n/v	-	-	-	-	-	-	<1	<1	-	-	-	-	-	-	-
Zinc	µg/L	37_{EQ1}[A] 7.0_{EQ2}[B]	30[C] 20[E]	**14.4**	**7.3**	65%	<3	<3	-	**8**	**11**	32%	**7.7**	**7.5**	3%	<3	<3	-
Zinc	µg/L	37_{EQ1}[A] 7.0_{EQ2}[B]	30[C] 20[E]	14.4	7.3	-	<3	<3	-	8	11	-	7.7	7.5	-	<3	<3	-
CCME Zinc Guideline (EQ1)				68.9	70	-	46	46.2	-	21.5	21.7	-	27.2	27.3	-	31.3	30.5	-
CCME Zinc Guideline (EQ2)				36	37.3	-	32.3	32.7	-	47.8	44.4	-	56.7	56.9	-	28.3	28.1	-
Zirconium	µg/L	n/v	4_{a}[E]	<0.2	<0.2	-	<0.2	<0.2	-	1.3	1.5	-	<0.2	<0.2	-	<0.2	<0.2	-

See notes on last page

Sample Location					JCRK-02			JCRK-03			KC-01					
Sample Date					7-Jun-23	7-Jun-23		8-Aug-23	8-Aug-23		16-Feb-23	16-Feb-23		17-Apr-23	17-Apr-23	
Sample ID					JCRK-02	SWDup		JCRK-03	SWDup		KC-01	Dup1		KC-01	Dup1	
Laboratory					TESTMARK	TESTMARK		TESTMARK	TESTMARK		TESTMARK	TESTMARK		TESTMARK	TESTMARK	
Laboratory Work Order					502041	502041		508852	508852		491080	491080		496175	496175	
Laboratory Sample ID				BC MECC	1890729	1890731		1914997	1914998		1852149	1852151		1869713	1869716	
Sample Type	Units	CCME	PWQO			Field Duplicate	RPD		Field Duplicate	RPD		Field Duplicate	RPD		Field Duplicate	RPD
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	6.97	-	-	**6.17**	-	-	**6.43**	-	-	7.08	-	-
Temperature, Field	deg C	n/v	30_{s6}[C]	n/v	15.9	-	-	17.47	-	-	0	-	-	0.41	-	-
General Chemistry																
Acidity as CaCO3	mg/L	n/v	n/v	n/v	7	7	0%	8	7	13%	15	18	18%	15	<5	-
Alkalinity, Total	mg/L	n/v	n/v	n/v	20	21	5%	84	88	5%	48	51	6%	41	35	16%
Ammonia (as N)	mg/L	$_{TBC2}$[B]	n/v	n/v	0.051	0.05	2%	0.054	0.056	4%	0.131	0.127	3%	0.059	0.058	2%
Bromide	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640[A] 120[B]	n/v	n/v	0.3	<0.2	-	4.2	4.5	7%	30	29.7	1%	4.1	4.1	0%
Chrysotile Asbestos (>0.5 um)	MFL	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Chrysotile Asbestos (>10 um)	MFL	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide	mg/L	0.0050[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide (Free)	mg/L	0.0050[B]	0.0050[C]	n/v	0.002	<0.001	-	0.001	0.001	0%	0.001	<0.001	-	0.004	**0.006**	40%
Cyanide (Strong Acid Dissociable)	mg/L	0.0050[B]	n/v	n/v	0.003	<0.002	-	0.002	<0.002	-	<0.002	<0.002	-	0.004	**0.006**	-
Cyanide (Weak Acid Dissociable)	mg/L	0.0050[B]	n/v	n/v	0.002	<0.001	-	**0.008**	**0.007**	13%	<0.001	<0.001	-	0.002	0.002	0%
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	31.2	31.1	0%	23.3	24.4	5%	18.5	18.6	1%	17.8	18.1	2%
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	41	42	2%	180	180	0%	575	533	8%	97	98	1%
Fluoride	mg/L	0.12[B]	n/v	n/v	<0.05	0.07	-	<0.05	<0.05	-	**0.16**	**0.15**	6%	<0.05	<0.05	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	29.2	29.2	0%	89.9	88.8	1%	189	186	2%	52.9	54.1	2%
Nitrate (as N)	mg/L	124[A] 3.0[B]	n/v	n/v	<0.1	<0.1	-	<0.1	<0.1	-	0.6	0.7	15%	<0.1	0.2	-
Nitrite (as N)	mg/L	0.060[B]	n/v	n/v	<0.01	<0.01	-	0.03	0.03	0%	<0.01	<0.01	-	<0.01	<0.01	-
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	6.68	6.76	1%	7.45	7.57	2%	7.29	6.96	5%	7.35	7.25	1%
Phosphorus, Total	mg/L	n/v	0.030_{s4}[E]	n/v	0.025	0.027	8%	0.028	**0.034**	19%	**0.049**	**0.031**	45%	**0.096**	**0.088**	9%
Radium-226	Bq/L	n/v	1[C]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	128-429[F] $_{s2}$	<0.5	<0.5	-	0.9	1.1	20%	201	199	1%	6.9	6.9	0%
Sulfate	mg/L	n/v	n/v	128-429[F] $_{s2}$	<0.5	<0.5	-	0.9	1.1	-	201	199	-	6.9	6.9	-
BC MECC Sulfate Guideline (s2)					128	128	-	309	309	-	429	429	-	218	218	-
Total Dissolved Solids	mg/L	n/v	n/v	n/v	85	100	16%	150	130	14%	435	440	1%	115	105	9%
Total Suspended Solids	mg/L	$_{SN}$[B]	n/v	n/v	8.67	8	8%	9	11.7	26%	7.67	8	4%	80	75.5	6%

Sample Location					JCRK-02			JCRK-03			KC-01					
Sample Date					7-Jun-23	7-Jun-23		8-Aug-23	8-Aug-23		16-Feb-23	16-Feb-23		17-Apr-23	17-Apr-23	
Sample ID					JCRK-02	SWDup		JCRK-03	SWDup		KC-01	Dup1		KC-01	Dup1	
Sampling Company					UNKNOWN	UNKNOWN		UNKNOWN	UNKNOWN		UNKNOWN	UNKNOWN		UNKNOWN	UNKNOWN	
Laboratory					TESTMARK	TESTMARK		TESTMARK	TESTMARK		TESTMARK	TESTMARK		TESTMARK	TESTMARK	
Laboratory Work Order					502041	502041		508852	508852		491080	491080		496175	496175	
Laboratory Sample ID					1890729	1890731		1914997	1914998		1852149	1852151		1869713	1869716	
Sample Type	Units	CCME	PWQO	BC MECC		Field Duplicate	RPD		Field Duplicate	RPD		Field Duplicate	RPD		Field Duplicate	RPD
Polycyclic Aromatic Hydrocarbons																
Acenaphthene	µg/L	5.8[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Anthracene	µg/L	0.012[B]	0.0008$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	µg/L	0.018[B]	0.0004$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(e)pyrene	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	µg/L	n/v	0.00002$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	µg/L	n/v	0.0002$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Biphenyl	µg/L	n/v	0.2$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Chrysene	µg/L	n/v	0.0001$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Dibenzo(a,h)anthracene	µg/L	n/v	0.002$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorobenzidine, 3,3'-	µg/L	n/v	0.6$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Fluoranthene	µg/L	0.04[B]	0.0008$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Fluorene	µg/L	[illegible]	[illegible]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Methylnaphthalene, 1-	µg/L	n/v	2$_b$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Methylnaphthalene, 2-	µg/L	n/v	2$_b$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	µg/L	1.1[B]	7$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	µg/L	0.4[B]	0.03$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Pyrene	µg/L	0.025[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-

See notes on last page

Metals - Dissolved

Aluminum	µg/L	5/100$_{VAR1}$[B]	n/v	n/v	**262**	**248**	5%	**98**	**95**	3%	**120**	**70**	53%	**82**	**84**	2%
Aluminum	µg/L	5/100$_{VAR1}$[B]	n/v	n/v	262	248	-	98	95	-	120	70	-	82	84	-
CWQG Aluminum Guideline				n/v	100	100	-	100	100	-	100	100	-	100	100	-
Antimony	µg/L	n/v	20[E]	n/v	0.1	<0.1	-	<0.1	<0.1	-	<0.5	<0.5	-	<0.5	<0.5	-
Arsenic	µg/L	5[B]	100[C] 5[E]	n/v	1.1	1.1	0%	1	1	0%	<1	<1	-	<1	<1	-
Barium	µg/L	n/v	n/v	n/v	4	5	22%	9.4	20.6	75%	12	12	0%	5	15	100%
Beryllium	µg/L	n/v	11/1,100$_{s3}$[C]	n/v	0.02	0.02	0%	<0.02	<0.02	-	<0.5	<0.5	-	<0.5	<0.5	-
Beryllium	µg/L	n/v	11/1,100$_{s3}$[C]	n/v	0.02	0.02	0%	<0.02	<0.02	-	<0.5	<0.5	-	<0.5	<0.5	-
PWQO Beryllium Guideline				n/v	11	11	-	1100	1100	-	1100	1100	-	11	11	-
Bismuth	µg/L	n/v	n/v	n/v	<0.05	<0.05	-	<0.05	<0.05	-	<1	<1	-	<1	<1	-
Boron	µg/L	29,000[A] 1,500[B]	200$_a$[E]	n/v	5	5	0%	2	3	40%	24	25	4%	3	3	0%
Cadmium	µg/L	1.0$_{STB}$[A] 0.09$_{LTG}$[B]	0.2[C] 0.1/0.5$_{s12}$[E]	n/v	0.06	0.07	15%	0.03	0.03	0%	**0.2**	**0.2**	0%	***<0.1***	***<0.1***	-
CWQG Cadmium Guideline (STB)				n/v	0.6	0.6	-	1.88	1.86	-	4.01	3.94	-	1.1	1.12	-
CWQG Cadmium Guideline (LTG)				n/v	0.06	0.06	-	0.15	0.14	-	0.27	0.27	-	0.09	0.1	-
PWQO Cadmium Guideline				n/v	0.1	0.1	-	0.1	0.1	-	0.5	0.5	-	0.1	0.1	-
Calcium	µg/L	n/v	n/v	n/v	8,000	8,370	5%	26,600	26,000	2%	57,000	42,100	30%	12,400	12,600	2%
Cerium	µg/L	n/v	n/v	n/v	<1	<1	-	<1	<1	-	<1	<1	-	1	1	0%
Cesium	µg/L	n/v	n/v	n/v	<0.01	<0.01	-	<0.01	<0.01	-	<1	<1	-	<1	<1	-
Chromium	µg/L	n/v	n/v	n/v	1	1.1	10%	2.2	2.1	5%	2	2	0%	<1	<1	-
Copper	µg/L	2$_{TBC1}$[B]	5[C] 1/5$_{s13}$[E]	n/v	**2.4**	**2.1**	13%	**1.3**	**1.9**	38%	**3**	**3**	0%	**2**	**3**	40%
Copper	µg/L	2$_{TBC1}$[B]	5[C] 1/5$_{s13}$[E]	n/v	2.4	2.1	-	1.3	1.9	-	3	3	-	2	3	-
CCME Copper Guideline				n/v	2	2	-	2.2	2.1	-	4	4	-	2	2	-
PWQO Copper Guideline				n/v	5	5	-	5	5	-	5	5	-	5	5	-
Europium	µg/L	n/v	n/v	n/v	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1	-
Gallium	µg/L	n/v	n/v	n/v	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1	-
Lanthanum	µg/L	n/v	n/v	n/v	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1	-
Lead	µg/L	1$_{TBC1}$[B]	0/20/25$_{s14}$[C] 1/3/5	n/v	0.33	0.32	3%	0.13	0.14	7%	0.2	0.1	67%	0.1	0.2	67%
Lead	µg/L	1$_{TBC1}$[B]	0/20/25$_{s14}$[C] 1/3/5	n/v	0.33	0.32	-	0.13	0.14	-	0.2	0.1	-	0.1	0.2	-
PWQO Lead Guideline (s14)				n/v	5	10	-	25	25	-	20	20	-	20	10	-
PWQO Lead Guideline (s15)				n/v	1	1	-	5	5	-	5	5	-	3	3	-

Lithium	µg/L	n/v	n/v	n/v	1	1	0%	1	<1	-	9	10	11%	<5	<5	-
Sample Location					**JCRK-02**			**JCRK-03**			**KC-01**					
Sample Date					**7-Jun-23**	**7-Jun-23**		**8-Aug-23**	**8-Aug-23**		**16-Feb-23**	**16-Feb-23**		**17-Apr-23**	**17-Apr-23**	
Sample ID					**JCRK-02**	**JCRK-02Y**		**JCRK-03**	**JCRK-03Y**		**KC-01**	**KC-01Y**		**KC-01**	**KC-01Y**	
Sampling Company					**UNKNOWN**	**SWDup**		**UNKNOWN**	**SWDup**		**UNKNOWN**	**Dup1**		**UNKNOWN**	**Dup1**	
Laboratory					**TESTMARK**	**UNKNOWN**		**TESTMARK**	**UNKNOWN**		**TESTMARK**	**UNKNOWN**		**TESTMARK**	**UNKNOWN**	
Laboratory Work Order					**502041**	**TESTMARK**		**508852**	**TESTMARK**		**491080**	**TESTMARK**		**496175**	**TESTMARK**	
Laboratory Sample ID					**1890729**	**502041**		**1914997**	**508852**		**1852149**	**491080**		**1869713**	**496175**	
Sample Type	**Units**	**CCME**	**PWQO**	**BC MECC**		**1890731 Field Duplicate**	**RPD**		**1914998 Field Duplicate**	**RPD**		**1852151 Field Duplicate**	**RPD**		**1869716 Field Duplicate**	**RPD**
Manganese	µg/L	$,600_{EQ3}$[A] 430_{EQ}	n/v	n/v	67.5	68.8	2%	35.1	35.5	1%	50	50	0%	51	51	0%
Manganese	µg/L	$,600_{EQ3}$[A] 430_{EQ}	n/v	n/v	67.5	68.8	2%	35.1	35.5	1%	50	50	0%	51	51	0%
CCME Manganese Guideline (EQ3)				n/v	2258.6	2258.6	-	6062.4	5997.2	-	11640.6	11478.2	-	3805.7	3881.4	-
CCME Manganese Guideline (EQ4)				n/v	330	350	-	560	490	-	730	840	-	490	490	-
Mercury	µg/L	0.026[B]	0.2^{C}	n/v	***<0.1***	***<0.1***	-	***0.1/< 0.01***	***0.1/< 0.01***	-	***<0.1***	***<0.1***	-	***<0.1***	***<0.1***	-
Mercury	µg/L	0.026[B]	0.2^{C}	n/v	<0.01	<0.01	-	-	-	-	-	-	-	-	-	-
Methyl Mercury	ng/L	4.0^{B}	n/v	n/v	0.21	0.2	5%	0.17	0.2	16%	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	2	0.23	159%	<0.05	<0.05	-	<1	<1	-	<1	<1	-
Nickel	µg/L	25_{TBC1}[B]	25^{C}	n/v	1	0.9	11%	1.1	1.3	17%	1	1	0%	<1	<1	-
Nickel	µg/L	25_{TBC1}[B]	25^{C}	n/v	1	0.9	11%	1.1	1.3	17%	1	1	0%	<1	<1	-
CCME Nickel Guideline				n/v	25	25	-	88.1	87.3	-	150	150	-	25	25	-
Niobium	µg/L	n/v	n/v	n/v	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1	-
Phosphorus	µg/L	n/v	30_{s4}[E]	n/v	***<50***	***<50***	-	***<50***	***<50***	-	***<50***	***<50***	-	***<50***	***<50***	-
Rhodium	µg/L	n/v	n/v	n/v	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1	-
Rubidium	µg/L	n/v	n/v	n/v	1.1	1	10%	1.2	1.1	9%	4	4	0%	1	1	0%
Scandium	µg/L	n/v	n/v	n/v	<1	<1	-	2	2	-	<1	<1	-	<1	<1	-
Selenium	µg/L	1^{B}	100^{C}	n/v	<0.05	<0.05	-	<0.05	<0.05	-	**2.6**	**2.5**	4%	<0.2	<0.2	-
Silicon	µg/L	n/v	n/v	n/v	910	900	1%	3,700	3,630	2%	1,600	1,600	0%	1,000	1,000	0%
Silver	µg/L	0.25[B]	0.1[C]	n/v	0.01	0.01	0%	0.01	0.01	0%	[illegible]	0.1	[illegible]	<0.1	<0.1	
Sodium	µg/L	n/v	n/v	n/v	840	810	4%	4,490	4,510	0%	20,800	21,400	3%	3,230	3,140	3%
Sulfur	µg/L	n/v	n/v	n/v	<500	1,000	-	2,100	2,300	9%	51,900	53,700	3%	1,200	1,200	0%
Tellurium	µg/L	n/v	n/v	n/v	<0.2	<0.2	-	<0.2	<0.2	-	<1	<1	-	<1	<1	-
Thallium	µg/L	0.8^{B}	0.3_{b}[E]	n/v	0.09	<0.01	-	<0.01	<0.01	-	<0.1	<0.1	-	<0.1	<0.1	-
Thorium	µg/L	n/v	n/v	n/v	0.2	0.2	0%	<0.1	<0.1	-	<1	<1	-	<1	<1	
Tin	µg/L	n/v	n/v	n/v	<0.1	<0.1	-	0.2	0.5	86%	<1	<1	-	<1	<1	-
Tungsten	µg/L	n/v	30_{a}[E]	n/v	<0.1	<0.1	-	<0.1	<0.1	-	<1	<1	-	<1	<1	-
Uranium	µg/L	33^{A} 15^{B}	5_{a}[E]	n/v	0.05	0.05	0%	0.08	0.07	13%	<1	<1	-	<1	<1	-
Vanadium	µg/L	n/v	6^{E}	n/v	1.1	1.1	0%	1.1	1.1	0%	1	<1	-	<1	<1	-
Yttrium	µg/L	n/v	n/v	n/v	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1	-
Zinc	µg/L	37_{EQ1}[A] 7.0_{EQ2}[B]	30^{C} 20^{E}	n/v	7	7	-	3	4	-	28	27	-	12	13	-
CCME Zinc Guideline (EQ1)				n/v	23.7	23.7	-	60.5	59.9	-	112.4	110.9	-	38.9	39.7	-
CCME Zinc Guideline (EQ2)				n/v	42.3	39.6	-	58.4	53.3	-	122.6	158.3	-	34.4	38.4	-
Zirconium	µg/L	n/v	4_{a}[E]	n/v	1.6	1.6	0%	1.9	1.9	0%	<1	<1	-	1	1	0%

See notes on last page

Sample Location					JCRK-02			JCRK-03			KC-01					
Sample Date					7-Jun-23	7-Jun-23		8-Aug-23	8-Aug-23		16-Feb-23	16-Feb-23		17-Apr-23	17-Apr-23	
Sample ID					JCRK-02	JCRK-02Y		JCRK-03	JCRK-03Y		KC-01	KC-01Y		KC-01	KC-01Y	
Laboratory					TESTMARK	SWDup		TESTMARK	SWDup		TESTMARK	Dup1		TESTMARK	Dup1	
Laboratory Work Order					502041	TESTMARK		508852	TESTMARK		491080	TESTMARK		496175	TESTMARK	
Laboratory Sample ID					1890729	502041		508852	508852		1852149	491080		1869713	496175	
Sample Type	Units	CCME	PWQO	BC MECC		1890731 Field Duplicate	RPD	1914997	1914998 Field Duplicate	RPD		1852151 Field Duplicate	RPD		1869716 Field Duplicate	RPD
Metals - Total																
Aluminum	µg/L	$5/100_{VAR1}$ [B]	n/v	n/v	410	598	-	567	515	-	319	268	-	3,210	2,790	-
CWQG Aluminum Guideline				n/v	100	100	-	100	100	-	100	100	-	100	100	-
Antimony	µg/L	n/v	20^{E}	n/v	0.2	<0.1	-	<0.1	<0.1	-	<0.5	<0.5	-	<0.5	<0.5	-
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	1	1.1	10%	1	1	0%	<1	<1	-	<1	<1	-
Barium	µg/L	n/v	n/v	n/v	6.3	7.3	15%	14.8	13	13%	14	13	7%	22	21	5%
Beryllium	µg/L	n/v	$11/1{,}100_{s3}$ [C]	n/v	0.02	0.03	40%	0.02	<0.02	-	<0.5	<0.5	-	<0.5	<0.5	-
PWQO Beryllium Guideline				n/v	11	11	0%	1100	1100	0%	1100	1100	0%	11	11	0%
Bismuth	µg/L	n/v	n/v	n/v	0.07	<0.05	-	<0.05	<0.05	-	<1	<1	-	<1	<1	-
Boron	µg/L	$29{,}000^{A}$ $1{,}500^{B}$	200_{a} [E]	n/v	5	4	22%	2	2	0%	25	24	4%	3	3	0%
Cadmium	µg/L	1.0_{STB} [A] 0.09_{LTG} [	0.2^{C} $0.1/0.5_{s12}$ [E]	n/v	0.08	0.07	-	0.03	0.04	-	0.23	0.23	-	0.28	0.28	-
CWQG Cadmium Guideline (STB)				n/v	0.6	0.6	-	1.88	1.86	-	4.01	3.94	-	1.1	1.12	-
CWQG Cadmium Guideline (LTG)				n/v	0.06	0.06	-	0.15	0.14	-	0.27	0.27	-	0.09	0.1	-
PWQO Cadmium Guideline				n/v	0.1	0.1	-	0.1	0.1	-	0.5	0.5	-	0.1	0.1	-
Cerium	µg/L	n/v	n/v	n/v	1	1	0%	1	1	0%	<1	<1	-	6	5	18%
Cesium	µg/L	n/v	n/v	n/v	0.03	0.04	29%	0.05	0.04	22%	<1	<1	-	<1	<1	-
Chromium	µg/L	n/v	n/v	n/v	1.2	1.4	15%	1.9	1.8	5%	2	1	67%	6	6	0%
Cobalt	µg/L	n/v	0.9^{E}	n/v	0.5	0.5	0%	0.3	0.2	40%	0.5	0.5	0%	**1.6**	**1.5**	6%
Copper	µg/L	2_{TBC1} [B]	5^{C} $1/5_{s13}$ [E]	n/v	**5.1**	**4.1**	22%	**1.8**	**1.8**	0%	**4**	**5**	22%	**6**	**6**	0%
Copper	µg/L	2_{TBC1} [B]	5^{C} $1/5_{s13}$ [E]	n/v	5.1	4.1	-	1.8	1.8	-	4	5	-	6	6	-
CCME Copper Guideline				n/v	2	2	-	2.2	2.1	-	4	4	-	2	2	-
PWQO Copper Guideline				n/v	5	5	-	5	5	-	5	5	-	5	5	-
Europium	µg/L	n/v	n/v	n/v	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1	-
Gallium	µg/L	n/v	n/v	n/v	<1	<1	-	<1	<1	-	<1	<1	-	2	2	0%
Iron	µg/L	300^{B}	300^{C}	n/v	**700**	**800**	13%	**1,100**	**1,000**	10%	**1,100**	**740**	39%	**3,330**	**2,910**	13%
Lanthanum	µg/L	n/v	n/v	n/v	<1	<1	-	<1	<1	-	<1	<1	-	3	3	0%
Lead	µg/L	1_{TBC1} [B]	$0/20/25_{s14}$ [C] 1/3/5	n/v	0.52	0.57	9%	0.35	0.41	16%	0.4	0.4	0%	**1.5**	**1.5**	0%
Lead	µg/L	1_{TBC1} [B]	$0/20/25_{s14}$ [C] 1/3/5	n/v	0.52	0.57	-	0.35	0.41	-	0.4	0.4	-	1.5	1.5	-
CCME Lead Guideline				n/v	1	1	-	2.8	2.7	-	7	7	-	1	1	-
PWQO Lead Guideline (s14)				n/v	5	10	-	25	25	-	20	20	-	20	10	-
PWQO Lead Guideline (s15)				n/v	1	1	-	5	5	-	5	5	-	3	3	-
Lithium	µg/L	n/v	n/v	n/v	1	2	67%	1	1	0%	10	10	0%	<5	<5	-
Magnesium	µg/L	n/v	n/v	n/v	2,040	2,060	1%	6,660	6,600	1%	9,450	9,490	0%	4,200	4,190	0%
Manganese	µg/L	$,600_{EQ3}$ [A] 430_{EQ}	n/v	n/v	74.5	75.1	1%	58.9	55.5	6%	58	55	5%	111	111	0%
Manganese	µg/L	$,600_{EQ3}$ [A] 430_{EQ}	n/v	n/v	74.5	75.1	-	58.9	55.5	-	58	55	-	111	111	-
CCME Manganese Guideline (EQ3)				n/v	2258.6	2258.6	-	6062.4	5997.2	-	11640.6	11478.2	-	3805.7	3881.4	-
CCME Manganese Guideline (EQ4)				n/v	330	350	-	560	490	-	730	840	-	490	490	-
Mercury	ng/L	26^{B}	200^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Mercury (Trace)	ng/L	n/v	n/v	n/v	4.09	3.58	13%	3.24	3.03	7%	2.94	1.68	55%	7.57	7.4	2%
Methyl Mercury	µg/L	0.004^{B}	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	0.86	0.13	147%	<0.05	<0.05	-	<1	<1	-	<1	<1	-
Nickel	µg/L	25_{TBC1} [B]	25^{C}	n/v	0.6	1.1	59%	1.6	1.5	6%	2	1	67%	4	4	0%
Nickel	µg/L	25_{TBC1} [B]	25^{C}	n/v	0.6	1.1	-	1.6	1.5	-	2	1	-	4	4	-
CCME Nickel Guideline				n/v	25	25	-	88.1	87.3	-	150	150	-	25	25	-
Niobium	µg/L	n/v	n/v	n/v	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1	-
Phosphorus	µg/L	n/v	30_{s4} [E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Potassium	µg/L	n/v	n/v	n/v	380	410	8%	830	800	4%	2,230	2,260	1%	1,160	1,160	0%
Rhodium	µg/L	n/v	n/v	n/v	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1	-
Rubidium	µg/L	n/v	n/v	n/v	1.4	1.7	19%	1.9	1.8	5%	4	4	0%	6	6	0%
Scandium	µg/L	n/v	n/v	n/v	<1	<1	-	2	2	0%	<1	<1	-	3	3	0%
Selenium	µg/L	1^{B}	100^{C}	n/v	<0.05	<0.05	-	<0.05	<0.05	-	**2.1**	**2.3**	-	<0.2	<0.2	-

Silicon	µg/L	n/v	n/v	n/v	1,190	1,560	27%	4,890	4,770	2%	1,800	1,800	0%	5,700	5,300	7%
Sample Location					**JCRK-02**			**JCRK-03**			**KC-01**					
Sample Date					**7-Jun-23**	**7-Jun-23**		**8-Aug-23**	**8-Aug-23**		**16-Feb-23**	**16-Feb-23**		**17-Apr-23**	**17-Apr-23**	
Sample ID					**JCRK-02**	**JCRK-02Y**		**JCRK-03**	**JCRK-03Y**		**KC-01**	**KC-01Y**		**KC-01**	**KC-01Y**	
Laboratory					**SWDup**	**SWDup**		**SWDup**	**SWDup**		**Dup1**	**Dup1**		**Dup1**	**Dup1**	
Laboratory Work Order					**TESTMARK**	**TESTMARK**		**TESTMARK**	**TESTMARK**		**TESTMARK**	**TESTMARK**		**TESTMARK**	**TESTMARK**	
Laboratory Sample ID					**502041**	**502041**		**508852**	**508852**		**491080**	**491080**		**496175**	**496175**	
Sample Type	**Units**	**CCME**	**PWQO**	**BC MECC**	**1890729**	**1890731**		**1914997**	**1914998**		**1852149**	**1852151**		**1869713**	**1869716**	
						Field Duplicate	**RPD**		**Field Duplicate**	**RPD**		**Field Duplicate**	**RPD**		**Field Duplicate**	**RPD**
Metals - Total																
Silver	µg/L	0.25[B]	0.1[C]	n/v	<0.01	<0.01	-	0.01	0.01	0%	<0.1	<0.1	-	<0.1	<0.1	-
Sodium	µg/L	n/v	n/v	n/v	940	840	11%	4,520	4,580	1%	21,100	21,200	0%	3,400	3,440	1%
Strontium	µg/L	n/v	n/v	n/v	15.5	15.2	2%	46.8	45.9	2%	211	213	1%	25	26	4%
Sulfur	µg/L	n/v	n/v	n/v	<500	<500	-	2,200	2,300	4%	52,500	52,400	0%	890	970	9%
Tellurium	µg/L	n/v	n/v	n/v	<0.2	<0.2	-	<0.2	<0.2	-	<1	<1	-	<1	<1	-
Thallium	µg/L	0.8[B]	0.3_b[E]	n/v	0.06	0.01	143%	<0.01	<0.01	-	<0.1	<0.1	-	<0.1	<0.1	-
Thorium	µg/L	n/v	n/v	n/v	0.1	0.1	0%	0.2	0.2	0%	<1	<1	-	<1	<1	-
Tin	µg/L	n/v	n/v	n/v	<0.1	<0.1	-	0.5	0.4	22%	<1	<1	-	<1	<1	-
Titanium	µg/L	n/v	n/v	n/v	13.2	20.5	43%	24.1	22.2	8%	12	9	29%	123	113	8%
Tungsten	µg/L	n/v	30_a[E]	n/v	<0.1	<0.1	-	<0.1	<0.1	-	<1	<1	-	<1	<1	-
Uranium	µg/L	33[A] 15[B]	5_a[E]	n/v	0.05	0.05	0%	0.08	0.08	0%	<1	<1	-	<1	<1	-
Vanadium	µg/L	n/v	6[E]	n/v	1.4	1.6	13%	1.5	1.4	7%	1	1	0%	5	5	0%
Yttrium	µg/L	n/v	n/v	n/v	<1	<1	-	<1	<1	-	<1	<1	-	1	1	0%
Zinc	µg/L	37_{EQ1}[A] 7.0_{EQ2}[B]	30[C] 20[E]	n/v	8	8	0%	7	7	0%	30	31	3%	36	38	5%
Zinc	µg/L	37_{EQ1}[A] 7.0_{EQ2}[B]	30[C] 20[E]	n/v	8	8	-	7	7	0%	30	31	-	36	38	-
CCME Zinc Guideline (EQ1)				n/v	23.7	23.7	-	60.5	59.9	-	112.4	110.9	-	38.9	39.7	-
CCME Zinc Guideline (EQ2)				n/v	42.3	39.6	-	58.4	53.3	-	122.6	158.3	-	34.4	38.4	-
Zirconium	µg/L	n/v	4_a[E]	n/v	1.6	1.8	12%	2.8	2.7	4%	<1	<1	-	8	8	0%

See notes on last page

Sample Location					MATR-02						NDRS02					
Sample Date					28-Oct-21	28-Oct-21		25-Oct-22	25-Oct-22		17-Oct-22	17-Oct-22		22-Mar-23	22-Mar-23	
Sample ID					MATR-02	DUP-01		MATR-02	CNC-DUP-02		NDR-S-02	CNC-DUP-01		NDR-S-02	SW-Dup	
Laboratory					ALS	ALS		ALS	ALS		ALS	ALS		TESTMARK	TESTMARK	
Laboratory Work Order					L2657407	L2657407		WT2219907	WT2219907		WT2219907	WT2219907		493768	493768	
Laboratory Sample ID					L2657407-2	L2657407-3		WT2219907-00	WT2219907-009		WT2219907-01	WT2219907-003		1861620	1861621	
Sample Type	Units	CCME	PWQO	BC MECC		Field Duplicate	RPD		Field Duplicate	RPD		Field Duplicate	RPD		Field Duplicate	RPD
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	-	-	-	-	-	-	-	-	-	7.02	-	-
Temperature, Field	deg C	n/v	30_{s6}[C]	n/v	-	-	-	-	-	-	-	-	-	0.06	-	-
General Chemistry																
Acidity as CaCO3	mg/L	n/v	n/v	n/v	3.5	-	-	<2.0	<2.0	-	<2.0	<2.0	0%	15	9	50%
Alkalinity, Total	mg/L	n/v	n/v	n/v	63.6	-	-	36.5	33.9	7%	35.5	34.9	5%	82	85	4%
Ammonia (as N)	mg/L	$_{TBC2}$[B]	n/v	n/v	0.019	0.018	5%	0.014	0.0161	14%	0.0415	0.0391	2%	0.072	0.073	1%
Bromide	mg/L	n/v	n/v	n/v	<0.10	-	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640[A] 120[B]	n/v	n/v	3.67	-	-	1.76	1.73	2%	2.98	3.09	-	1.4	1.5	7%
Chrysotile Asbestos (>0.5 um)	MFL	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Chrysotile Asbestos (>10 um)	MFL	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide	mg/L	0.0050[B]	n/v	n/v	<0.0020	-	-	<0.0020	<0.0020	-	<0.0020	0.0022	-	-	-	-
Cyanide (Free)	mg/L	0.0050[B]	0.0050[C]	n/v	<0.0020	-	-	<0.0020	<0.0020	-	<0.0020	<0.0020	-	0.005	0.005	0%
Cyanide (Strong Acid Dissociable)	mg/L	0.0050[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	0.002	0.003	40%
Cyanide (Weak Acid Dissociable)	mg/L	0.0050[B]	n/v	n/v	<0.0020	-	-	<0.0020	<0.0020	-	<0.0020	<0.0020	-	0.003	0.003	0%
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	0%	25.8	25.9	0%
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	131	-	-	82.8	81.5	2%	86	83.6	2%	155	160	3%
Fluoride	mg/L	0.12[B]	n/v	n/v	0.035	-	-	0.024	0.026	8%	<0.020	0.021	-	<0.05	<0.05	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	73.1	-	-	40.9	44.5	8%	51	49.5	0%	73.7	71	4%
Nitrate (as N)	mg/L	124[A] 3.0[B]	n/v	n/v	0.1	-	-	0.032	0.037	14%	0.021	0.024	-	0.1	0.1	0%
Nitrite (as N)	mg/L	0.060[B]	n/v	n/v	<0.010	-	-	<0.010	<0.010	-	<0.010	<0.010	-	<0.01	<0.01	-
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	8.01	-	-	7.68	6.65	14%	7.38	7.5	1%	7.14	7.33	3%
Phosphorus, Total	mg/L	n/v	0.030_{s4}[E]	n/v	0.018	0.018	0%	0.0047	0.0119	87%	0.0129	0.0133	8%	**0.043**	**0.043**	0%
Radium-226	Bq/L	n/v	1[C]	n/v	0.0021	0.0022	5%	-	-	-	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}_{s2}$	4.96	-	-	2.27	2.12	7%	<0.30	<0.30	-	1	1	-
Sulfate	mg/L	n/v	n/v	$128\text{-}429^{F}_{s2}$	4.96	-	-	2.27	2.12	-	<0.30	<0.30	-	1	1	-
BC MECC Sulfate Guideline (s2)					218	218	-	218	218	-	218	218	-	218	218	-
Total Dissolved Solids	mg/L	n/v	n/v	n/v	86	-	-	90	85	6%	137	114	16%	140	150	7%
Total Suspended Solids	mg/L	$_{SN}$[B]	n/v	n/v	4.1	-	-	5	5.7	13%	3.4	5.2	8%	22.7	18.5	20%

Sample Location					MATR-02						NDRS02					
Sample Date					28-Oct-21	28-Oct-21		25-Oct-22	25-Oct-22		17-Oct-22	17-Oct-22		22-Mar-23	22-Mar-23	
Sample ID					MATR-02	DUP-01		MATR-02	CNC-DUP-02		NDR-S-02	CNC-DUP-01		NDR-S-02	SW-Dup	
Sampling Company					CNC	CNC		UNKNOWN	UNKNOWN		UNKNOWN	UNKNOWN		UNKNOWN	UNKNOWN	
Laboratory					ALS	ALS		ALS	ALS		ALS	ALS		TESTMARK	TESTMARK	
Laboratory Work Order					L2657407	L2657407		WT2219907	WT2219907		WT2219907	WT2219907		493768	493768	
Laboratory Sample ID					L2657407-2	L2657407-3		WT2219907-00	WT2219907-009		WT2219907-01	WT2219907-003		1861620	1861621	
Sample Type	Units	CCME	PWQO	BC MECC		Field Duplicate	RPD		Field Duplicate	RPD		Field Duplicate	RPD		Field Duplicate	RPD
Polycyclic Aromatic Hydrocarbons								-								
Acenaphthene	µg/L	5.8[B]	n/v	n/v		-	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Anthracene	µg/L	0.012[B]	0.0008$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	µg/L	0.018[B]	0.0004$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(e)pyrene	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	µg/L	n/v	0.00002$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	µg/L	n/v	0.0002$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Biphenyl	µg/L	n/v	0.2$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Chrysene	µg/L	n/v	0.0001$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Dibenzo(a,h)anthracene	µg/L	n/v	0.002$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorobenzidine, 3,3'-	µg/L	n/v	0.6$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Fluoranthene	µg/L	0.04[B]	0.0008$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Fluorene	µg/L	[illegible]	[illegible]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Methylnaphthalene, 1-	µg/L	n/v	2$_b$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Methylnaphthalene, 2-	µg/L	n/v	2$_b$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	µg/L	1.1[B]	7$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	µg/L	0.4[B]	0.03$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Pyrene	µg/L	0.025[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-

See notes on last page

Metals - Dissolved

Aluminum	µg/L	5/100$_{VAR1}$[B]	n/v	n/v	**65.5**	**66.6**	2%	**106**	**180**	52%	**171**	**173**	5%	**45**	**45**	0%
Aluminum	µg/L	5/100$_{VAR1}$[B]	n/v	n/v	65.5	66.6	-	106	180	-	171	173	-	45	45	-
CWQG Aluminum Guideline				n/v	100	100	-	100	100	-	100	100	-	100	100	-
Antimony	µg/L	n/v	20[E]	n/v	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.5	<0.5	-
Arsenic	µg/L	5[B]	100[C] 5[E]	n/v	0.78	0.76	3%	0.51	0.54	6%	0.91	0.91	0%	<1	<1	-
Barium	µg/L	n/v	n/v	n/v	7.25	7.31	1%	5.1	6.33	22%	6.4	6.62	22%	7	7	0%
Beryllium	µg/L	n/v	11/1,100$_{s3}$[C]	n/v	<0.1	<0.1	-	<0.02	<0.02	-	<0.02	<0.02	0%	<0.5	<0.5	-
Beryllium	µg/L	n/v	11/1,100$_{s3}$[C]	n/v	<0.1	<0.1	-	<0.02	<0.02	-	<0.02	<0.02	0%	<0.5	<0.5	-
PWQO Beryllium Guideline				n/v	11	11	-	11	11	-	11	11	-	11	11	-
Bismuth	µg/L	n/v	n/v	n/v	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-	<1	<1	-
Boron	µg/L	29,000[A] 1,500	200$_a$[E]	n/v	15	15	0%	<10	<10	-	<10	<10	0%	<2	2	-
Cadmium	µg/L	.0$_{STB}$[A] 0.09$_{LTG}$	0.2[C] 0.1/0.5$_{s12}$[E]	n/v	0.0105	0.0108	3%	0.0122	0.0146	18%	0.016	0.0158	15%	***<0.1***	***<0.1***	-
CWQG Cadmium Guideline (STB)				n/v	1.53	0.93	-	0.85	0.92	-	1.06	1.03	-	1.54	1.48	-
CWQG Cadmium Guideline (LTG)				n/v	0.12	0.08	-	0.08	0.08	-	0.09	0.09	-	0.12	0.12	-
PWQO Cadmium Guideline				n/v	0.1	0.1	-	0.1	0.1	-	0.1	0.1	-	0.1	0.1	-
Calcium	µg/L	n/v	n/v	n/v	19,600	19,900	2%	11,400	12,500	9%	14,300	13,600	5%	19,200	19,500	2%
Cerium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	<1	-
Cesium	µg/L	n/v	n/v	n/v	<0.01	<0.01	-	<0.01	0.013	-	<0.01	<0.01	-	<1	<1	-
Chromium	µg/L	n/v	n/v	n/v	0.35	0.41	16%	0.57	0.65	13%	0.58	0.58	10%	1	<1	-
Copper	µg/L	2$_{TBC1}$[B]	5[C] 1/5$_{s13}$[E]	n/v	**1.16**	**1.19**	3%	**1.02**	**1.16**	13%	0.78	0.78	13%	<1	<1	-
Copper	µg/L	2$_{TBC1}$[B]	5[C] 1/5$_{s13}$[E]	n/v	1.16	1.19	-	1.02	1.16	-	0.78	0.78	-	<1	<1	-
CCME Copper Guideline				n/v	2	2	-	2	2	-	2	2	-	2	2	-
PWQO Copper Guideline				n/v	5	5	-	5	5	-	5	5	-	5	5	-
Europium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	<1	-
Gallium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	<1	-
Lanthanum	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	<1	-
Lead	µg/L	1$_{TBC1}$[B]	/20/25$_{s14}$[C] 1/3/	n/v	0.058	0.061	5%	0.068	0.148	74%	0.152	0.152	3%	<0.1	<0.1	-
Lead	µg/L	1$_{TBC1}$[B]	/20/25$_{s14}$[C] 1/3/	n/v	0.058	0.061	-	0.068	0.148	-	0.152	0.152	-	<0.1	<0.1	-
PWQO Lead Guideline (s14)				n/v	20	10	-	10	10	-	10	10	-	25	25	-
PWQO Lead Guideline (s15)				n/v	3	3	-	3	3	-	3	3	-	3	3	-

Lithium	µg/L	n/v	n/v	n/v	<1	<1	-	<1	<1	-	<1	<1	0%	<5	<5	-
Sample Location					**MATR-02**						**NDRS02**					
Sample Date					**28-Oct-21**	**28-Oct-21**		**25-Oct-22**	**25-Oct-22**		**17-Oct-22**	**17-Oct-22**		**22-Mar-23**	**22-Mar-23**	
Sample ID					**MATR-02**	**MATR-02Y**		**MATR-02**	**MATR-02Y**		**NDRS02**	**NDRS02Y**		**NDRS02**	**NDRS02Y**	
Sampling Company					**CNC**	**DUP-01**		**UNKNOWN**	**CNC-DUP-02**		**UNKNOWN**	**CNC-DUP-01**		**UNKNOWN**	**SW-Dup**	
Laboratory					**ALS**	**CNC**		**ALS**	**UNKNOWN**		**ALS**	**UNKNOWN**		**TESTMARK**	**UNKNOWN**	
Laboratory Work Order					**L2657407**	**ALS**		**WT2219907**	**ALS**		**WT2219907**	**ALS**		**493768**	**TESTMARK**	
Laboratory Sample ID					**L2657407-2**	**L2657407**		**WT2219907-00**	**WT2219907**		**WT2219907-01**	**WT2219907-003**		**1861620**	**493768**	
Sample Type	**Units**	**CCME**	**PWQO**	**BC MECC**		**L2657407-3 Field Duplicate**	**RPD**		**WT2219907-009 Field Duplicate**	**RPD**		**Field Duplicate**	**RPD**		**1861621 Field Duplicate**	**RPD**
Manganese	µg/L	600_{EQ3}[A] 430_{EQ}	n/v	n/v	16.3	16.3	0%	10.4	20.9	67%	57.7	56.5	2%	29	18	47%
Manganese	µg/L	600_{EQ3}[A] 430_{EQ}	n/v	n/v	16.3	16.3	-	10.4	20.9	-	57.7	56.5	2%	29	18	-
CCME Manganese Guideline (EQ3)				n/v	5055.5	3301.9	-	3036.2	3269.7	-	3685.4	3590.1	-	5091.9	4927.7	-
CCME Manganese Guideline (EQ4)				n/v	320	350	-	350	330	-	490	350	-	500	490	-
Mercury	µg/L	0.026[B]	0.2[C]	n/v	-	0.000157	-	-	-	-	-	-	-	***<0.1***	***<0.1***	-
Mercury	µg/L	0.026[B]	0.2[C]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Methyl Mercury	ng/L	4.0[B]	n/v	n/v	-	-	-	-	-	-	-	-	5%	-	-	-
Molybdenum	µg/L	73[B]	40[E]	n/v	0.134	0.132	2%	0.072	0.071	1%	<0.05	<0.05	159%	<1	<1	-
Nickel	µg/L	25_{TBC1}[B]	25[C]	n/v	0.57	0.56	2%	0.55	0.64	15%	0.63	0.63	11%	<1	<1	-
Nickel	µg/L	25_{TBC1}[B]	25[C]	n/v	0.57	0.56	-	0.55	0.64	-	0.63	0.63	11%	<1	<1	-
CCME Nickel Guideline				n/v	75.3	25	-	25	25	-	25	25	-	75.8	73.7	-
Niobium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	<1	-
Phosphorus	µg/L	n/v	30_{s4}[E]	n/v	<30	<30	-	***<50***	***<50***	-	***<50***	***<50***	-	***<50***	***<50***	-
Rhodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	<1	-
Rubidium	µg/L	n/v	n/v	n/v	1.33	1.36	2%	0.88	1.02	15%	0.62	0.62	10%	<1	1	-
Scandium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	1	1	0%
Selenium	µg/L	1[B]	100[C]	n/v	0.083	0.073	13%	0.108	0.108	0%	0.151	0.138	-	<0.5	<0.5	-
Silicon	µg/L	n/v	n/v	n/v	2,760	2,730	1%	2,280	2,520	10%	1,710	1,700	1%	2,800	2,900	4%
Silver	µg/L	0.25[D]	0.1[C]	n/v	<0.01	<0.01		<0.01	<0.01		<0.01	<0.01	0%	<0.1	<0.1	
Sodium	µg/L	n/v	n/v	n/v	3,250	3,320	2%	1,670	1,690	1%	2,730	2,780	4%	1,880	1,950	4%
Sulfur	µg/L	n/v	n/v	n/v	1,810	2,010	-	940	860	-	<500	<500	-	<800	<800	-
Tellurium	µg/L	n/v	n/v	n/v	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	-	<1	<1	-
Thallium	µg/L	0.8[B]	0.3_b[E]	n/v	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.1	<0.1	-
Thorium	µg/L	n/v	n/v	n/v	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	0%	<1	<1	-
Tin	µg/L	n/v	n/v	n/v	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<1	<1	-
Tungsten	µg/L	n/v	30_a[E]	n/v	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<1	<1	-
Uranium	µg/L	33[A] 15[B]	5_a[E]	n/v	0.075	0.073	3%	0.047	0.051	8%	0.033	0.032	0%	<1	<1	-
Vanadium	µg/L	n/v	6[E]	n/v	<0.5	<0.5	-	<0.5	0.5	-	<0.5	<0.5	0%	<1	<1	-
Yttrium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	<1	-
Zinc	µg/L	37_{EQ1}[A] 7.0_{EQ2}[B]	30[C] 20[E]	n/v	1.9	2.1	-	3.2	4.1	-	5.4	5.5	-	7	7	-
CCME Zinc Guideline (EQ1)				n/v	51	34	-	31.4	33.7	-	37.8	36.8	-	51.3	49.7	-
CCME Zinc Guideline (EQ2)				n/v	34.1	57.7	-	25.7	64.6	-	40.5	35.7	-	64.8	53.7	-
Zirconium	µg/L	n/v	4_a[E]	n/v	0.25	0.28	-	<0.3	0.33	-	<0.3	0.3	0%	<1	<1	-

See notes on last page

Sample Location					MATR-02						NDRS02					
Sample Date					28-Oct-21	28-Oct-21		25-Oct-22	25-Oct-22		17-Oct-22	17-Oct-22		22-Mar-23	22-Mar-23	
Sample ID					MATR-02	MATR-02Y		MATR-02	MATR-02Y		NDRS02	NDRS02Y		NDRS02	NDRS02Y	
Laboratory					MATR-02	DUP-01		MATR-02	CNC-DUP-02		NDR-S-02	CNC-DUP-01		NDR-S-02	SW-Dup	
Laboratory Work Order					ALS	ALS		ALS	ALS		ALS	ALS		TESTMARK	TESTMARK	
Laboratory Sample ID					L2657407	L2657407		WT2219907	WT2219907		WT2219907	WT2219907		493768	493768	
Sample Type	Units	CCME	PWQO	BC MECC	L2657407-2	L2657407-3 Field Duplicate	RPD	WT2219907-00	WT2219907-009 Field Duplicate	RPD	WT2219907-01	WT2219907-003 Field Duplicate	RPD	1861620	1861621 Field Duplicate	RPD
Metals - Total																
Aluminum	µg/L	$5/100_{VAR1}$ [B]	n/v	n/v	225	218	-	315	303	-	282	242	-	543	518	-
CWQG Aluminum Guideline				n/v	100	100	-	100	100	-	100	100	-	100	100	-
Antimony	µg/L	n/v	20^{E}	n/v	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.5	<0.5	-
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	0.85	0.87	2%	0.62	0.64	3%	1.05	0.99	10%	<1	<1	-
Barium	µg/L	n/v	n/v	n/v	8.77	8.65	1%	7.02	7.05	0%	7.74	7.11	15%	13	12	8%
Beryllium	µg/L	n/v	$11/1,100_{s3}$ [C]	n/v	<0.1	<0.1	-	<0.02	<0.02	-	<0.02	<0.02	40%	<0.5	<0.5	-
PWQO Beryllium Guideline				n/v	11	11	-	11	11	-	11	11	0%	11	11	-
Bismuth	µg/L	n/v	n/v	n/v	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-	<1	<1	-
Boron	µg/L	$29,000^{A}$ 1,500	200_{a} [E]	n/v	13	13	-	<10	<10	-	<10	<10	22%	<2	<2	-
Cadmium	µg/L	$.0_{STB}$ [A] 0.09_{LTG}	0.2^{C} $0.1/0.5_{s12}$ [B]	n/v	0.0171	0.0134	-	0.0181	0.0143	-	0.0203	0.0167	-	0.05	0.05	-
CWQG Cadmium Guideline (STB)				n/v	1.53	0.93	-	0.85	0.92	-	1.06	1.03	-	1.54	1.48	-
CWQG Cadmium Guideline (LTG)				n/v	0.12	0.08	-	0.08	0.08	-	0.09	0.09	-	0.12	0.12	-
PWQO Cadmium Guideline				n/v	0.1	0.1	-	0.1	0.1	-	0.1	0.1	-	0.1	0.1	-
Cerium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	0%	1	1	0%
Cesium	µg/L	n/v	n/v	n/v	0.019	0.02	5%	0.028	0.028	0%	0.014	<0.01	29%	<1	<1	-
Chromium	µg/L	n/v	n/v	n/v	0.7	0.7	0%	0.91	0.89	2%	0.83	0.76	15%	2	2	0%
Cobalt	µg/L	n/v	0.9^{E}	n/v	0.16	0.17	6%	0.18	0.18	0%	0.23	0.18	0%	0.5	0.5	0%
Copper	µg/L	2_{TBC1} [B]	5^{C} $1/5_{s13}$ [E]	n/v	**1.75**	**1.56**	11%	**1.25**	**1.31**	5%	0.92	0.88	22%	1	1	0%
Copper	µg/L	2_{TBC1} [B]	5^{C} $1/5_{s13}$ [E]	n/v	1.75	1.56	-	1.25	1.31	-	0.92	0.88	-	1	1	-
CCME Copper Guideline				n/v	2	2	-	2	2	-	2	2	-	2	2	-
PWQO Copper Guideline				n/v	5	5	-	5	5	-	5	5	-	5	5	-
Europium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	<1	-
Gallium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	<1	-
Iron	µg/L	300^{B}	300^{C}	n/v	**442**	**452**	2%	**493**	**478**	3%	**778**	**709**	13%	**1,300**	**1,200**	8%
Lanthanum	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	<1	-
Lead	µg/L	1_{TBC1} [B]	/20/25_{s14} [C] 1/3/	n/v	0.142	0.142	0%	0.19	0.184	3%	0.265	0.225	9%	0.5	0.5	0%
Lead	µg/L	1_{TBC1} [B]	/20/25_{s14} [C] 1/3/	n/v	0.142	0.142	-	0.19	0.184	-	0.265	0.225	-	0.5	0.5	-
CCME Lead Guideline				n/v	2.1	1	-	1	1	-	1	1	-	2.2	2.1	-
PWQO Lead Guideline (s14)				n/v	20	10	-	10	10	-	10	10	-	25	25	-
PWQO Lead Guideline (s15)				n/v	3	3	-	3	3	-	3	3	-	3	3	-
Lithium	µg/L	n/v	n/v	n/v	<1	<1	-	<1	<1	-	<1	<1	67%	<5	<5	-
Magnesium	µg/L	n/v	n/v	n/v	5,180	5,030	3%	3,050	3,060	0%	3,520	3,440	1%	4,830	4,920	2%
Manganese	µg/L	600_{EQ3} [A] 430_{EC}	n/v	n/v	28.6	28.9	1%	22.4	22.4	0%	78.3	64.4	1%	162	155	4%
Manganese	µg/L	600_{EQ3} [A] 430_{EC}	n/v	n/v	28.6	28.9	-	22.4	22.4	-	78.3	64.4	-	162	155	-
CCME Manganese Guideline (EQ3)				n/v	5055.5	3301.9	-	3036.2	3269.7	-	3685.4	3590.1	-	5091.9	4927.7	-
CCME Manganese Guideline (EQ4)				n/v	320	350	-	350	330	-	490	350	-	500	490	-
Mercury	ng/L	26^{B}	200^{C}	n/v	-	-	#VALUE!	-	-	-	-	-	-	-	-	-
Mercury (Trace)	ng/L	n/v	n/v	n/v	2.16	2.01	7%	4.62	3.34	32%	1.84	3.65	66%	3.57	3.15	13%
Methyl Mercury	µg/L	0.004^{B}	n/v	n/v	-	-	-	0.000086	0.000086	0%	0.000167	0.000105	-	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	0.152	0.131	15%	0.078	0.083	6%	0.064	0.055	147%	<1	<1	-
Nickel	µg/L	25_{TBC1} [B]	25^{C}	n/v	1.25	1.16	7%	0.83	0.81	2%	0.8	0.72	59%	<1	<1	-
Nickel	µg/L	25_{TBC1} [B]	25^{C}	n/v	1.25	1.16	-	0.83	0.81	-	0.8	0.72	-	<1	<1	-
CCME Nickel Guideline				n/v	75.3	25	-	25	25	-	25	25	-	75.8	73.7	-
Niobium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	<1	-
Phosphorus	µg/L	n/v	30_{s4} [E]	n/v	***<50***	***<50***	-	***<50***	***<50***	-	***<50***	***<50***	-	-	-	-
Potassium	µg/L	n/v	n/v	n/v	585	573	2%	410	416	1%	271	253	8%	620	610	2%
Rhodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	<1	-
Rubidium	µg/L	n/v	n/v	n/v	1.41	1.53	8%	1.32	1.36	3%	0.84	0.76	19%	2	2	0%
Scandium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	2	2	0%
Selenium	µg/L	1^{B}	100^{C}	n/v	0.117	0.116	1%	0.118	0.12	2%	0.151	0.157	-	<0.5	<0.5	-

Silicon	µg/L	n/v	n/v	n/v	2,960	2,950	0%	2,970	2,770	7%	1,970	1,880	27%	3,400	3,400	0%
Sample Location					**MATR-02**						**NDRS02**					
Sample Date					**28-Oct-21**	**28-Oct-21**		**25-Oct-22**	**25-Oct-22**		**17-Oct-22**	**17-Oct-22**		**22-Mar-23**	**22-Mar-23**	
					MATR-02	**MATR-02Y**		**MATR-02**	**MATR-02Y**		**NDRS02**	**NDRS02Y**		**NDRS02**	**NDRS02Y**	
Sample ID					**MATR-02**	**DUP-01**		**MATR-02**	**CNC-DUP-02**		**NDR-S-02**	**CNC-DUP-01**		**NDR-S-02**	**SW-Dup**	
Laboratory					**ALS**	**ALS**		**ALS**	**ALS**		**ALS**	**ALS**		**TESTMARK**	**TESTMARK**	
Laboratory Work Order					**L2657407**	**L2657407**		**WT2219907**	**WT2219907**		**WT2219907**	**WT2219907**		**493768**	**493768**	
Laboratory Sample ID				**BC MECC**	**L2657407-2**	**L2657407-3**		**WT2219907-00**	**WT2219907-009**		**WT2219907-01**	**WT2219907-003**		**1861620**	**1861621**	
Sample Type	**Units**	**CCME**	**PWQO**			**Field Duplicate**	**RPD**		**Field Duplicate**	**RPD**		**Field Duplicate**	**RPD**		**Field Duplicate**	**RPD**
Metals - Total																
Silver	µg/L	0.25[B]	0.1[C]	n/v	<0.05	<0.05	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.1	<0.1	-
Sodium	µg/L	n/v	n/v	n/v	3,370	3,440	2%	1,770	1,750	1%	2,730	2,680	11%	1,850	1,910	3%
Strontium	µg/L	n/v	n/v	n/v	33.8	33.5	1%	20.7	20.7	0%	25.9	25.8	2%	29	29	0%
Sulfur	µg/L	n/v	n/v	n/v	1,800	1,780	1%	980	920	6%	<500	<500	-	<800	<800	-
Tellurium	µg/L	n/v	n/v	n/v	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	-	<1	<1	-
Thallium	µg/L	0.8[B]	0.3_b[E]	n/v	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	143%	<0.1	<0.1	-
Thorium	µg/L	n/v	n/v	n/v	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	0%	<1	<1	-
Tin	µg/L	n/v	n/v	n/v	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<1	<1	-
Titanium	µg/L	n/v	n/v	n/v	7.41	7.42	0%	10.4	10.3	1%	7.99	6.29	43%	23	22	4%
Tungsten	µg/L	n/v	30_a[E]	n/v	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<1	<1	-
Uranium	µg/L	33[A] 15[B]	5_a[E]	n/v	0.077	0.075	3%	0.062	0.059	5%	0.039	0.041	0%	<1	<1	-
Vanadium	µg/L	n/v	6[E]	n/v	0.67	0.64	5%	0.8	0.76	5%	0.71	0.62	13%	1	1	0%
Yttrium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	<1	<1	-
Zinc	µg/L	37_{EQ1}[A] 7.0_{EQ2}[B]	30[C] 20[E]	n/v	4.2	3.5	18%	4.1	4.3	5%	6.4	5.8	0%	**14**	**13**	7%
Zinc	µg/L	37_{EQ1}[A] 7.0_{EQ2}[B]	30[C] 20[E]	n/v	4.2	3.5	-	4.1	4.3	-	6.4	5.8	-	14	13	-
CCME Zinc Guideline (EQ1)				n/v	51	34	-	31.4	33.7	-	37.8	36.8	-	51.3	49.7	-
CCME Zinc Guideline (EQ2)				n/v	34.1	57.7	-	25.7	64.6	-	40.5	35.7	-	64.8	53.7	-
Zirconium	µg/L	n/v	4_a[E]	n/v	0.33	0.31	6%	0.34	0.33	3%	0.33	0.32	12%	<1	1	-

See notes on last page

Sample Location					NDRS04			NDRS-04b			NDRS06					
Sample Date					30-May-22	30-May-22		18-Sep-23	18-Sep-23		24-May-23	24-May-23		21-Nov-23	21-Nov-23	
Sample ID					NDR-S-04	CNC-DUP-01		NDR.S-04b	SWDup		NDR-S-06	SWDup1		NDR-S-06	SWDup	
Laboratory					ALS	ALS		TESTMARK	TESTMARK		TESTMARK	TESTMARK		TESTMARK	TESTMARK	
Laboratory Work Order					L2711537	L2711537		512902	512902		500390	500390		519857	519857	
Laboratory Sample ID					L2711537-1	L2711537-7		1929232	1929234		1884826	1884838		1954956	1954959	
Sample Type	Units	CCME	PWQO	BC MECC		Field Duplicat	RPD		Field Duplicat	RPD		Field Duplicat	RPD		Field Duplicat	RPD
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	-	-	-	**5.69**	-	-	-	-	-	**5.71**	-	-
Temperature, Field	deg C	n/v	30_{s6}[C]	n/v	-	-	-	12.28	-	-	11.85	-	-	0.09	-	-
General Chemistry																
Acidity as CaCO3	mg/L	n/v	n/v	n/v	6.5	5.8	11%	7	8	13%	8	8	0%	8	8	0%
Alkalinity, Total	mg/L	n/v	n/v	n/v	28.4	28.8	1%	43	41	5%	27	26	4%	27	29	7%
Ammonia (as N)	mg/L	TBC2[B]	n/v	n/v	0.019	0.035	59%	0.054	0.053	2%	0.048	0.046	4%	0.058	0.058	0%
Bromide	mg/L	n/v	n/v	n/v	<0.10	<0.10	-	-	-	-	-	-	-	-	-	-
Chloride	mg/L	640[A] 120[B]	n/v	n/v	4.55	4.58	1%	3.5	3.5	0%	2.3	2.4	4%	5.3	5.4	2%
Chrysotile Asbestos (>0.5 um)	MFL	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Chrysotile Asbestos (>10 um)	MFL	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide	mg/L	0.0050[B]	n/v	n/v	<0.0020	<0.0020	-	-	-	-	-	-	-	-	-	-
Cyanide (Free)	mg/L	0.0050[B]	0.0050[C]	n/v	<0.0020	<0.0020	-	0.003	0.003	0%	0.003	0.005	50%	**0.007**	0.005	33%
Cyanide (Strong Acid Dissociable)	mg/L	0.0050[B]	n/v	n/v	-	-	-	<0.002	<0.002	-	<0.002	<0.002	-	0.005	0.004	22%
Cyanide (Weak Acid Dissociable)	mg/L	0.0050[B]	n/v	n/v	<0.0020	<0.0020	-	0.005	0.002	86%	0.002	0.003	40%	0.003	0.002	40%
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	36.3	40	10%	26.2	27.6	5%	44	44	0%
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	74.6	75.1	1%	114	96	17%	61	62	2%	80	81	1%
Fluoride	mg/L	0.12[B]	n/v	n/v	0.021	0.021	0%	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	40.4	40.2	0%	46.4	46.7	1%	33.8	32.8	3%	45.2	43.5	4%
Nitrate (as N)	mg/L	124[A] 3.0[B]	n/v	n/v	0.248	0.037	148%	<0.1	<0.1	-	0.2	0.2	0%	0.2	0.2	0%
Nitrite (as N)	mg/L	0.060[B]	n/v	n/v	<0.010	<0.010	-	<0.01	<0.01	-	<0.01	<0.01	-	0.04	0.04	0%
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	7.05	7.1	1%	7.26	6.98	4%	6.76	6.72	1%	6.63	6.67	1%
Phosphorus, Total	mg/L	n/v	0.030_{s4}[E]	n/v	0.0124	0.0194	44%	**0.033**	0.029	13%	0.008	0.008	0%	0.02	0.018	11%
Radium-226	Bq/L	n/v	1[C]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Sulfate	mg/L	n/v	n/v	128-429[F]$_{s2}$	<0.30	<0.30	-	<0.5	0.6	-	<0.5	<0.5	-	0.6	0.8	29%
Sulfate	mg/L	n/v	n/v	128-429[F]$_{s2}$	<0.30	<0.30	-	<0.5	0.6	-	<0.5	<0.5	-	0.6	0.8	-
BC MECC Sulfate Guideline (s2)					218	218	-	218	218	-	218	218	-	218	218	-
Total Dissolved Solids	mg/L	n/v	n/v	n/v	105	100	5%	95	90	5%	90	85	6%	120	125	4%
Total Suspended Solids	mg/L	SN[B]	n/v	n/v	9.6	6.7	36%	4.3	4.3	0%	3	3.7	21%	4	1.3	102%

Sample Location					NDRS04			NDRS-04b			NDRS06					
Sample Date					30-May-22	30-May-22		18-Sep-23	18-Sep-23		24-May-23	24-May-23		21-Nov-23	21-Nov-23	
Sample ID					NDR-S-04	CNC-DUP-01		NDR.S-04b	SWDup		NDR-S-06	SWDup1		NDR-S-06	SWDup	
Sampling Company					UNKNOWN	UNKNOWN		STANTEC	STANTEC		UNKNOWN	UNKNOWN		STANTEC	STANTEC	
Laboratory					ALS	ALS		TESTMARK	TESTMARK		TESTMARK	TESTMARK		TESTMARK	TESTMARK	
Laboratory Work Order					L2711537	L2711537		512902	512902		500390	500390		519857	519857	
Laboratory Sample ID					L2711537-1	L2711537-7		1929232	1929234		1884826	1884838		1954956	1954959	
Sample Type	Units	CCME	PWQO	BC MECC		Field Duplicat	RPD		Field Duplicat	RPD		Field Duplicat	RPD		Field Duplicat	RPD
Polycyclic Aromatic Hydrocarbons																
Acenaphthene	µg/L	5.8[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Anthracene	µg/L	0.012[B]	0.0008$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	µg/L	0.018[B]	0.0004$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(e)pyrene	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	µg/L	n/v	0.00002$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	µg/L	n/v	0.0002$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Biphenyl	µg/L	n/v	0.2$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Chrysene	µg/L	n/v	0.0001$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Dibenzo(a,h)anthracene	µg/L	n/v	0.002$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorobenzidine, 3,3'-	µg/L	n/v	0.6$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Fluoranthene	µg/L	0.04[B]	0.0008$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Fluorene	µg/L	[illegible]	[illegible]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Methylnaphthalene, 1-	µg/L	n/v	2$_b$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Methylnaphthalene, 2-	µg/L	n/v	2$_b$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	µg/L	1.1[B]	7$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	µg/L	0.4[B]	0.03$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Pyrene	µg/L	0.025[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-

See notes on last page

Metals - Dissolved

Aluminum	µg/L	5/100$_{VAR1}$[B]	n/v	n/v	**175**	**172**	2%	**117**	**120**	3%	**97**	**105**	8%	**164**	**165**	1%
Aluminum	µg/L	5/100$_{VAR1}$[B]	n/v	n/v	175	172	-	117	120	-	97	105	-	164	165	-
CWQG Aluminum Guideline				n/v	100	100	-	100	100	-	100	100	-	100	100	-
Antimony	µg/L	n/v	20[E]	n/v	<0.1	<0.1	-	<0.1	1.4	-	<0.5	<0.5	-	<0.1	<0.1	-
Arsenic	µg/L	5[B]	100[C] 5[E]	n/v	0.9	0.86	5%	0.8	0.8	0%	1	<1	-	0.7	0.7	0%
Barium	µg/L	n/v	n/v	n/v	5.82	5.61	4%	5.7	6.3	10%	4	4	0%	4.9	5.2	6%
Beryllium	µg/L	n/v	11/1,100$_{s3}$[C]	n/v	<0.1	<0.1	-	<0.02	0.03	-	<0.5	<0.5	-	<0.02	<0.02	-
Beryllium	µg/L	n/v	11/1,100$_{s3}$[C]	n/v	<0.1	<0.1	-	<0.02	0.03	-	<0.5	<0.5	-	<0.02	<0.02	-
PWQO Beryllium Guideline				n/v	11	11	-	11	11	-	11	11	-	11	11	-
Bismuth	µg/L	n/v	n/v	n/v	<0.05	<0.05	-	<0.05	<0.05	-	<1	<1	-	<0.05	<0.05	-
Boron	µg/L	9,000[A] 1,500	200$_a$[E]	n/v	<10	<10	-	5	5	0%	2	2	0%	3	2	40%
Cadmium	µg/L	.0$_{STB}$[A] 0.09$_{LTC}$	.2[C] 0.1/0.5$_{s12}$	n/v	0.0237	0.018	27%	0.02	0.02	0%	***<0.1***	***<0.1***	-	0.02	0.02	0%
CWQG Cadmium Guideline (STB)				n/v	0.84	0.83	-	0.96	0.97	-	0.7	0.68	-	0.94	0.9	-
CWQG Cadmium Guideline (LTG)				n/v	0.07	0.07	-	0.08	0.08	-	0.06	0.06	-	0.08	0.08	-
PWQO Cadmium Guideline				n/v	0.1	0.1	-	0.1	0.1	-	0.1	0.1	-	0.1	0.1	-
Calcium	µg/L	n/v	n/v	n/v	11,400	11,500	1%	13,000	13,300	2%	8,620	8,670	1%	12,100	12,000	1%
Cerium	µg/L	n/v	n/v	n/v	-	-	-	<1	<1	-	<1	<1	-	<1	<1	-
Cesium	µg/L	n/v	n/v	n/v	<0.01	<0.01	-	<0.01	<0.01	-	<1	<1	-	<0.01	<0.01	-
Chromium	µg/L	n/v	n/v	n/v	0.51	<0.5	-	1.4	1.4	0%	<1	<1	-	0.7	0.6	15%
Copper	µg/L	2$_{TBC1}$[B]	5[C] 1/5$_{s13}$[E]	n/v	**1.08**	**1.04**	4%	0.8	0.8	0%	<1	1	-	0.4	**1.1**	93%
Copper	µg/L	2$_{TBC1}$[B]	5[C] 1/5$_{s13}$[E]	n/v	1.08	1.04	-	0.8	0.8	-	<1	1	-	0.4	1.1	-
CCME Copper Guideline				n/v	2	2	-	2	2	-	2	2	-	2	2	-
PWQO Copper Guideline				n/v	5	5	-	5	5	-	5	5	-	5	5	-
Europium	µg/L	n/v	n/v	n/v	-	-	-	<1	<1	-	<1	<1	-	<1	<1	-
Gallium	µg/L	n/v	n/v	n/v	-	-	-	<1	<1	-	<1	<1	-	<1	<1	-
Lanthanum	µg/L	n/v	n/v	n/v	-	-	-	<1	<1	-	<1	<1	-	<1	<1	-
Lead	µg/L	1$_{TBC1}$[B]	20/25$_{s14}$[C] 1/3	n/v	0.113	0.111	2%	0.13	0.13	0%	0.1	0.1	0%	0.12	0.15	22%
Lead	µg/L	1$_{TBC1}$[B]	20/25$_{s14}$[C] 1/3	n/v	0.113	0.111	-	0.13	0.13	-	0.1	0.1	-	0.12	0.15	-
PWQO Lead Guideline (s14)				n/v	10	10	-	20	20	-	10	10	-	10	10	-
PWQO Lead Guideline (s15)				n/v	3	3	-	3	3	-	3	3	-	3	3	-

Lithium	µg/L	n/v	n/v	n/v	<1	<1	-	1	1	0%	<5	<5	-	1	1	0%
Sample Location					**NDRS04**			**NDRS04b**			**NDRS06**					
Sample Date					**30-May-22**	**30-May-22**		**18-Sep-23**	**18-Sep-23**		**24-May-23**	**24-May-23**		**21-Nov-23**	**21-Nov-23**	
Sample ID					**NDRS04**	**NDRS04Y**		**NDRS-04b**	**NDRS-04bY**		**NDRS06**	**NDRS06Y**		**NDRS06**	**NDRS06Y**	
Sampling Company					**NDR-S-04**	**CNC-DUP-01**		**NDR.S-04b**	**SWDup**		**NDR-S-06**	**SWDup1**		**NDR-S-06**	**SWDup**	
Laboratory					**UNKNOWN**	**UNKNOWN**		**STANTEC**	**STANTEC**		**UNKNOWN**	**UNKNOWN**		**STANTEC**	**STANTEC**	
Laboratory Work Order					**ALS**	**ALS**		**TESTMARK**	**TESTMARK**		**TESTMARK**	**TESTMARK**		**TESTMARK**	**TESTMARK**	
Laboratory Sample ID					**L2711537**	**L2711537**		**512902**	**512902**		**500390**	**500390**		**519857**	**519857**	
Sample Type	**Units**	**CCME**	**PWQO**	**BC MECC**	**L2711537-1**	**L2711537-7 Field Duplicat**	**RPD**	**1929232**	**1929234 Field Duplicat**	**RPD**	**1884826**	**1884838 Field Duplicat**	**RPD**	**1954956**	**1954959 Field Duplicat**	**RPD**
Manganese	µg/L	$_{EQ3}$[A] $_{E}$	n/v	n/v	47.8	45.4	5%	52.5	52.9	1%	24	24	0%	21.3	21.3	0%
Manganese	µg/L	$_{EQ3}$[A] $_{E}$	n/v	n/v	47.8	45.4	-	52.5	52.9	-	24	24	-	21.3	21.3	-
CCME Manganese Guideline (EQ3)				n/v	3003.6	2990.6	-	3391.9	3411.2	-	2568.2	2501.4	-	3314.8	3205.1	-
CCME Manganese Guideline (EQ4)				n/v	380	380	-	380	350	-	350	350	-	330	330	-
Mercury	µg/L	0.026[B]	0.2[C]	n/v	-	-	-	< 0.01/< 0.1	***< 0.1/< 0.01***	-	***<0.1***	***<0.1***	-	***<0.1***	***<0.1***	-
Mercury	µg/L	0.026[B]	0.2[C]	n/v	-	-	-	-	-	-	<0.01	<0.01	-	-	-	-
Methyl Mercury	ng/L	4.0[B]	n/v	n/v	-	-	-	0.12	0.12	0%	0.14	0.14	0%	0.81	0.17	131%
Molybdenum	µg/L	73[B]	40[E]	n/v	<0.05	0.054	-	0.12	1.32	167%	3	<1	-	<0.05	0.1	-
Nickel	µg/L	25_{TBC1}[B]	25[C]	n/v	0.61	0.62	2%	0.8	0.8	0%	<1	<1	-	0.6	<0.5	-
Nickel	µg/L	25_{TBC1}[B]	25[C]	n/v	0.61	0.62	-	0.8	0.8	-	<1	<1	-	0.6	<0.5	-
CCME Nickel Guideline				n/v	25	25	-	25	25	-	25	25	-	25	25	-
Niobium	µg/L	n/v	n/v	n/v	-	-	-	<1	<1	-	<1	<1	-	<1	<1	-
Phosphorus	µg/L	n/v	30_{s4}[E]	n/v	***<50***	***<50***	-	***<50***	***<50***	-	***<50***	***<50***	-	***<50***	***<50***	-
Rhodium	µg/L	n/v	n/v	n/v	-	-	-	<1	<1	-	<1	<1	-	<1	<1	-
Rubidium	µg/L	n/v	n/v	n/v	0.45	0.49	9%	0.9	0.9	0%	<1	<1	-	0.4	0.4	0%
Scandium	µg/L	n/v	n/v	n/v	-	-	-	1	1	0%	<1	<1	-	1	<1	-
Selenium	µg/L	1[B]	100[C]	n/v	0.167	0.148	12%	0.19	0.23	-	**2.3**	<0.5	-	0.13	0.09	-
Silicon	µg/L	n/v	n/v	n/v	441	454	3%	2,280	2,290	0%	<600	<600	-	1,810	1,820	1%
Silver	µg/L	0.25[D]	0.1[C]	n/v	<0.05	<0.05		<0.01	<0.01		<0.1	<0.1		<0.01	<0.01	
Sodium	µg/L	n/v	n/v	n/v	3,800	3,660	4%	3,170	3,190	1%	2,100	2,100	0%	4,000	3,950	1%
Sulfur	µg/L	n/v	n/v	n/v	<500	<500	-	2,000	1,800	-	<800	<800	-	<500	<500	-
Tellurium	µg/L	n/v	n/v	n/v	<0.2	<0.2	-	<0.2	<0.2	-	<1	<1	-	<0.2	<0.2	-
Thallium	µg/L	0.8[B]	0.3_b[E]	n/v	<0.01	<0.01	-	<0.01	0.07	-	<0.1	<0.1	-	<0.01	<0.01	-
Thorium	µg/L	n/v	n/v	n/v	<0.1	<0.1	-	<0.1	<0.1	-	<1	<1	-	<0.1	<0.1	-
Tin	µg/L	n/v	n/v	n/v	<0.1	<0.1	-	0.3	0.3	0%	<1	<1	-	0.3	0.3	0%
Tungsten	µg/L	n/v	30_a[E]	n/v	<0.1	<0.1	-	<0.1	<0.1	-	<1	<1	-	<0.1	<0.1	-
Uranium	µg/L	33[A] 15[B]	5_a[E]	n/v	0.034	0.035	3%	0.04	0.03	29%	<1	<1	-	0.03	0.03	0%
Vanadium	µg/L	n/v	6[E]	n/v	<0.5	<0.5	-	0.7	0.7	0%	<1	<1	-	<0.5	<0.5	-
Yttrium	µg/L	n/v	n/v	n/v	-	-	-	<1	<1	-	<1	<1	-	<1	<1	-
Zinc	µg/L	37_{EQ1}[A] 7.0_{EQ2}	30[C] 20[E]	n/v	5.9	5.3	-	3	3	-	5	4	-	4	5	-
CCME Zinc Guideline (EQ1)				n/v	31.1	31	-	34.9	35.1	-	26.8	26.1	-	34.1	33.1	-
CCME Zinc Guideline (EQ2)				n/v	42.5	40.6	-	43.4	57.1	-	42.5	43.6	-	76.5	71.4	-
Zirconium	µg/L	n/v	4_a[E]	n/v	0.33	0.34	3%	1.4	1.4	0%	<1	<1	-	0.8	0.8	0%

See notes on last page

Sample Location					NDRS04			NDRS-04b			NDRS06					
Sample Date					30-May-22	30-May-22		18-Sep-23	18-Sep-23		24-May-23	24-May-23		21-Nov-23	21-Nov-23	
Sample ID					NDRS04	NDRS04Y		NDRS-04b	NDRS-04bY		NDRS06	NDRS06Y		NDRS06	NDRS06Y	
Laboratory					NDR-S-04	CNC-DUP-01		NDR.S-04b	SWDup		NDR-S-06	SWDup1		NDR-S-06	SWDup	
Laboratory Work Order					ALS	ALS		TESTMARK	TESTMARK		TESTMARK	TESTMARK		TESTMARK	TESTMARK	
Laboratory Sample ID					L2711537	L2711537		512902	512902		500390	500390		519857	519857	
Sample Type	Units	CCME	PWQO	BC MECC	L2711537-1	L2711537-7 Field Duplicat	RPD	1929232	1929234 Field Duplicat	RPD	1884826	1884838 Field Duplicat	RPD	1954956	1954959 Field Duplicat	RPD
Metals - Total																
Aluminum	µg/L	5/100$_{VAR1}$[B]	n/v	n/v	326	351	-	229	224	-	308	307	-	314	337	-
CWQG Aluminum Guideline				n/v	100	100	-	100	100	-	100	100	-	100	100	-
Antimony	µg/L	n/v	20[E]	n/v	<0.1	<0.1	-	0.2	2.5	-	<0.5	<0.5	-	<0.1	<0.1	-
Arsenic	µg/L	5[B]	100[C] 5[E]	n/v	0.86	0.86	0%	0.8	0.8	0%	1	<1	-	0.8	0.7	13%
Barium	µg/L	n/v	n/v	n/v	7.11	6.9	3%	7.7	6.4	18%	5	5	0%	5.6	5.6	0%
Beryllium	µg/L	n/v	11/1,100$_{s3}$[C]	n/v	<0.1	<0.1	-	<0.02	0.03	-	<0.5	<0.5	-	<0.02	<0.02	-
PWQO Beryllium Guideline				n/v	11	11	-	11	11	-	11	11	-	11	11	-
Bismuth	µg/L	n/v	n/v	n/v	<0.05	<0.05	-	<0.05	<0.05	-	<1	<1	-	<0.05	<0.05	-
Boron	µg/L	9,000[A] 1,500	200$_a$[E]	n/v	<10	<10	-	5	5	0%	2	<2	-	3	2	40%
Cadmium	µg/L	0$_{STB}$[A] 0.09$_{LT}$	.2[C] 0.1/0.5$_{s12}$	n/v	0.0219	0.024	-	0.02	0.04	-	0.02	<0.02	-	0.02	0.02	-
CWQG Cadmium Guideline (STB)				n/v	0.84	0.83	-	0.96	0.97	-	0.7	0.68	-	0.94	0.9	-
CWQG Cadmium Guideline (LTG)				n/v	0.07	0.07	-	0.08	0.08	-	0.06	0.06	-	0.08	0.08	-
PWQO Cadmium Guideline				n/v	0.1	0.1	-	0.1	0.1	-	0.1	0.1	-	0.1	0.1	-
Cerium	µg/L	n/v	n/v	n/v	-	-	-	<1	<1	-	<1	<1	-	<1	<1	-
Cesium	µg/L	n/v	n/v	n/v	0.018	0.024	29%	0.01	0.01	0%	<1	<1	-	0.01	0.02	67%
Chromium	µg/L	n/v	n/v	n/v	0.88	0.91	3%	1.3	1.4	7%	1	1	0%	0.8	0.8	0%
Cobalt	µg/L	n/v	0.9[E]	n/v	0.19	0.22	15%	0.2	0.2	0%	0.2	0.2	0%	<0.1	<0.1	-
Copper	µg/L	2$_{TBC1}$[B]	5[C] 1/5$_{s13}$[E]	n/v	**1.22**	**1.36**	11%	1	**1.5**	40%	**52**	1	192%	0.6	0.6	0%
Copper	µg/L	2$_{TBC1}$[B]	5[C] 1/5$_{s13}$[E]	n/v	1.22	1.36	-	1	1.5	-	52	1	-	0.6	0.6	-
CCME Copper Guideline				n/v	2	2	-	2	2	-	2	2	-	2	2	-
PWQO Copper Guideline				n/v	5	5	-	5	5	-	5	5	-	5	5	-
Europium	µg/L	n/v	n/v	n/v	-	-	-	<1	<1	-	<1	<1	-	<1	<1	-
Gallium	µg/L	n/v	n/v	n/v	-	-	-	<1	<1	-	<1	<1	-	<1	<1	-
Iron	µg/L	300[B]	300[C]	n/v	**508**	**539**	6%	**590**	**600**	2%	**460**	**460**	0%	**610**	**610**	0%
Lanthanum	µg/L	n/v	n/v	n/v	-	-	-	<1	<1	-	<1	<1	-	<1	<1	-
Lead	µg/L	1$_{TBC1}$[B]	20/25$_{s14}$[C] 1/3	n/v	0.196	0.228	15%	0.25	0.36	36%	0.2	0.2	0%	0.2	0.2	0%
Lead	µg/L	1$_{TBC1}$[B]	20/25$_{s14}$[C] 1/3	n/v	0.196	0.228	-	0.25	0.36	-	0.2	0.2	-	0.2	0.2	-
CCME Lead Guideline				n/v	1	1	-	1	1	-	1	1	-	1	1	-
PWQO Lead Guideline (s14)				n/v	10	10	-	20	20	-	10	10	-	10	10	-
PWQO Lead Guideline (s15)				n/v	3	3	-	3	3	-	3	3	-	3	3	-
Lithium	µg/L	n/v	n/v	n/v	<1	<1	-	1	1	0%	<5	<5	-	1	1	0%
Magnesium	µg/L	n/v	n/v	n/v	2,970	3,030	2%	3,480	3,510	1%	2,380	2,380	0%	3,500	3,560	2%
Manganese	µg/L	600$_{EQ3}$[A] 430$_{E}$	n/v	n/v	55.5	65.4	16%	63.1	64	1%	36	30	18%	29.4	27.6	6%
Manganese	µg/L	600$_{EQ3}$[A] 430$_{E}$	n/v	n/v	55.5	65.4	-	63.1	64	-	36	30	-	29.4	27.6	-
CCME Manganese Guideline (EQ3)				n/v	3003.6	2990.6	-	3391.9	3411.2	-	2568.2	2501.4	-	3314.8	3205.1	-
CCME Manganese Guideline (EQ4)				n/v	380	380	-	380	350	-	350	350	-	330	330	-
Mercury	ng/L	26[B]	200[C]	n/v	-	-	-	-	-	-	-	-	-	-	-	-
Mercury (Trace)	ng/L	n/v	n/v	n/v	4.46	4.80	7%	4.04	4.17	3%	6.2	5.96	4%	3.21	4.35	30%
Methyl Mercury	µg/L	0.004[B]	n/v	n/v	0.000217	0.00023	-	-	-	-	-	-	-	-	-	-
Molybdenum	µg/L	73[B]	40[E]	n/v	<0.05	0.055	-	0.1	1	164%	2	<1	-	<0.05	<0.05	-
Nickel	µg/L	25$_{TBC1}$[B]	25[C]	n/v	0.94	0.99	5%	0.7	0.8	13%	<1	<1	-	0.9	<0.5	-
Nickel	µg/L	25$_{TBC1}$[B]	25[C]	n/v	0.94	0.99	-	0.7	0.8	-	<1	<1	-	0.9	<0.5	-
CCME Nickel Guideline				n/v	25	25	-	25	25	-	25	25	-	25	25	-
Niobium	µg/L	n/v	n/v	n/v	-	-	-	<1	<1	-	<1	<1	-	<1	<1	-
Phosphorus	µg/L	n/v	30$_{s4}$[E]	n/v	***<50***	***<50***	-	-	-	-	-	-	-	-	-	-
Potassium	µg/L	n/v	n/v	n/v	205	321	44%	280	280	0%	200	200	0%	190	200	5%
Rhodium	µg/L	n/v	n/v	n/v	-	-	-	<1	<1	-	<1	<1	-	<1	<1	-
Rubidium	µg/L	n/v	n/v	n/v	0.81	0.88	8%	1.1	1.1	0%	<1	<1	-	0.7	0.7	0%
Scandium	µg/L	n/v	n/v	n/v	-	-	-	1	1	0%	<1	<1	-	1	1	0%
Selenium	µg/L	1[B]	100[C]	n/v	0.152	0.126	19%	0.22	0.29	27%	**2**	<0.5	-	0.13	0.14	7%

Silicon	µg/L	n/v	n/v	n/v	840	810	4%	2,500	2,500	0%	600	600	0%	1,970	2,000	2%
Sample Location					**NDRS04**			**NDRS-04b**			**NDRS06**					
Sample Date					**30-May-22**	**30-May-22**		**18-Sep-23**	**18-Sep-23**		**24-May-23**	**24-May-23**		**21-Nov-23**	**21-Nov-23**	
Sample ID					**NDRS04**	**NDRS04Y**		**NDRS-04b**	**NDRS-04bY**		**NDRS06**	**NDRS06Y**		**NDRS06**	**NDRS06Y**	
Laboratory					**NDR-S-04**	**CNC-DUP-01**		**NDR.S-04b**	**SWDup**		**NDR-S-06**	**SWDup1**		**NDR-S-06**	**SWDup**	
Laboratory Work Order					**ALS**	**ALS**		**TESTMARK**	**TESTMARK**		**TESTMARK**	**TESTMARK**		**TESTMARK**	**TESTMARK**	
Laboratory Sample ID					**L2711537**	**L2711537**		**512902**	**512902**		**500390**	**500390**		**519857**	**519857**	
Sample Type	**Units**	**CCME**	**PWQO**	**BC MECC**	**L2711537-1**	**L2711537-7 Field Duplicat**	**RPD**	**1929232**	**1929234 Field Duplicat**	**RPD**	**1884826**	**1884838 Field Duplicat**	**RPD**	**1954956**	**1954959 Field Duplicat**	**RPD**
Metals - Total																
Silver	µg/L	0.25[B]	0.1[C]	n/v	<0.05	<0.05	-	<0.01	<0.01	-	<0.1	<0.1	-	<0.01	<0.01	-
Sodium	µg/L	n/v	n/v	n/v	3,460	3,540	2%	3,190	3,220	1%	2,100	2,100	0%	3,870	3,960	2%
Strontium	µg/L	n/v	n/v	n/v	20.6	20.8	1%	24.2	24.3	0%	15	15	0%	16.3	16.1	1%
Sulfur	µg/L	n/v	n/v	n/v	<500	<500	-	2,100	1,900	10%	<800	<800	-	<500	<500	-
Tellurium	µg/L	n/v	n/v	n/v	<0.2	<0.2	-	<0.2	<0.2	-	<1	<1	-	<0.2	<0.2	-
Thallium	µg/L	0.8[B]	0.3_b[E]	n/v	<0.01	<0.01	-	<0.01	0.07	-	<0.1	<0.1	-	<0.01	<0.01	-
Thorium	µg/L	n/v	n/v	n/v	<0.1	<0.1	-	<0.1	<0.1	-	<1	<1	-	<0.1	<0.1	-
Tin	µg/L	n/v	n/v	n/v	<0.1	<0.1	-	0.6	0.6	0%	<1	<1	-	0.4	0.4	0%
Titanium	µg/L	n/v	n/v	n/v	10.3	12.1	16%	6.7	6.4	5%	10	10	0%	8.2	9.5	15%
Tungsten	µg/L	n/v	30_a[E]	n/v	<0.1	<0.1	-	<0.1	<0.1	-	<1	<1	-	<0.1	<0.1	-
Uranium	µg/L	33[A] 15[B]	5_a[E]	n/v	0.039	0.038	3%	0.03	0.03	0%	<1	<1	-	0.04	0.04	0%
Vanadium	µg/L	n/v	6[E]	n/v	0.8	0.87	8%	0.8	0.9	12%	<1	<1	-	0.6	0.6	0%
Yttrium	µg/L	n/v	n/v	n/v	-	-	-	<1	<1	-	<1	<1	-	<1	<1	-
Zinc	µg/L	87_{EQ1}[A] 7.0_{EQ2}	30[C] 20[E]	n/v	6.5	**16**	84%	3	3	0%	6	4	40%	5	4	22%
Zinc	µg/L	87_{EQ1}[A] 7.0_{EQ2}	30[C] 20[E]	n/v	6.5	16	-	3	3	-	6	4	-	5	4	-
CCME Zinc Guideline (EQ1)				n/v	31.1	31	-	34.9	35.1	-	26.8	26.1	-	34.1	33.1	-
CCME Zinc Guideline (EQ2)				n/v	42.5	40.6	-	43.4	57.1	-	42.5	43.6	-	76.5	71.4	-
Zirconium	µg/L	n/v	4_a[E]	n/v	0.43	0.41	5%	1.6	1.6	0%	<1	<1	-	0.8	0.9	12%

See notes on last page

Sample Location					WBR-S-03			WBR-S-04									WBR-S-07		
Sample Date					1-Sep-22	1-Sep-22		9-Aug-21	11-Aug-21		17-Oct-23	17-Oct-23		17-Jul-23	17-Jul-23		4-Dec-23	4-Dec-23	
Sample ID					WBRS03	DUP02		WBR-S-04	CNC-DUP-01		WBR-S-04	SWDup		WBR-S-04	SW-DUP		WBR-S-07	SWDup	
Laboratory					ALS	ALS		ALS	ALS		TESTMARK	TESTMARK		ALS	ALS		TESTMARK	TESTMARK	
Laboratory Work Order					WT2213093	WT2213093		L2626399	L2626399		516339	516339		WT2322070	WT2322070		520817	520817	
Laboratory Sample ID				BC	VT2213093-01	VT2213093-011		L2626399-9	L2626399-11		1942682	1942686		WT2322070-00	T2322070-009		1958011	1958012	
Sample Type	Units	CCME	PWQO	MECC		Field Duplicat	RPD		Field Duplicat	RPD		Field Duplicate	RPD		Field Duplicat	RPD		Field Duplicat	RPD
pH, Field	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	-	-	-	-	-	-	**6.33**	-	-	6.37	6.37	-	6.67	-	-
Temperature, Field	deg C	n/v	30_{s6}[C]	n/v	-	-	-	-	-	-	7.46	-	-	20.80	20.80	-	0.37	-	-
General Chemistry																			
Acidity as CaCO3	mg/L	n/v	n/v	n/v	3	3	0%	4.2	4	5%	9	10	11%	3.3	3.2	3%	12	6	67%
Alkalinity, Total	mg/L	n/v	n/v	n/v	25	24.7	1%	66.2	59	12%	19	19	0%	47.7	61.5	25%	31	34	9%
Ammonia (as N)	mg/L	$_{TBC2}$[B]	n/v	n/v	0.0315	0.0322	2%	0.034	0.023	39%	0.1	0.1	0%	0.0284	0.0268	6%	0.106	0.107	1%
Bromide	mg/L	n/v	n/v	n/v	-	-	-	<0.10	<0.10	-	-	-	-	<0.1	<0.10	-	-	-	-
Chloride	mg/L	640[A] 120[B]	n/v	n/v	<0.50	<0.50	-	<0.50	<0.50	-	0.4	0.3	-	<0.5	<0.50	-	0.5	0.4	-
Chrysotile Asbestos (>0.5 um)	MFL	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	<0.20	-	-
Chrysotile Asbestos (>10 um)	MFL	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	<0.20	-	-
Cyanide	mg/L	0.0050[B]	n/v	n/v	<0.0020	<0.0020	-	<0.0020	<0.0020	-	-	-	-	-	-	-	-	-	-
Cyanide (Free)	mg/L	0.0050[B]	0.0050[C]	n/v	<0.0020	0.002	-	<0.0020	<0.0020	-	0.001	0.004	120%	<0.002	<0.0020	-	0.004	-	-
Cyanide (Strong Acid Dissociable)	mg/L	0.0050[B]	n/v	n/v	-	-	-	-	-	-	<0.002	<0.002	-	<0.002	<0.0020	-	0.002	-	-
Cyanide (Weak Acid Dissociable)	mg/L	0.0050[B]	n/v	n/v	<0.0020	<0.0020	-	<0.0020	<0.0020	-	**0.007**	0.004	55%	<0.002	<0.0020	-	0.003	-	-
Dissolved Organic Carbon (DOC)	mg/L	n/v	n/v	n/v	-	-	-	-	-	-	50	42.2	17%	-	-	-	44	44	0%
Electrical Conductivity, Lab	µS/cm	n/v	n/v	n/v	58.5	58.8	1%	114	111	3%	48	47	2%	83.3	87.5	5%	74	81	9%
Fluoride	mg/L	0.12[B]	n/v	n/v	0.023	0.022	4%	0.032	0.032	0%	<0.05	<0.05	-	0.028	0.028	0%	<0.05	<0.05	-
Hardness (as CaCO3)	mg/L	n/v	n/v	n/v	41	40.3	2%	66.7	65.7	2%	31.5	31.4	0%	48.6	51.1	5%	44.9	44.2	2%
Nitrate (as N)	mg/L	124[A] 3.0[B]	n/v	n/v	0.059	0.054	9%	<0.020	<0.020	-	0.2	0.1	67%	0.032	0.041	25%	0.5	0.5	0%
Nitrite (as N)	mg/L	0.060[B]	n/v	n/v	<0.010	<0.010	-	<0.010	<0.010	-	<0.01	<0.01	-	<0.01	<0.010	-	0.04	0.04	0%
pH, lab	S.U.	6.5-9.0[B]	6.5-8.5[C]	n/v	7.13	7.09	1%	7.62	7.85	3%	6.57	6.5	1%	7.55	7.57	0%	6.5	6.96	7%
Phosphorus, Total	mg/L	n/v	0.030_{s4}[E]	n/v	**0.0395**	0.0054	152%	**0.0439**	**0.0429**	2%	0.021	0.019	10%	**0.039**	**0.0349**	11%	0.03	0.028	7%
Radium-226	Bq/L	n/v	1[C]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	0.007	-	-
Sulfate	mg/L	n/v	n/v	128-429[F s2]	0.6	0.59	2%	0.46	0.46	0%	0.7	0.5	33%	0.44	0.51	15%	1.4	1.4	0%
Sulfate	mg/L	n/v	n/v	128-429[F s2]	0.6	0.59	-	0.46	0.46	-	0.7	0.5	-	0.44	0.51	15%	1.4	1.4	-
BC MECC Sulfate Guideline (s2)					218	218	-	218	218	-	218	218	-	218	218	-	218	218	-
Total Dissolved Solids	mg/L	n/v	n/v	n/v	105	113	7%	132	132	0%	55	85	43%	92	94	2%	100	75	29%
Total Suspended Solids	mg/L	$_{SN}$[B]	n/v	n/v	8.8	9.6	9%	3.1	3	3%	4.3	7.33	52%	5.9	3.5	51%	4.3	4.3	0

Sample Location					WBR-S-03			WBR-S-04									WBR-S-07		
Sample Date					1-Sep-22	1-Sep-22		9-Aug-21	11-Aug-21		17-Oct-23	17-Oct-23		17-Jul-23	17-Jul-23		4-Dec-23	4-Dec-23	
Sample ID					WBRS03	DUP02		WBR-S-04	CNC-DUP-01		WBR-S-04	SWDup		WBR-S-04	SW-DUP		WBR-S-07	SWDup	
Sampling Company					UNKNOWN	UNKNOWN		CNC	CNC		STANTEC	STANTEC		UNKNOWN	UNKNOWN		STANTEC	STANTEC	
Laboratory					ALS	ALS		ALS	ALS		TESTMARK	TESTMARK		ALS	ALS		TESTMARK	TESTMARK	
Laboratory Work Order					WT2213093	WT2213093		L2626399	L2626399		516339	516339		WT2322070	WT2322070		520817	520817	
Laboratory Sample ID				BC	VT2213093-00	VT2213093-011		L2626399-9	L2626399-11		1942682	1942686		WT2322070-00	T2322070-009		1958011	1958012	
Sample Type	Units	CCME	PWQO	MECC		Field Duplicat	RPD		Field Duplicat	RPD		Field Duplicate	RPD		Field Duplicat	RPD		Field Duplicat	RPD
Polycyclic Aromatic Hydrocarbons																			
Acenaphthene	µg/L	5.8[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-
Acenaphthylene	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-
Anthracene	µg/L	0.012[B]	0.0008$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	***<0.02***	-	-
Benzo(a)anthracene	µg/L	0.018[B]	0.0004$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	***<0.02***	-	-
Benzo(b)fluoranthene	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	<0.07	-	-
Benzo(e)pyrene	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	<0.009	-	-
Benzo(g,h,i)perylene	µg/L	n/v	0.00002$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	***<0.05***	-	-
Benzo(k)fluoranthene	µg/L	n/v	0.0002$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	***<0.05***	-	-
Biphenyl	µg/L	n/v	0.2$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-
Chrysene	µg/L	n/v	0.0001$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	***<0.06***	-	-
Dibenzo(a,h)anthracene	µg/L	n/v	0.002$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	***<0.05***	-	-
Dichlorobenzidine, 3,3'-	µg/L	n/v	0.6$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	<0.06	-	-
Fluoranthene	µg/L	0.04[B]	0.0008$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	***<0.03***	-	-
Fluorene	µg/L	[illegible]	[illegible]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-
Indeno(1,2,3-cd)pyrene	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	<0.03	-	-
Methylnaphthalene, 1-	µg/L	n/v	2$_b$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	<0.03	-	-
Methylnaphthalene, 2-	µg/L	n/v	2$_b$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	<0.02	-	-
Naphthalene	µg/L	1.1[B]	7$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	<0.06	-	-
Phenanthrene	µg/L	0.4[B]	0.03$_a$[E]	n/v	-	-	-	-	-	-	-	-	-	-	-	-	<0.03	-	-
Pyrene	µg/L	0.025[B]	n/v	n/v	-	-	-	-	-	-	-	-	-	-	-	-	***<0.06***	-	-

See notes on last page

Metals - Dissolved

Aluminum	µg/L	5/100$_{VAR1}$[B]	n/v	n/v	**331**	**307**	8%	**198**	**186**	6%	**282**	**271**	4%	**169**	**165**	2%	**231**	**227**	2%
Aluminum	µg/L	5/100$_{VAR1}$[B]	n/v	n/v	331	307	-	198	186	-	282	271	-	**169**[B]	**165**[B]	#VALUE!	231	227	-
CWQG Aluminum Guideline				n/v	100	100	-	100	100	-	5	5	-	100	100	-	5	100	-
Antimony	µg/L	n/v	20[E]	n/v	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	0.1	-	<0.1	<0.10	-	<0.1	<0.1	-
Arsenic	µg/L	5[B]	100[C] 5[E]	n/v	1.5	1.5	0%	1.39	1.45	4%	0.9	0.9	0%	1.34	1.28	5%	0.9	0.9	0%
Barium	µg/L	n/v	n/v	n/v	7.32	7.06	4%	7.53	7.16	5%	5.7	5.6	2%	6.35	6.58	4%	6.3	6.9	9%
Beryllium	µg/L	n/v	11/1,100$_{s3}$[C]	n/v	0.026	0.027	4%	<0.1	<0.1	-	<0.02	0.02	-	0.023	<0.020	-	0.02	<0.02	-
Beryllium	µg/L	n/v	11/1,100$_{s3}$[C]	n/v	0.026	0.027	-	<0.1	<0.1	-	<0.02	0.02	-	0.023	<0.020	#VALUE!	0.02	<0.02	-
PWQO Beryllium Guideline				n/v	11	11	-	11	11	-	11	11	-	11	11	-	11	11	-
Bismuth	µg/L	n/v	n/v	n/v	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.050	-	<0.05	<0.05	-
Boron	µg/L	29,000[A] 1,500[B]	200$_a$[E]	n/v	<10	<10	-	<10	<10	-	2	2	0%	<10	<10	-	3	4	29%
Cadmium	µg/L	1.0$_{STB}$[A] 0.09$_{LTG}$	0.2[C] 0.1/0.5$_{s12}$[E]	n/v	0.0295	0.0296	0%	0.0169	0.0175	3%	0.04	0.05	22%	0.0198	0.0203	2%	0.05	0.05	0%
CWQG Cadmium Guideline (STB)				n/v	0.85	0.83	-	1.39	1.37	-	0.65	0.65	-	1.01	1.06	-	0.93	0.92	-
CWQG Cadmium Guideline (LTG)				n/v	0.08	0.07	-	0.11	0.11	-	0.06	0.06	-	0.09	0.09	-	0.08	0.08	-
PWQO Cadmium Guideline				n/v	0.1	0.1	-	0.1	0.1	-	0.1	0.1	-	0.1	0.1	-	0.1	0.1	-
Calcium	µg/L	n/v	n/v	n/v	11,800	11,400	3%	20,200	19,900	1%	8,560	8,550	0%	13,700	14,500	6%	11,900	12,700	7%
Cerium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	<1	<1	-	-	-	-	<1	<1	-
Cesium	µg/L	n/v	n/v	n/v	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.010	-	<0.01	<0.01	-
Chromium	µg/L	n/v	n/v	n/v	1.07	1.04	3%	0.8	0.77	4%	0.8	0.9	12%	0.72	0.74	3%	1	1	0%
Copper	µg/L	2$_{TBC1}$[B]	5[C] 1/5$_{s13}$[E]	n/v	**1.99**	**1.98**	1%	**1.44**	**1.46**	1%	**1.6**	**2.9**	58%	**1.39**	**1.5**	8%	**1.6**	**2.3**	36%
Copper	µg/L	2$_{TBC1}$[B]	5[C] 1/5$_{s13}$[E]	n/v	1.99	1.98	-	1.44	1.46	-	1.6	2.9	-	1.39	1.5	8%	1.6	2.3	-
CCME Copper Guideline				n/v	2	2	-	2	2	-	2	2	-	2	2	-	2	2	-
PWQO Copper Guideline				n/v	5	5	-	5	5	-	5	5	-	5	5	-	5	5	-
Europium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	<1	<1	-	-	-	-	<1	<1	-
Gallium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	<1	<1	-	-	-	-	<1	<1	-
Lanthanum	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	<1	<1	-	-	-	-	<1	<1	-
Lead	µg/L	1$_{TBC1}$[B]	'20/25$_{s14}$[C] 1/3/	n/v	0.276	0.281	2%	0.265	0.308	15%	0.28	0.27	4%	0.205	0.207	1%	0.25	0.28	11%
Lead	µg/L	1$_{TBC1}$[B]	'20/25$_{s14}$[C] 1/3/	n/v	0.276	0.281	-	0.265	0.308	-	0.28	0.27	-	0.205	0.207	1%	0.25	0.28	-
PWQO Lead Guideline (s14)				n/v	10	10	-	20	20	-	5	5	-	20	20	-	10	10	-
PWQO Lead Guideline (s15)				n/v	3	3	-	3	3	-	3	3	-	3	3	-	3	3	-

Lithium	µg/L	n/v	n/v	n/v	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1.0	-	<1	<1	-
Sample Location					**WBR-S-03**			**WBR-S-04**									**WBR-S-07**		
Sample Date					**1-Sep-22**	**1-Sep-22**		**9-Aug-21**	**11-Aug-21**		**17-Oct-23**	**17-Oct-23**		**17-Jul-23**	**17-Jul-23**		**4-Dec-23**	**4-Dec-23**	
					WBR-S-03	**WBR-S-03Y**		**WBR-S-04**	**WBR-S-04Y**		**WBR-S-04**	**WBR-S-04Y**		**WBR-S-04**	**WBR-S-04Y**		**WBR-S-07**	**WBR-S-07Y**	
Sample ID					**WBRS03**	**DUP02**		**WBR-S-04**	**CNC-DUP-01**		**WBR-S-04**	**SWDup**		**WBR-S-04**	**SW-DUP**		**WBR-S-07**	**SWDup**	
Sampling Company					**UNKNOWN**	**UNKNOWN**		**CNC**	**CNC**		**STANTEC**	**STANTEC**		**UNKNOWN**	**UNKNOWN**		**STANTEC**	**STANTEC**	
Laboratory					**ALS**	**ALS**		**ALS**	**ALS**		**TESTMARK**	**TESTMARK**		**ALS**	**ALS**		**TESTMARK**	**TESTMARK**	
Laboratory Work Order					**WT2213093**	**WT2213093**		**L2626399**	**L2626399**		**516339**	**516339**		**WT2322070**	**WT2322070**		**520817**	**520817**	
Laboratory Sample ID				**BC**	**WT2213093-00**	**WT2213093-011**		**L2626399-9**	**L2626399-11**		**1942682**	**1942686**		**WT2322070-00**	**WT2322070-009**		**1958011**	**1958012**	
Sample Type	**Units**	**CCME**	**PWQO**	**MECC**		**Field Duplicat**	**RPD**		**Field Duplicat**	**RPD**		**Field Duplicate**	**RPD**		**Field Duplicat**	**RPD**		**Field Duplicat**	**RPD**
Manganese	µg/L	600_{EQ3}[A] 430_{EQ}	n/v	n/v	37.2	36	3%	62.1	61.1	2%	21	20.9	0%	60.9	57	7%	99.9	172	53%
Manganese	µg/L	600_{EQ3}[A] 430_{EQ}	n/v	n/v	37.2	36	-	62.1	61.1	-	21	20.9	-	60.9	57	7%	99.9	172	-
CCME Manganese Guideline (EQ3)				n/v	3042.7	2997.1	-	4664.7	4603.2	-	2414.1	2407.4	-	3532.7	3691.8	-	3295.4	3250.3	-
CCME Manganese Guideline (EQ4)				n/v	380	380	-	430	390	-	330	330	-	350	430	-	330	350	-
Mercury	µg/L	0.026[B]	0.2[C]	n/v	-	-	-	0.00034	0.000345	1%	***<0.1***	***<0.1***	-	-	-	-	***<0.1***	***<0.1***	-
Mercury	µg/L	0.026[B]	0.2[C]	n/v	-	-	-	-	-	-	-	-	-			#DIV/0!	-	-	-
Methyl Mercury	ng/L	4.0[B]	n/v	n/v	-	-	-	-	-	-	0.12	0.14	15%	0.105	0.156	39%	0.24	-	-
Molybdenum	µg/L	73[B]	40[E]	n/v	0.052	0.05	4%	0.099	0.09	10%	<0.05	1.1	-	0.082	0.102	22%	0.11	0.14	24%
Nickel	µg/L	25_{TBC1}[B]	25[C]	n/v	1.07	1.11	4%	0.85	0.85	0%	1.1	1.2	9%	0.7	0.72	3%	1	0.9	11%
Nickel	µg/L	25_{TBC1}[B]	25[C]	n/v	1.07	1.11	-	0.85	0.85	-	1.1	1.2	-	0.7	0.72	3%	1	0.9	-
CCME Nickel Guideline				n/v	25	25	-	70.3	69.5	-	25	25	-	25	25	-	25	25	-
Niobium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	<1	<1	-	-	-	-	<1	<1	-
Phosphorus	µg/L	n/v	30_{s4}[E]	n/v	***<50***	***<50***	-	<30	<30	-	**140**	***<50***	-	***<50***	***<50***	-	***<50***	***<50***	-
Rhodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	<1	<1	-	-	-	-	<1	<1	-
Rubidium	µg/L	n/v	n/v	n/v	1.19	1.16	3%	1.18	1.14	3%	0.6	0.6	0%	0.88	0.92	4%	0.7	0.7	0%
Scandium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	1	1	0%	-	-	-	<1	<1	-
Selenium	µg/L	1[B]	100[C]	n/v	0.204	0.195	5%	0.161	0.134	18%	<0.05	0.07	-	0.151	0.181	18%	<0.05	<0.05	-
Silicon	µg/L	n/v	n/v	n/v	2,730	2,710	1%	2,010	1,940	4%	1,570	1,550	1%	1,560	1,640	5%	2,120	2,210	4%
Silver	µg/L	0.25[D]	0.1[C]	n/v	<0.01	<0.01		<0.01	<0.01		<0.01	<0.01		<0.01	<0.010		<0.01	<0.01	
Sodium	µg/L	n/v	n/v	n/v	1,000	1,050	5%	1,760	1,790	2%	890	900	1%	1,210	1,340	10%	1,280	1,270	1%
Sulfur	µg/L	n/v	n/v	n/v	610	620	2%	700	670	4%	<500	<500	-	<500	<500	-	900	1,100	20%
Tellurium	µg/L	n/v	n/v	n/v	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.20	-	<0.2	<0.2	-
Thallium	µg/L	0.8[B]	0.3_b[E]	n/v	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	0.07	-	<0.01	<0.010	-	<0.01	<0.01	-
Thorium	µg/L	n/v	n/v	n/v	0.16	0.17	6%	0.16	0.16	0%	<0.1	0.1	-	0.12	0.14	15%	<0.1	<0.1	-
Tin	µg/L	n/v	n/v	n/v	<0.1	<0.1	-	<0.1	<0.1	-	0.2	0.2	0%	<0.1	<0.10	-	<0.1	<0.1	-
Tungsten	µg/L	n/v	30_a[E]	n/v	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.10	-	<0.1	<0.1	-
Uranium	µg/L	33[A] 15[B]	5_a[E]	n/v	0.06	0.061	2%	0.075	0.071	5%	0.04	0.04	0%	0.066	0.068	3%	0.05	0.05	0%
Vanadium	µg/L	n/v	6[E]	n/v	0.94	0.92	2%	0.84	0.83	1%	0.6	0.7	15%	0.89	0.92	3%	0.7	0.8	13%
Yttrium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	<1	<1	-	-	-	-	<1	<1	-
Zinc	µg/L	37_{EQ1}[A] 7.0_{EQ2}[B]	30[C] 20[E]	n/v	6.8	7.7	-	3.3	5.2	-	5	8	-	2.3	2.2	4%	6	7	-
CCME Zinc Guideline (EQ1)				n/v	31.5	31	-	47.2	46.6	-	25.3	25.2	-	36.3	37.8	-	34	33.5	-
CCME Zinc Guideline (EQ2)				n/v	40.4	41.1	-	43	35.1	-	60	59.2	-	33.7	34.8	-	84.5	57.2	-
Zirconium	µg/L	n/v	4_a[E]	n/v	0.79	0.79	0%	0.86	0.8	7%	1.6	1.6	0%	0.69	0.74	7%	1.4	1.4	0%

See notes on last page

Sample Location					WBR-S-03			WBR-S-04								WBR-S-07		
Sample Date					1-Sep-22	1-Sep-22		9-Aug-21	11-Aug-21		17-Oct-23	17-Oct-23		17-Jul-23	17-Jul-23		4-Dec-23	4-Dec-23	
Sample ID					WBR-S-03	WBR-S-03Y		WBR-S-04	WBR-S-04Y		WBR-S-04	WBR-S-04Y		WBR-S-04	WBR-S-04Y		WBR-S-07	WBR-S-07Y	
Laboratory					WBRS03	DUP02		WBR-S-04	CNC-DUP-01		WBR-S-04	SWDup		WBR-S-04	SW-DUP		WBR-S-07	SWDup	
Laboratory Work Order					ALS	ALS		ALS	ALS		TESTMARK	TESTMARK		ALS	ALS		TESTMARK	TESTMARK	
Laboratory Sample ID				BC	WT2213093	WT2213093		L2626399	L2626399		516339	516339		WT2322070	WT2322070		520817	520817	
Sample Type	Units	CCME	PWQO	MECC	WT2213093-00	WT2213093-011 Field Duplicat	RPD	L2626399-9	L2626399-11 Field Duplicat	RPD	1942682	1942686 Field Duplicate	RPD	WT2322070-00	WT2322070-009 Field Duplicat	RPD	1958011	1958012 Field Duplicat	RPD
Metals - Total																			
Aluminum	µg/L	$5/100_{VAR1}$ [B]	n/v	n/v	808	801	-	773	760	-	386	454	-			#DIV/0!	580	577	-
CWQG Aluminum Guideline				n/v	100	100	-	100	100	-	5	5	-	100	100		5	100	-
Antimony	µg/L	n/v	20^{E}	n/v	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	0.2	-	<0.1	<0.10	-	<0.1	<0.1	-
Arsenic	µg/L	5^{B}	100^{C} 5^{E}	n/v	1.62	1.54	5%	1.56	1.57	1%	0.8	0.9	12%	1.48	1.52	3%	0.8	0.8	0%
Barium	µg/L	n/v	n/v	n/v	10.4	10.7	3%	10.7	10.6	1%	6.5	6.6	2%	12.3	11.00	11%	8.4	8.2	2%
Beryllium	µg/L	n/v	$11/1,100_{s3}$ [C]	n/v	0.037	0.046	22%	<0.1	<0.1	-	<0.02	0.02	-	0.052	<0.04	-	0.02	0.03	40%
PWQO Beryllium Guideline				n/v	11	11	-	11	11	-	11	11	-	11	11	-	11	11	-
Bismuth	µg/L	n/v	n/v	n/v	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.050	-	<0.05	<0.05	-
Boron	µg/L	$29,000^{A}$ $1,500^{B}$	200_{a} [E]	n/v	<10	<10	-	<10	<10	-	<2	<2	-	<10	<10	-	3	<2	-
Cadmium	µg/L	1.0_{STB} [A] 0.09_{LTG}	0.2^{C} $0.1/0.5_{s12}$ [E]	n/v	0.041	0.037	-	0.0214	0.0225	-	0.04	0.05	-			#DIV/0!	0.05	0.05	-
CWQG Cadmium Guideline (STB)				n/v	0.85	0.83	-	1.39	1.37	-	0.65	0.65	-	1.01	1.06	-	0.93	0.92	-
CWQG Cadmium Guideline (LTG)				n/v	0.08	0.07	-	0.11	0.11	-	0.06	0.06	-	0.09	0.09	-	0.08	0.08	-
PWQO Cadmium Guideline				n/v	0.1	0.1	-	0.1	0.1	-	0.1	0.1	-	0.1	0.1	-	0.1	0.1	-
Cerium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	1	1	0%	-	-	-	1	1	0%
Cesium	µg/L	n/v	n/v	n/v	0.071	0.068	4%	0.07	0.069	1%	0.01	0.02	67%	0.101	<0.072	-	0.03	0.03	0%
Chromium	µg/L	n/v	n/v	n/v	2.24	2.09	7%	1.82	1.78	2%	1.1	1.1	0%	2.5	1.95	25%	1.6	1.7	6%
Cobalt	µg/L	n/v	0.9^{E}	n/v	0.46	0.47	2%	0.42	0.4	5%	0.1	0.1	0%	0.59	0.45	27%	0.5	0.5	0%
Copper	µg/L	2_{TBC1} [B]	5^{C} $1/5_{s13}$ [E]	n/v	**2.4**	**2.17**	10%	**1.71**	**1.67**	2%	**2.6**	**2**	26%	**2.21**	**1.98**	11%	**2**	**1.9**	5%
Copper	µg/L	2_{TBC1} [B]	5^{C} $1/5_{s13}$ [E]	n/v	2.4	2.17	-	1.71	1.67	-	2.6	2	-	**2.21** [B]	1.98	#VALUE!	2	1.9	-
CCME Copper Guideline				n/v	2	2	-	2	2	-	2	2	-	2	2	-	2	2	-
PWQO Copper Guideline				n/v	5	5	-	5	5	-	5	5	-	5	5	-	5	5	-
Europium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	<1	<1	-	-	-	-	<1	<1	-
Gallium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	<1	<1	-	-	-	-	<1	<1	-
Iron	µg/L	300^{B}	300^{C}	n/v	**1,480**	**1,450**	2%	**1,310**	**1,260**	4%	**700**	**700**	0%	**1,510**	**1,270**	17%	**1,100**	**1,100**	0%
Lanthanum	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	<1	<1	-	-	-	-	<1	<1	-
Lead	µg/L	1_{TBC1} [B]	$^{C}20/25_{s14}$ [C] 1/3/	n/v	0.547	0.555	1%	0.522	0.512	2%	0.45	0.34	28%	0.674		-	0.36	0.37	3%
Lead	µg/L	1_{TBC1} [B]	$^{C}20/25_{s14}$ [C] 1/3/	n/v	0.547	0.555	-	0.522	0.512	-	0.45	0.34	-			#DIV/0!	0.36	0.37	-
CCME Lead Guideline				n/v	1	1	-	1.9	1.9	-	1	1	-	1		-	1	1	-
PWQO Lead Guideline (s14)				n/v	10	10	-	20	20	-	5	5	-	20		-	10	10	-
PWQO Lead Guideline (s15)				n/v	3	3	-	3	3	-	3	3	-	3		-	3	3	-
Lithium	µg/L	n/v	n/v	n/v	<1	1.3	-	1.5	1.5	0%	<1	<1	-	1.8	<1.4	-	1	1	0%
Magnesium	µg/L	n/v	n/v	n/v	2,990	3,060	2%	4,530	4,490	1%	2,270	2,230	2%	3,650	3,790	4%	3,230	3,190	1%
Manganese	µg/L	600_{EQ3} [A] 430_{EQ}	n/v	n/v	63.9	68.5	7%	75.6	73.3	3%	28	25.5	9%	80.7	74.2	8%	191	191	0%
Manganese	µg/L	600_{EQ3} [A] 430_{EQ}	n/v	n/v	63.9	68.5	-	75.6	73.3	-	28	25.5	-			#DIV/0!	191	191	-
CCME Manganese Guideline (EQ3)				n/v	3042.7	2997.1	-	4664.7	4603.2	-	2414.1	2407.4	-	3532.7	3691.8	-	3295.4	3250.3	-
CCME Manganese Guideline (EQ4)				n/v	380	380	-	430	390	-	330	330	-	350	430	-	330	350	-
Mercury	ng/L	26^{B}	200^{C}	n/v	-	-	-	-	-	-	-	-	-	-	-	#VALUE!	-	-	-
Mercury (Trace)	ng/L	n/v	n/v	n/v	5.26	7.22	31%	2.06	0.93	76%	6.84	6.99	2%	3.12	2.93	6%	4.68	-	-
Methyl Mercury	µg/L	0.004^{B}	n/v	n/v	0.000204	0.000204	-	-	-	-	-	-	-	0.11	0.16	39%	-	-	-
Molybdenum	µg/L	73^{B}	40^{E}	n/v	0.051	0.062	19%	0.113	0.101	11%	0.12	0.97	156%	0.101	0.097	4%	0.07	0.08	13%
Nickel	µg/L	25_{TBC1} [B]	25^{C}	n/v	1.77	1.71	3%	1.47	1.45	1%	1.1	1.2	9%	1.99	1.55	25%	0.9	0.7	25%
Nickel	µg/L	25_{TBC1} [B]	25^{C}	n/v	1.77	1.71	-	1.47	1.45	-	1.1	1.2	-			#DIV/0!	0.9	0.7	-
CCME Nickel Guideline				n/v	25	25	-	70.3	69.5	-	25	25	-	25	25	-	25	25	-
Niobium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	<1	<1	-	-	-	-	<1	<1	-
Phosphorus	µg/L	n/v	30_{s4} [E]	n/v	***<50***	**51**	-	***<50***	***<50***	-	-	-	-	**51**	***<50***	-	-	-	-
Potassium	µg/L	n/v	n/v	n/v	419	405	3%	488	483		210	210	0%	515	453	13%	340	330	3%
Rhodium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	<1	<1	-	-	-	-	<1	<1	-
Rubidium	µg/L	n/v	n/v	n/v	2.18	2.12	3%	2.08	2.19	5%	0.8	0.9	12%	2.56	2.09	20%	1.2	1.2	0%
Scandium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	1	1	-	-	-	-	1	1	-
Selenium	µg/L	1^{B}	100^{C}	n/v	0.195	0.18	8%	0.127	0.152	18%	<0.05	<0.05	-	0.15	0.166	10%	0.22	0.19	15%

Silicon	µg/L	n/v	n/v	n/v	3,530	3,480	1%	3,180	2,970	7%	1,650	1,780	8%	3,210	2,790	14%	2,850	2,810	1%
Sample Location						**WBR-S-03**						**WBR-S-04**						**WBR-S-07**	
Sample Date					**1-Sep-22**	**1-Sep-22**		**9-Aug-21**	**11-Aug-21**		**17-Oct-23**	**17-Oct-23**		**17-Jul-23**	**17-Jul-23**		**4-Dec-23**	**4-Dec-23**	
Sample ID					**WBR-S-03 WBRS03**	**WBR-S-03Y DUP02**		**WBR-S-04 WBR-S-04**	**WBR-S-04Y CNC-DUP-01**		**WBR-S-04 WBR-S-04**	**WBR-S-04Y SWDup**		**WBR-S-04 WBR-S-04**	**WBR-S-04Y SW-DUP**		**WBR-S-07 WBR-S-07**	**WBR-S-07Y SWDup**	
Laboratory					**ALS**	**ALS**		**ALS**	**ALS**		**TESTMARK**	**TESTMARK**		**ALS**	**ALS**		**TESTMARK**	**TESTMARK**	
Laboratory Work Order					**WT2213093**	**WT2213093**		**L2626399**	**L2626399**		**516339**	**516339**		**WT2322070**	**WT2322070**		**520817**	**520817**	
Laboratory Sample ID				**BC MECC**	**WT2213093-00**	**WT2213093-011**		**L2626399-9**	**L2626399-11**		**1942682**	**1942686**		**WT2322070-00**	**WT2322070-009**		**1958011**	**1958012**	
Sample Type	**Units**	**CCME**	**PWQO**			**Field Duplicat**	**RPD**		**Field Duplicat**	**RPD**		**Field Duplicate**	**RPD**		**Field Duplicat**	**RPD**		**Field Duplicat**	**RPD**
Metals - Total																			
Silver	µg/L	0.25[B]	0.1[C]	n/v	<0.01	<0.01	-	<0.05	<0.05	-	<0.01	<0.01	-	<0.01	<0.010	-	<0.01	<0.01	-
Sodium	µg/L	n/v	n/v	n/v	1,080	999	8%	1,750	1,740	1%	990	890	11%	1,280	1,400	9%	1,300	1,280	2%
Strontium	µg/L	n/v	n/v	n/v	26.3	28	6%	38.7	38.1	2%	17.7	17.9	1%	30.7	31.8	4%	23.2	23.4	1%
Sulfur	µg/L	n/v	n/v	n/v	<500	690	-	560	<500	-	<500	<500	-	<500	<500	-	1,000	1,000	0%
Tellurium	µg/L	n/v	n/v	n/v	<0.2	<0.2	-	0.29	<0.2	-	<0.2	<0.2	-	<0.2	<0.20	-	<0.2	<0.2	-
Thallium	µg/L	0.8[B]	0.3_b[E]	n/v	0.01	0.01	0%	0.011	0.011	0%	<0.01	0.03	-	0.011	<0.010	-	<0.01	<0.01	-
Thorium	µg/L	n/v	n/v	n/v	0.16	0.15	6%	0.22	0.19	15%	0.1	0.1	0%	0.18	0.18	0%	0.1	0.1	0%
Tin	µg/L	n/v	n/v	n/v	<0.1	<0.1	-	<0.1	<0.1	-	0.2	0.3	-	<0.1	<0.10	-	<0.1	<0.1	-
Titanium	µg/L	n/v	n/v	n/v	29.8	29.4	1%	28.8	29.3	2%	7.9	10.4	27%	39.4	29.5	29%	16.7	17.4	4%
Tungsten	µg/L	n/v	30_a[E]	n/v	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.10	-	<0.1	<0.1	-
Uranium	µg/L	33[A] 15[B]	5_a[E]	n/v	0.071	0.072	1%	0.092	0.087	6%	0.04	0.04	0%	0.088	0.085	3%	0.06	0.06	0%
Vanadium	µg/L	n/v	6[E]	n/v	1.97	1.83	7%	1.97	1.88	5%	0.8	0.9	12%	2.5	2.07	19%	1.2	1.2	0%
Yttrium	µg/L	n/v	n/v	n/v	-	-	-	-	-	-	<1	<1	-	-	-	-	<1	<1	-
Zinc	µg/L	37_{EQ1}[A] 7.0_{EQ2}[B]	30[C] 20[E]	n/v	**8.1**	**7.7**	5%	3.9	4	3%	**9**	7	25%	**7.2**[D]	5	-	**8**	6	29%
Zinc	µg/L	37_{EQ1}[A] 7.0_{EQ2}[B]	30[C] 20[E]	n/v	8.1	7.7	-	3.9	4	-	9	7	-	7.2	5	36%	8	6	-
CCME Zinc Guideline (EQ1)				n/v	31.5	31	-	47.2	46.6	-	25.3	25.2	-	36.3	37.8	-	34	33.5	-
CCME Zinc Guideline (EQ2)				n/v	40.4	41.1	-	43	35.1	-	60	59.2	-	33.7	34.8	-	84.5	57.2	-
Zirconium	µg/L	n/v	4_a[E]	n/v	0.88	0.79	11%	1.26	1.06	17%	1.8	1.8	0%	1.12	1.06	6%	1.6	1.5	6%

See notes on last page

Appendix C Certificates of Analysis

Wood Environment & Infrastructure Solutions
ATTN: Dale Klodnicki
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7

Date Received: 07-AUG-21
Report Date: 21-SEP-21 13:41 (MT)
Version: FINAL

Client Phone: 905-568-2929

Certificate of Analysis

Lab Work Order #: L2623628

Project P.O. #: OMEMA2002.2021C.200.5120.573000
Job Reference: OMEMA2002
C of C Numbers:
Legal Site Desc:

Comments: ADDITIONAL 16-SEP-21 12:02

<original signed by>

Gayle Braun
Senior Account Manager

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

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2623628-1 NDR-P-04							
Sampled By: TB/MG on 05-AUG-21 @ 09:00							
Matrix: WATER							
Physical Tests							
Conductivity	150		1.0	umhos/cm	09-AUG-21		
Hardness (as CaCO3)	80.4	HTC	0.50	mg/L	09-AUG-21		
pH	7.78		0.10	pH units	07-AUG-21	6.5-9.0	6.5-8.5
Total Suspended Solids	<3.0		3.0	mg/L	10-AUG-21		
Total Dissolved Solids	99	DLDS	13	mg/L	09-AUG-21		
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	75.4		1.0	mg/L	07-AUG-21		
Ammonia, Total (as N)	<0.010		0.010	mg/L	10-AUG-21		
Bromide (Br)	<0.10		0.10	mg/L	09-AUG-21		
Chloride (Cl)	<0.50		0.50	mg/L	09-AUG-21	120	
Fluoride (F)	0.027		0.020	mg/L	09-AUG-21	0.12	
Nitrate (as N)	<0.020		0.020	mg/L	09-AUG-21	3	
Nitrite (as N)	<0.010		0.010	mg/L	09-AUG-21	0.06	
Phosphorus (P)-Total	0.0099		0.0010	mg/L	11-AUG-21		0.01
Sulfate (SO4)	<0.30		0.30	mg/L	09-AUG-21		
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L	11-AUG-21		
Cyanide, Total	<0.0020		0.0020	mg/L	11-AUG-21		
Cyanide, Free	<0.0020		0.0020	mg/L	11-AUG-21	0.005	
Inorganic Parameters							
Acidity (as CaCO3)	6.3		2.0	mg/L	07-AUG-21		
Total Metals							
Aluminum (Al)-Total	0.0156		0.0050	mg/L	09-AUG-21	*0.005	*0.015
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	09-AUG-21		0.02
Arsenic (As)-Total	0.00030		0.00010	mg/L	09-AUG-21	0.005	0.005
Barium (Ba)-Total	0.00808		0.00010	mg/L	09-AUG-21		
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	09-AUG-21		0.011
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	09-AUG-21		
Boron (B)-Total	<0.010		0.010	mg/L	09-AUG-21		0.2
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	09-AUG-21	0.00004	0.0001
Calcium (Ca)-Total	24.6		0.050	mg/L	09-AUG-21		
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	09-AUG-21		
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	09-AUG-21	0.001	
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	09-AUG-21		0.0009
Copper (Cu)-Total	<0.00050		0.00050	mg/L	09-AUG-21	0.002	0.001
Iron (Fe)-Total	0.065		0.010	mg/L	09-AUG-21	0.3	0.3
Lead (Pb)-Total	0.000067		0.000050	mg/L	09-AUG-21	0.001	0.001
Lithium (Li)-Total	<0.0010		0.0010	mg/L	09-AUG-21		
Magnesium (Mg)-Total	4.60		0.0050	mg/L	09-AUG-21		
Manganese (Mn)-Total	0.0135		0.00050	mg/L	09-AUG-21		
Mercury (Hg)-Total	<0.00050		0.00050	ug/L	16-AUG-21	0.026	0.2
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L	09-AUG-21	0.073	0.04
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	09-AUG-21	0.025	0.025
Phosphorus (P)-Total	<0.050		0.050	mg/L	09-AUG-21		**0.01
Potassium (K)-Total	0.550		0.050	mg/L	09-AUG-21		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2623628-1 NDR-P-04							
Sampled By: TB/MG on 05-AUG-21 @ 09:00							
Matrix: WATER							
Total Metals							
Rubidium (Rb)-Total	0.00078		0.00020	mg/L	09-AUG-21		
Selenium (Se)-Total	<0.000050		0.000050	mg/L	09-AUG-21	0.001	0.1
Silicon (Si)-Total	1.14		0.10	mg/L	09-AUG-21		
Silver (Ag)-Total	<0.000050		0.000050	mg/L	09-AUG-21	0.0001	0.0001
Sodium (Na)-Total	0.574		0.050	mg/L	09-AUG-21		
Strontium (Sr)-Total	0.0310		0.0010	mg/L	09-AUG-21		
Sulfur (S)-Total	<0.50		0.50	mg/L	09-AUG-21		
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	09-AUG-21		
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	09-AUG-21	0.0008	0.0003
Thorium (Th)-Total	<0.00010		0.00010	mg/L	09-AUG-21		
Tin (Sn)-Total	<0.00010		0.00010	mg/L	09-AUG-21		
Titanium (Ti)-Total	0.00049		0.00030	mg/L	09-AUG-21		
Tungsten (W)-Total	<0.00010		0.00010	mg/L	09-AUG-21		0.03
Uranium (U)-Total	<0.000010		0.000010	mg/L	09-AUG-21		0.005
Vanadium (V)-Total	<0.00050		0.00050	mg/L	09-AUG-21		0.006
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	09-AUG-21	0.03	0.02
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	09-AUG-21		0.004
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD			No Unit	11-AUG-21		
Aluminum (Al)-Dissolved	0.0034		0.0010	mg/L	11-AUG-21	0.005	0.015
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	11-AUG-21		0.02
Arsenic (As)-Dissolved	0.00029		0.00010	mg/L	11-AUG-21	0.005	0.005
Barium (Ba)-Dissolved	0.00840		0.00010	mg/L	11-AUG-21		
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	11-AUG-21		0.011
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	11-AUG-21		
Boron (B)-Dissolved	<0.010		0.010	mg/L	11-AUG-21		0.2
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	11-AUG-21	0.00004	0.0001
Calcium (Ca)-Dissolved	25.6		0.050	mg/L	11-AUG-21		
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	11-AUG-21		
Chromium (Cr)-Dissolved	0.00019		0.00010	mg/L	11-AUG-21	0.001	
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	11-AUG-21		0.0009
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	11-AUG-21	0.002	0.001
Iron (Fe)-Dissolved	0.031		0.010	mg/L	11-AUG-21	0.3	0.3
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	11-AUG-21	0.001	0.001
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	11-AUG-21		
Magnesium (Mg)-Dissolved	4.69		0.0050	mg/L	11-AUG-21		
Manganese (Mn)-Dissolved	0.00284		0.00010	mg/L	11-AUG-21		
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L	11-AUG-21	0.073	0.04
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	11-AUG-21	0.025	0.025
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	11-AUG-21		**0.01
Potassium (K)-Dissolved	0.567		0.050	mg/L	11-AUG-21		
Rubidium (Rb)-Dissolved	0.00080		0.00020	mg/L	11-AUG-21		
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L	11-AUG-21	0.001	0.1
Silicon (Si)-Dissolved	1.08		0.050	mg/L	11-AUG-21		
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	11-AUG-21	0.0001	0.0001
Sodium (Na)-Dissolved	0.548		0.050	mg/L	11-AUG-21		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2623628-1 NDR-P-04							
Sampled By: TB/MG on 05-AUG-21 @ 09:00							
Matrix: WATER							
Dissolved Metals							
Strontium (Sr)-Dissolved	0.0304		0.00010	mg/L	11-AUG-21		
Sulfur (S)-Dissolved	<0.50		0.50	mg/L	11-AUG-21		
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	11-AUG-21		
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	11-AUG-21	0.0008	0.0003
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	11-AUG-21		
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	11-AUG-21		
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	11-AUG-21		
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	11-AUG-21		0.03
Uranium (U)-Dissolved	<0.000010		0.000010	mg/L	11-AUG-21		0.005
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	11-AUG-21		0.006
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	11-AUG-21	0.03	0.02
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	11-AUG-21		0.004
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000028		0.000020	ug/L	30-AUG-21		
L2623628-2 NDR-P-02A							
Sampled By: TB/MG on 05-AUG-21 @ 10:00							
Matrix: WATER							
Physical Tests							
Conductivity	148		1.0	umhos/cm	09-AUG-21		
Hardness (as CaCO3)	76.3	HTC	0.50	mg/L	09-AUG-21		
pH	8.28		0.10	pH units	07-AUG-21	6.5-9.0	6.5-8.5
Total Suspended Solids	<3.0		3.0	mg/L	10-AUG-21		
Total Dissolved Solids	100	DLDS	13	mg/L	09-AUG-21		
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	74.8		1.0	mg/L	07-AUG-21		
Ammonia, Total (as N)	0.019		0.010	mg/L	10-AUG-21		
Bromide (Br)	<0.10		0.10	mg/L	09-AUG-21		
Chloride (Cl)	<0.50		0.50	mg/L	09-AUG-21	120	
Fluoride (F)	0.023		0.020	mg/L	09-AUG-21	0.12	
Nitrate (as N)	<0.020		0.020	mg/L	09-AUG-21	3	
Nitrite (as N)	<0.010		0.010	mg/L	09-AUG-21	0.06	
Phosphorus (P)-Total	0.0121		0.0010	mg/L	11-AUG-21		*0.01
Sulfate (SO4)	<0.30		0.30	mg/L	09-AUG-21		
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L	16-AUG-21		
Cyanide, Total	<0.0020		0.0020	mg/L	16-AUG-21		
Cyanide, Free	<0.0020		0.0020	mg/L	16-AUG-21	0.005	
Inorganic Parameters							
Acidity (as CaCO3)	<2.0		2.0	mg/L	07-AUG-21		
Total Metals							
Aluminum (Al)-Total	0.0310		0.0050	mg/L	09-AUG-21	*0.005	*0.015
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	09-AUG-21		0.02
Arsenic (As)-Total	0.00087		0.00010	mg/L	09-AUG-21	0.005	0.005
Barium (Ba)-Total	0.00377		0.00010	mg/L	09-AUG-21		
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	09-AUG-21		0.011

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2623628-2 NDR-P-02A Sampled By: TB/MG on 05-AUG-21 @ 10:00 Matrix: WATER							
Total Metals							
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	09-AUG-21		
Boron (B)-Total	<0.010		0.010	mg/L	09-AUG-21		0.2
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	09-AUG-21	0.00004	0.0001
Calcium (Ca)-Total	23.2		0.050	mg/L	09-AUG-21		
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	09-AUG-21		
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	09-AUG-21	0.001	
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	09-AUG-21		0.0009
Copper (Cu)-Total	<0.00050		0.00050	mg/L	09-AUG-21	0.002	0.001
Iron (Fe)-Total	0.087		0.010	mg/L	09-AUG-21	0.3	0.3
Lead (Pb)-Total	0.000087		0.000050	mg/L	09-AUG-21	0.001	0.001
Lithium (Li)-Total	<0.0010		0.0010	mg/L	09-AUG-21		
Magnesium (Mg)-Total	4.48		0.0050	mg/L	09-AUG-21		
Manganese (Mn)-Total	0.0117		0.00050	mg/L	09-AUG-21		
Mercury (Hg)-Total	0.00052		0.00050	ug/L	16-AUG-21	0.026	0.2
Molybdenum (Mo)-Total	0.000077		0.000050	mg/L	09-AUG-21	0.073	0.04
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	09-AUG-21	0.025	0.025
Phosphorus (P)-Total	<0.050		0.050	mg/L	09-AUG-21		**0.01
Potassium (K)-Total	2.33		0.050	mg/L	09-AUG-21		
Rubidium (Rb)-Total	0.00240		0.00020	mg/L	09-AUG-21		
Selenium (Se)-Total	<0.000050		0.000050	mg/L	09-AUG-21	0.001	0.1
Silicon (Si)-Total	1.92		0.10	mg/L	09-AUG-21		
Silver (Ag)-Total	<0.000050		0.000050	mg/L	09-AUG-21	0.0001	0.0001
Sodium (Na)-Total	0.308		0.050	mg/L	09-AUG-21		
Strontium (Sr)-Total	0.0236		0.0010	mg/L	09-AUG-21		
Sulfur (S)-Total	<0.50		0.50	mg/L	09-AUG-21		
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	09-AUG-21		
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	09-AUG-21	0.0008	0.0003
Thorium (Th)-Total	<0.00010		0.00010	mg/L	09-AUG-21		
Tin (Sn)-Total	<0.00010		0.00010	mg/L	09-AUG-21		
Titanium (Ti)-Total	0.00107		0.00030	mg/L	09-AUG-21		
Tungsten (W)-Total	<0.00010		0.00010	mg/L	09-AUG-21		0.03
Uranium (U)-Total	<0.000010		0.000010	mg/L	09-AUG-21		0.005
Vanadium (V)-Total	<0.00050		0.00050	mg/L	09-AUG-21		0.006
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	09-AUG-21	0.03	0.02
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	09-AUG-21		0.004
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD			No Unit	12-AUG-21		
Aluminum (Al)-Dissolved	0.0044		0.0010	mg/L	12-AUG-21	0.005	0.015
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	12-AUG-21		0.02
Arsenic (As)-Dissolved	0.00084		0.00010	mg/L	12-AUG-21	0.005	0.005
Barium (Ba)-Dissolved	0.00344		0.00010	mg/L	12-AUG-21		
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	12-AUG-21		0.011
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	12-AUG-21		
Boron (B)-Dissolved	0.011		0.010	mg/L	12-AUG-21		0.2
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	12-AUG-21	0.00004	0.0001

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Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2		
L2623628-2	NDR-P-02A									
Sampled By:	TB/MG on 05-AUG-21 @ 10:00									
Matrix:	WATER									
Dissolved Metals										
	Calcium (Ca)-Dissolved	23.4		0.050	mg/L	12-AUG-21				
	Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	12-AUG-21				
	Chromium (Cr)-Dissolved	0.00011		0.00010	mg/L	12-AUG-21	0.001			
	Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	12-AUG-21		0.0009		
	Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	12-AUG-21	0.002	0.001		
	Iron (Fe)-Dissolved	0.034		0.010	mg/L	12-AUG-21	0.3	0.3		
	Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	12-AUG-21	0.001	0.001		
	Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	12-AUG-21				
	Magnesium (Mg)-Dissolved	4.30		0.0050	mg/L	12-AUG-21				
	Manganese (Mn)-Dissolved	0.00451		0.00010	mg/L	12-AUG-21				
	Molybdenum (Mo)-Dissolved	0.000067		0.000050	mg/L	12-AUG-21	0.073	0.04		
	Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	12-AUG-21	0.025	0.025		
	Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	12-AUG-21		**0.01		
	Potassium (K)-Dissolved	2.35		0.050	mg/L	12-AUG-21				
	Rubidium (Rb)-Dissolved	0.00227		0.00020	mg/L	12-AUG-21				
	Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L	12-AUG-21	0.001	0.1		
	Silicon (Si)-Dissolved	1.70		0.050	mg/L	12-AUG-21				
	Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	12-AUG-21	0.0001	0.0001		
	Sodium (Na)-Dissolved	0.269		0.050	mg/L	12-AUG-21				
	Strontium (Sr)-Dissolved	0.0228		0.00010	mg/L	12-AUG-21				
	Sulfur (S)-Dissolved	<0.50		0.50	mg/L	12-AUG-21				
	Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	12-AUG-21				
	Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	12-AUG-21	0.0008	0.0003		
	Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	12-AUG-21				
	Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	12-AUG-21				
	Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	12-AUG-21				
	Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	12-AUG-21		0.03		
	Uranium (U)-Dissolved	<0.000010		0.000010	mg/L	12-AUG-21		0.005		
	Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	12-AUG-21		0.006		
	Zinc (Zn)-Dissolved	0.0010		0.0010	mg/L	12-AUG-21	0.03	0.02		
	Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	12-AUG-21		0.004		
Speciated Metals										
	Methylmercury (as MeHg)-Total	0.000026		0.000020	ug/L	30-AUG-21				
L2623628-3	NDR-P-03									
Sampled By:	TB/MG on 05-AUG-21 @ 09:00									
Matrix:	WATER									
							#1	#2		
Physical Tests										
	Conductivity	80.8		1.0	umhos/cm	09-AUG-21				
	Hardness (as CaCO3)	43.1	HTC	0.50	mg/L	09-AUG-21				
	pH	7.94		0.10	pH units	07-AUG-21	6.5-9.0	6.5-8.5		
	Total Suspended Solids	<3.0		3.0	mg/L	10-AUG-21				
	Total Dissolved Solids	66	DLDS	13	mg/L	09-AUG-21				
Anions and Nutrients										
	Alkalinity, Total (as CaCO3)	42.4		1.0	mg/L	07-AUG-21				
	Ammonia, Total (as N)	<0.010		0.010	mg/L	10-AUG-21				

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Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL) **#2: Ontario PWQO 1994 Guidelines**

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2623628-3 NDR-P-03							
Sampled By: TB/MG on 05-AUG-21 @ 09:00							
Matrix: WATER							
Anions and Nutrients							
Bromide (Br)	<0.10		0.10	mg/L	09-AUG-21		
Chloride (Cl)	<0.50		0.50	mg/L	09-AUG-21	120	
Fluoride (F)	0.021		0.020	mg/L	09-AUG-21	0.12	
Nitrate (as N)	<0.020		0.020	mg/L	09-AUG-21	3	
Nitrite (as N)	<0.010		0.010	mg/L	09-AUG-21	0.06	
Phosphorus (P)-Total	0.0131		0.0010	mg/L	11-AUG-21		*0.01
Sulfate (SO4)	<0.30		0.30	mg/L	09-AUG-21		
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L	11-AUG-21		
Cyanide, Total	<0.0020		0.0020	mg/L	11-AUG-21		
Cyanide, Free	<0.0020		0.0020	mg/L	11-AUG-21	0.005	
Inorganic Parameters							
Acidity (as CaCO3)	<2.0		2.0	mg/L	07-AUG-21		
Total Metals							
Aluminum (Al)-Total	0.0256		0.0050	mg/L	09-AUG-21	*0.005	*0.015
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	09-AUG-21		0.02
Arsenic (As)-Total	0.00030		0.00010	mg/L	09-AUG-21	0.005	0.005
Barium (Ba)-Total	0.00167		0.00010	mg/L	09-AUG-21		
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	09-AUG-21		0.011
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	09-AUG-21		
Boron (B)-Total	<0.010		0.010	mg/L	09-AUG-21		0.2
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	09-AUG-21	0.00004	0.0001
Calcium (Ca)-Total	11.9		0.050	mg/L	09-AUG-21		
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	09-AUG-21		
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	09-AUG-21	0.001	
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	09-AUG-21		0.0009
Copper (Cu)-Total	<0.00050		0.00050	mg/L	09-AUG-21	0.002	0.001
Iron (Fe)-Total	0.034		0.010	mg/L	09-AUG-21	0.3	0.3
Lead (Pb)-Total	<0.000050		0.000050	mg/L	09-AUG-21	0.001	0.001
Lithium (Li)-Total	<0.0010		0.0010	mg/L	09-AUG-21		
Magnesium (Mg)-Total	3.25		0.0050	mg/L	09-AUG-21		
Manganese (Mn)-Total	0.0147		0.00050	mg/L	09-AUG-21		
Mercury (Hg)-Total	0.00071		0.00050	ug/L	16-AUG-21	0.026	0.2
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L	09-AUG-21	0.073	0.04
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	09-AUG-21	0.025	0.025
Phosphorus (P)-Total	<0.050		0.050	mg/L	09-AUG-21		**0.01
Potassium (K)-Total	0.313		0.050	mg/L	09-AUG-21		
Rubidium (Rb)-Total	0.00058		0.00020	mg/L	09-AUG-21		
Selenium (Se)-Total	0.000068		0.000050	mg/L	09-AUG-21	0.001	0.1
Silicon (Si)-Total	0.26		0.10	mg/L	09-AUG-21		
Silver (Ag)-Total	<0.000050		0.000050	mg/L	09-AUG-21	0.0001	0.0001
Sodium (Na)-Total	0.552		0.050	mg/L	09-AUG-21		
Strontium (Sr)-Total	0.0178		0.0010	mg/L	09-AUG-21		
Sulfur (S)-Total	<0.50		0.50	mg/L	09-AUG-21		
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	09-AUG-21		

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Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2623628-3 NDR-P-03							
Sampled By: TB/MG on 05-AUG-21 @ 09:00							
Matrix: WATER							
Total Metals							
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	09-AUG-21	0.0008	0.0003
Thorium (Th)-Total	<0.00010		0.00010	mg/L	09-AUG-21		
Tin (Sn)-Total	<0.00010		0.00010	mg/L	09-AUG-21		
Titanium (Ti)-Total	<0.00030		0.00030	mg/L	09-AUG-21		
Tungsten (W)-Total	<0.00010		0.00010	mg/L	09-AUG-21		0.03
Uranium (U)-Total	0.000010		0.000010	mg/L	09-AUG-21		0.005
Vanadium (V)-Total	<0.00050		0.00050	mg/L	09-AUG-21		0.006
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	09-AUG-21	0.03	0.02
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	09-AUG-21		0.004
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD			No Unit	12-AUG-21		
Aluminum (Al)-Dissolved	0.0184		0.0010	mg/L	12-AUG-21	*0.005	*0.015
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	12-AUG-21		0.02
Arsenic (As)-Dissolved	0.00027		0.00010	mg/L	12-AUG-21	0.005	0.005
Barium (Ba)-Dissolved	0.00127		0.00010	mg/L	12-AUG-21		
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	12-AUG-21		0.011
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	12-AUG-21		
Boron (B)-Dissolved	<0.010		0.010	mg/L	12-AUG-21		0.2
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	12-AUG-21	0.00004	0.0001
Calcium (Ca)-Dissolved	11.7		0.050	mg/L	12-AUG-21		
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	12-AUG-21		
Chromium (Cr)-Dissolved	<0.00010		0.00010	mg/L	12-AUG-21	0.001	
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	12-AUG-21		0.0009
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	12-AUG-21	0.002	0.001
Iron (Fe)-Dissolved	<0.010		0.010	mg/L	12-AUG-21	0.3	0.3
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	12-AUG-21	0.001	0.001
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	12-AUG-21		
Magnesium (Mg)-Dissolved	3.06		0.0050	mg/L	12-AUG-21		
Manganese (Mn)-Dissolved	0.00063		0.00010	mg/L	12-AUG-21		
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L	12-AUG-21	0.073	0.04
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	12-AUG-21	0.025	0.025
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	12-AUG-21		**0.01
Potassium (K)-Dissolved	0.315		0.050	mg/L	12-AUG-21		
Rubidium (Rb)-Dissolved	0.00055		0.00020	mg/L	12-AUG-21		
Selenium (Se)-Dissolved	0.000059		0.000050	mg/L	12-AUG-21	0.001	0.1
Silicon (Si)-Dissolved	0.213		0.050	mg/L	12-AUG-21		
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	12-AUG-21	0.0001	0.0001
Sodium (Na)-Dissolved	0.490		0.050	mg/L	12-AUG-21		
Strontium (Sr)-Dissolved	0.0172		0.00010	mg/L	12-AUG-21		
Sulfur (S)-Dissolved	<0.50		0.50	mg/L	12-AUG-21		
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	12-AUG-21		
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	12-AUG-21	0.0008	0.0003
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	12-AUG-21		
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	12-AUG-21		
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	12-AUG-21		
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	12-AUG-21		0.03

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Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2		
L2623628-3 NDR-P-03 Sampled By: TB/MG on 05-AUG-21 @ 09:00 Matrix: WATER									
Dissolved Metals									
Uranium (U)-Dissolved	0.000011		0.000010	mg/L	12-AUG-21		0.005		
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	12-AUG-21		0.006		
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	12-AUG-21	0.03	0.02		
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	12-AUG-21		0.004		
Speciated Metals									
Methylmercury (as MeHg)-Total	0.000034		0.000020	ug/L	30-AUG-21				
Radiological Parameters									
Ra-226	<0.011	DLRC	0.011	Bq/L	09-SEP-21				

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Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLRC	Detection Limit Raised for RadioChemistry test due to sample matrix (e.g. high TDS) or instrument detector conditions.
HTC	Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
ACIDITY-WT	Water	Acidity (as CaCO3)	APHA 2310 B - Potentiometric Titration
ALK-WT	Water	Alkalinity, Total (as CaCO3)	APHA 2320B

This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint.

BR-IC-N-WT	Water	Bromide in Water by IC	EPA 300.1 (mod)

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

CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)

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

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-FREE-CFA-WT	Water	Free Cyanide in water by CFA	ASTM 7237

This analysis is carried out using procedures adapted from ASTM Method 7237 "Free Cyanide with Flow Injection Analysis (FIA) Utilizing Gas Diffusion Separation and Amperometric Detection". Free cyanide is determined by in-line gas diffusion at pH 6 with final determination by colourimetric analysis.

CN-TOT-WT	Water	Cyanide, Total	ISO 14403-2

Total cyanide is determined by the combination of UV digestion and distillation. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

When using this method, high levels of thiocyanate in samples can cause false positives at ~1-2% of the thiocyanate concentration. For samples with detectable cyanide analyzed by this method, ALS recommends analysis for thiocyanate to check for this potential interference

CN-WAD-WT	Water	Cyanide, Weak Acid Diss	APHA 4500CN I-Weak acid Dist Colorimet

Weak acid dissociable cyanide (WAD) is determined by undergoing a distillation procedure. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

EC-SCREEN-WT	Water	Conductivity Screen (Internal Use Only)	APHA 2510

Qualitative analysis of conductivity where required during preparation of other tests - e.g. TDS, metals, etc.

EC-WT	Water	Conductivity	APHA 2510 B

Water samples can be measured directly by immersing the conductivity cell into the sample.

F-IC-N-WT	Water	Fluoride in Water by IC	EPA 300.1 (mod)

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

HARDNESS-CALC-WT	Water	Hardness	APHA 2340 B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-T-U-CVAF-VA	Water	Total Mercury in Water by CVAFS (Ultra)	EPA 1631 REV. E

This analysis is carried out using procedures adapted from Method 1631 Rev. E. by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to a purge and trap concentration step and final reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry.

MEHG-T-GCAF-VA	Water	Total Methylmercury in Water by GCAFS	EPA 1630

This method follows Method 1630 of the US EPA. Samples are distilled under an inert gas flow to isolate methylmercury and minimize matrix interferences. The distillate is analyzed by aqueous phase ethylation, purge and trap, desorption and GC separation. The separated species are then pyrolized to elemental Hg and quantified by cold vapour atomic flourescence spectroscopy. Results are reported "as MeHg".

MET-D-CCMS-WP	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020B (mod)

Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

Reference Information

MET-T-CCMS-WT	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

NH3-F-WT	Water	Ammonia in Water by Fluorescence	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NO2-IC-WT	Water	Nitrite in Water by IC	EPA 300.1 (mod)

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

NO3-IC-WT	Water	Nitrate in Water by IC	EPA 300.1 (mod)

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

P-T-L-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS-L

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.

PH-WT	Water	pH	APHA 4500 H-Electrode

Water samples are analyzed directly by a calibrated pH meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days

RA226-MMER-FC	Water	Ra226 by Alpha Scint, MDC=0.01 Bq/L	EPA 903.1
SO4-IC-N-WT	Water	Sulfate in Water by IC	EPA 300.1 (mod)

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

SOLIDS-TDS-WT	Water	Total Dissolved Solids	APHA 2540C

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

SOLIDS-TSS-WT	Water	Suspended solids	APHA 2540 D-Gravimetric

A well-mixed sample is filtered through a weighed standard glass fibre filter and the residue retained is dried in an oven at 104–1°C for a minimum of four hours or until a constant weight is achieved.

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

Chain of Custody numbers:

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

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA	FC	ALS ENVIRONMENTAL - FORT COLLINS, COLORADO, USA
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA	VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2623628 Report Date: 21-SEP-21

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ACIDITY-WT	**Water**							
Batch R5546355								
WG3592473-3 DUP		**L2623628-3**						
Acidity (as CaCO3)		<2.0	<2.0	RPD-NA	mg/L	N/A	20	07-AUG-21
WG3592473-2 LCS								
Acidity (as CaCO3)			102.6		%		85-115	07-AUG-21
WG3592473-1 MB								
Acidity (as CaCO3)			<2.0		mg/L		2	07-AUG-21
ALK-WT	**Water**							
Batch R5546512								
WG3592469-4 DUP		**WG3592469-3**						
Alkalinity, Total (as CaCO3)		254	253		mg/L	0.2	20	07-AUG-21
WG3592469-2 LCS								
Alkalinity, Total (as CaCO3)			92.3		%		85-115	07-AUG-21
WG3592469-1 MB								
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	07-AUG-21
BR-IC-N-WT	**Water**							
Batch R5547060								
WG3593174-15 DUP		**WG3593174-13**						
Bromide (Br)		<0.10	<0.10	RPD-NA	mg/L	N/A	20	09-AUG-21
WG3593174-12 LCS								
Bromide (Br)			106.8		%		85-115	09-AUG-21
WG3593174-11 MB								
Bromide (Br)			<0.10		mg/L		0.1	09-AUG-21
WG3593174-14 MS		**WG3593174-13**						
Bromide (Br)			105.3		%		75-125	09-AUG-21
CL-IC-N-WT	**Water**							
Batch R5547060								
WG3593174-15 DUP		**WG3593174-13**						
Chloride (Cl)		<0.50	<0.50	RPD-NA	mg/L	N/A	20	09-AUG-21
WG3593174-12 LCS								
Chloride (Cl)			101.6		%		90-110	09-AUG-21
WG3593174-11 MB								
Chloride (Cl)			<0.50		mg/L		0.5	09-AUG-21
WG3593174-14 MS		**WG3593174-13**						
Chloride (Cl)			101.1		%		75-125	09-AUG-21
CN-FREE-CFA-WT	**Water**							

Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-FREE-CFA-WT	**Water**							
Batch R5548992								
WG3594886-10 DUP		**WG3594886-8**						
Cyanide, Free		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	11-AUG-21
WG3594886-15 DUP		**WG3594886-13**						
Cyanide, Free		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	11-AUG-21
WG3594886-12 LCS								
Cyanide, Free			91.6		%		80-120	11-AUG-21
WG3594886-7 LCS								
Cyanide, Free			93.3		%		80-120	11-AUG-21
WG3594886-11 MB								
Cyanide, Free			<0.0020		mg/L		0.002	11-AUG-21
WG3594886-6 MB								
Cyanide, Free			<0.0020		mg/L		0.002	11-AUG-21
WG3594886-14 MS		**WG3594886-13**						
Cyanide, Free			105.5		%		75-125	11-AUG-21
WG3594886-9 MS		**WG3594886-8**						
Cyanide, Free			107.0		%		75-125	11-AUG-21
Batch R5551836								
WG3597929-3 DUP		**WG3597929-5**						
Cyanide, Free		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	16-AUG-21
WG3597929-2 LCS								
Cyanide, Free			97.9		%		80-120	16-AUG-21
WG3597929-1 MB								
Cyanide, Free			<0.0020		mg/L		0.002	16-AUG-21
WG3597929-4 MS		**WG3597929-5**						
Cyanide, Free			105.9		%		75-125	16-AUG-21
CN-TOT-WT	**Water**							
Batch R5548992								
WG3594886-10 DUP		**WG3594886-8**						
Cyanide, Total		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	11-AUG-21
WG3594886-15 DUP		**WG3594886-13**						
Cyanide, Total		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	11-AUG-21
WG3594886-12 LCS								
Cyanide, Total			90.8		%		80-120	11-AUG-21
WG3594886-7 LCS								
Cyanide, Total			93.5		%		80-120	11-AUG-21
WG3594886-11 MB								
Cyanide, Total			<0.0020		mg/L		0.002	11-AUG-21
WG3594886-6 MB								

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-TOT-WT	**Water**							
Batch R5548992								
WG3594886-6 MB								
Cyanide, Total			<0.0020		mg/L		0.002	11-AUG-21
WG3594886-14 MS		**WG3594886-13**						
Cyanide, Total			93.2		%		70-130	11-AUG-21
WG3594886-9 MS		**WG3594886-8**						
Cyanide, Total			88.0		%		70-130	11-AUG-21
Batch R5551836								
WG3597929-3 DUP		**WG3597929-5**						
Cyanide, Total		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	16-AUG-21
WG3597929-2 LCS								
Cyanide, Total			101.4		%		80-120	16-AUG-21
WG3597929-1 MB								
Cyanide, Total			<0.0020		mg/L		0.002	16-AUG-21
WG3597929-4 MS		**WG3597929-5**						
Cyanide, Total			106.3		%		70-130	16-AUG-21
CN-WAD-WT	**Water**							
Batch R5548992								
WG3594886-10 DUP		**WG3594886-8**						
Cyanide, Weak Acid Diss		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	11-AUG-21
WG3594886-15 DUP		**WG3594886-13**						
Cyanide, Weak Acid Diss		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	11-AUG-21
WG3594886-12 LCS								
Cyanide, Weak Acid Diss			109.8		%		80-120	11-AUG-21
WG3594886-7 LCS								
Cyanide, Weak Acid Diss			106.8		%		80-120	11-AUG-21
WG3594886-11 MB								
Cyanide, Weak Acid Diss			<0.0020		mg/L		0.002	11-AUG-21
WG3594886-6 MB								
Cyanide, Weak Acid Diss			<0.0020		mg/L		0.002	11-AUG-21
WG3594886-14 MS		**WG3594886-13**						
Cyanide, Weak Acid Diss			114.6		%		75-125	11-AUG-21
WG3594886-9 MS		**WG3594886-8**						
Cyanide, Weak Acid Diss			113.9		%		75-125	11-AUG-21
Batch R5551836								
WG3597929-3 DUP		**WG3597929-5**						
Cyanide, Weak Acid Diss		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	16-AUG-21
WG3597929-2 LCS								
Cyanide, Weak Acid Diss			100.7		%		80-120	16-AUG-21

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-WAD-WT	**Water**							
Batch R5551836								
WG3597929-1 MB								
Cyanide, Weak Acid Diss			<0.0020		mg/L		0.002	16-AUG-21
WG3597929-4 MS		**WG3597929-5**						
Cyanide, Weak Acid Diss			107.6		%		75-125	16-AUG-21
EC-WT	**Water**							
Batch R5547043								
WG3592921-4 DUP		**WG3592921-3**						
Conductivity		474	485		umhos/cm	2.3	10	09-AUG-21
WG3592921-2 LCS								
Conductivity			96.6		%		90-110	09-AUG-21
WG3592921-1 MB								
Conductivity			<1.0		umhos/cm		1	09-AUG-21
F-IC-N-WT	**Water**							
Batch R5547060								
WG3593174-15 DUP		**WG3593174-13**						
Fluoride (F)		0.021	0.020		mg/L	0.9	20	09-AUG-21
WG3593174-12 LCS								
Fluoride (F)			104.8		%		90-110	09-AUG-21
WG3593174-11 MB								
Fluoride (F)			<0.020		mg/L		0.02	09-AUG-21
WG3593174-14 MS		**WG3593174-13**						
Fluoride (F)			104.3		%		75-125	09-AUG-21
HG-T-U-CVAF-VA	**Water**							
Batch R5553002								
WG3598324-3 DUP		**L2617704-12**						
Mercury (Hg)-Total		<0.00050	<0.00050	RPD-NA	ug/L	N/A	20	16-AUG-21
WG3598324-2 LCS								
Mercury (Hg)-Total			105.6		%		80-120	16-AUG-21
WG3598324-1 MB								
Mercury (Hg)-Total			<0.00050		ug/L		0.0005	16-AUG-21
MEHG-T-GCAF-VA	**Water**							
Batch R5572443								
WG3607926-2 DUP		**L2623617-7**						
Methylmercury (as MeHg)-Total		0.000059	0.000049		ug/L	19	20	30-AUG-21
WG3607926-3 LCS								
Methylmercury (as MeHg)-Total			80.8		%		70-130	30-AUG-21
WG3607926-1 MB								

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MEHG-T-GCAF-VA	**Water**							
Batch R5572443								
WG3607926-1 MB								
Methylmercury (as MeHg)-Total			<0.000020		ug/L		0.00002	30-AUG-21
WG3607926-4 MS		**L2623617-8**						
Methylmercury (as MeHg)-Total			92.5		%		70-130	30-AUG-21
MET-D-CCMS-WP	**Water**							
Batch R5549823								
WG3595156-4 DUP		**WG3595156-3**						
Aluminum (Al)-Dissolved		0.0371	0.0361		mg/L	2.7	20	11-AUG-21
Antimony (Sb)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	11-AUG-21
Arsenic (As)-Dissolved		0.00014	0.00012		mg/L	10	20	11-AUG-21
Barium (Ba)-Dissolved		0.00117	0.00112		mg/L	4.4	20	11-AUG-21
Beryllium (Be)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	11-AUG-21
Bismuth (Bi)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	11-AUG-21
Boron (B)-Dissolved		<0.010	<0.010	RPD-NA	mg/L	N/A	20	11-AUG-21
Cadmium (Cd)-Dissolved		<0.0000050	<0.000005C	RPD-NA	mg/L	N/A	20	11-AUG-21
Calcium (Ca)-Dissolved		1.49	1.50		mg/L	0.4	20	11-AUG-21
Cesium (Cs)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	11-AUG-21
Chromium (Cr)-Dissolved		0.00011	0.00011		mg/L	7.0	20	11-AUG-21
Cobalt (Co)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	11-AUG-21
Copper (Cu)-Dissolved		0.00060	0.00057		mg/L	5.1	20	11-AUG-21
Iron (Fe)-Dissolved		0.031	0.029		mg/L	3.5	20	11-AUG-21
Lead (Pb)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	11-AUG-21
Lithium (Li)-Dissolved		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	11-AUG-21
Magnesium (Mg)-Dissolved		0.616	0.595		mg/L	3.5	20	11-AUG-21
Manganese (Mn)-Dissolved		0.00930	0.00903		mg/L	2.9	20	11-AUG-21
Molybdenum (Mo)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	11-AUG-21
Nickel (Ni)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	11-AUG-21
Phosphorus (P)-Dissolved		<0.030	<0.030	RPD-NA	mg/L	N/A	20	11-AUG-21
Potassium (K)-Dissolved		0.203	0.199		mg/L	2.1	20	11-AUG-21
Rubidium (Rb)-Dissolved		0.00026	0.00025		mg/L	6.3	20	11-AUG-21
Selenium (Se)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	11-AUG-21
Silicon (Si)-Dissolved		0.661	0.641		mg/L	3.0	20	11-AUG-21
Silver (Ag)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	11-AUG-21
Sodium (Na)-Dissolved		1.75	1.67		mg/L	4.7	20	11-AUG-21

Quality Control Report

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Mississauga ON L4Z 3K7
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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5549823								
WG3595156-4 DUP		**WG3595156-3**						
Strontium (Sr)-Dissolved		0.00520	0.00519		mg/L	0.2	20	11-AUG-21
Sulfur (S)-Dissolved		<0.50	<0.50	RPD-NA	mg/L	N/A	20	11-AUG-21
Tellurium (Te)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	11-AUG-21
Thallium (Tl)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	11-AUG-21
Thorium (Th)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	11-AUG-21
Tin (Sn)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	11-AUG-21
Titanium (Ti)-Dissolved		0.00030	<0.00030	RPD-NA	mg/L	N/A	20	11-AUG-21
Tungsten (W)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	11-AUG-21
Uranium (U)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	11-AUG-21
Vanadium (V)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	11-AUG-21
Zinc (Zn)-Dissolved		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	11-AUG-21
Zirconium (Zr)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	11-AUG-21
WG3595156-2 LCS								
Aluminum (Al)-Dissolved			101.6		%		80-120	11-AUG-21
Antimony (Sb)-Dissolved			96.9		%		80-120	11-AUG-21
Arsenic (As)-Dissolved			99.3		%		80-120	11-AUG-21
Barium (Ba)-Dissolved			100.3		%		80-120	11-AUG-21
Beryllium (Be)-Dissolved			101.3		%		80-120	11-AUG-21
Bismuth (Bi)-Dissolved			98.3		%		80-120	11-AUG-21
Boron (B)-Dissolved			96.1		%		80-120	11-AUG-21
Cadmium (Cd)-Dissolved			99.7		%		80-120	11-AUG-21
Calcium (Ca)-Dissolved			100.7		%		80-120	11-AUG-21
Cesium (Cs)-Dissolved			100.3		%		80-120	11-AUG-21
Chromium (Cr)-Dissolved			101.6		%		80-120	11-AUG-21
Cobalt (Co)-Dissolved			97.4		%		80-120	11-AUG-21
Copper (Cu)-Dissolved			99.4		%		80-120	11-AUG-21
Iron (Fe)-Dissolved			98.5		%		80-120	11-AUG-21
Lead (Pb)-Dissolved			100.5		%		80-120	11-AUG-21
Lithium (Li)-Dissolved			104.8		%		80-120	11-AUG-21
Magnesium (Mg)-Dissolved			109.3		%		80-120	11-AUG-21
Manganese (Mn)-Dissolved			99.8		%		80-120	11-AUG-21
Molybdenum (Mo)-Dissolved			98.7		%		80-120	11-AUG-21
Nickel (Ni)-Dissolved			97.2		%		80-120	11-AUG-21

Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5549823								
WG3595156-2 LCS								
Phosphorus (P)-Dissolved			101.6		%		80-120	11-AUG-21
Potassium (K)-Dissolved			99.6		%		80-120	11-AUG-21
Rubidium (Rb)-Dissolved			97.0		%		80-120	11-AUG-21
Selenium (Se)-Dissolved			101.1		%		80-120	11-AUG-21
Silicon (Si)-Dissolved			98.2		%		80-120	11-AUG-21
Silver (Ag)-Dissolved			102.4		%		80-120	11-AUG-21
Sodium (Na)-Dissolved			103.1		%		80-120	11-AUG-21
Strontium (Sr)-Dissolved			98.1		%		80-120	11-AUG-21
Sulfur (S)-Dissolved			108.1		%		80-120	11-AUG-21
Tellurium (Te)-Dissolved			104.3		%		80-120	11-AUG-21
Thallium (Tl)-Dissolved			101.1		%		80-120	11-AUG-21
Thorium (Th)-Dissolved			95.0		%		80-120	11-AUG-21
Tin (Sn)-Dissolved			97.9		%		80-120	11-AUG-21
Titanium (Ti)-Dissolved			96.0		%		80-120	11-AUG-21
Tungsten (W)-Dissolved			102.3		%		80-120	11-AUG-21
Uranium (U)-Dissolved			97.8		%		80-120	11-AUG-21
Vanadium (V)-Dissolved			100.1		%		80-120	11-AUG-21
Zinc (Zn)-Dissolved			100.7		%		80-120	11-AUG-21
Zirconium (Zr)-Dissolved			93.0		%		80-120	11-AUG-21
WG3595156-1 MB								
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	11-AUG-21
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	11-AUG-21
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	11-AUG-21
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	11-AUG-21
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	11-AUG-21
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	11-AUG-21
Boron (B)-Dissolved			<0.010		mg/L		0.01	11-AUG-21
Cadmium (Cd)-Dissolved			<0.000005(		mg/L		0.000005	11-AUG-21
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	11-AUG-21
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	11-AUG-21
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	11-AUG-21
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	11-AUG-21
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	11-AUG-21
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	11-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
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Mississauga ON L4Z 3K7
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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5549823								
WG3595156-1 MB								
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	11-AUG-21
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	11-AUG-21
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	11-AUG-21
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	11-AUG-21
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	11-AUG-21
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	11-AUG-21
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	11-AUG-21
Potassium (K)-Dissolved			<0.050		mg/L		0.05	11-AUG-21
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	11-AUG-21
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	11-AUG-21
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	11-AUG-21
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	11-AUG-21
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	11-AUG-21
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	11-AUG-21
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	11-AUG-21
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	11-AUG-21
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	11-AUG-21
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	11-AUG-21
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	11-AUG-21
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	11-AUG-21
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	11-AUG-21
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	11-AUG-21
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	11-AUG-21
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	11-AUG-21
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	11-AUG-21
WG3595156-5 MS		**WG3595156-3**						
Aluminum (Al)-Dissolved			90.2		%		70-130	11-AUG-21
Antimony (Sb)-Dissolved			95.5		%		70-130	11-AUG-21
Arsenic (As)-Dissolved			92.6		%		70-130	11-AUG-21
Barium (Ba)-Dissolved			93.1		%		70-130	11-AUG-21
Beryllium (Be)-Dissolved			94.1		%		70-130	11-AUG-21
Bismuth (Bi)-Dissolved			76.0		%		70-130	11-AUG-21
Boron (B)-Dissolved			95.9		%		70-130	11-AUG-21
Cadmium (Cd)-Dissolved			92.4		%		70-130	11-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5549823								
WG3595156-5 MS		**WG3595156-3**						
Calcium (Ca)-Dissolved			92.6		%		70-130	11-AUG-21
Cesium (Cs)-Dissolved			91.1		%		70-130	11-AUG-21
Chromium (Cr)-Dissolved			91.5		%		70-130	11-AUG-21
Cobalt (Co)-Dissolved			90.5		%		70-130	11-AUG-21
Copper (Cu)-Dissolved			91.0		%		70-130	11-AUG-21
Iron (Fe)-Dissolved			92.6		%		70-130	11-AUG-21
Lead (Pb)-Dissolved			83.1		%		70-130	11-AUG-21
Lithium (Li)-Dissolved			97.5		%		70-130	11-AUG-21
Magnesium (Mg)-Dissolved			88.0		%		70-130	11-AUG-21
Manganese (Mn)-Dissolved			90.0		%		70-130	11-AUG-21
Molybdenum (Mo)-Dissolved			90.2		%		70-130	11-AUG-21
Nickel (Ni)-Dissolved			91.0		%		70-130	11-AUG-21
Phosphorus (P)-Dissolved			92.3		%		70-130	11-AUG-21
Potassium (K)-Dissolved			92.0		%		70-130	11-AUG-21
Rubidium (Rb)-Dissolved			91.3		%		70-130	11-AUG-21
Selenium (Se)-Dissolved			93.2		%		70-130	11-AUG-21
Silicon (Si)-Dissolved			90.0		%		70-130	11-AUG-21
Silver (Ag)-Dissolved			92.7		%		70-130	11-AUG-21
Sodium (Na)-Dissolved			84.8		%		70-130	11-AUG-21
Strontium (Sr)-Dissolved			88.0		%		70-130	11-AUG-21
Sulfur (S)-Dissolved			92.5		%		70-130	11-AUG-21
Tellurium (Te)-Dissolved			91.8		%		70-130	11-AUG-21
Thallium (Tl)-Dissolved			86.4		%		70-130	11-AUG-21
Thorium (Th)-Dissolved			80.8		%		70-130	11-AUG-21
Tin (Sn)-Dissolved			91.2		%		70-130	11-AUG-21
Titanium (Ti)-Dissolved			93.2		%		70-130	11-AUG-21
Tungsten (W)-Dissolved			94.5		%		70-130	11-AUG-21
Uranium (U)-Dissolved			75.5		%		70-130	11-AUG-21
Vanadium (V)-Dissolved			90.8		%		70-130	11-AUG-21
Zinc (Zn)-Dissolved			92.7		%		70-130	11-AUG-21
Zirconium (Zr)-Dissolved			91.6		%		70-130	11-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5551783								
WG3596460-4 DUP		**WG3596460-3**						
Aluminum (Al)-Dissolved		0.0044	0.0043		mg/L	1.5	20	12-AUG-21
Antimony (Sb)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	12-AUG-21
Arsenic (As)-Dissolved		0.00084	0.00083		mg/L	1.0	20	12-AUG-21
Barium (Ba)-Dissolved		0.00344	0.00343		mg/L	0.5	20	12-AUG-21
Beryllium (Be)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	12-AUG-21
Bismuth (Bi)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	12-AUG-21
Boron (B)-Dissolved		0.011	0.011		mg/L	3.0	20	12-AUG-21
Cadmium (Cd)-Dissolved		<0.0000050	<0.000005(	RPD-NA	mg/L	N/A	20	12-AUG-21
Calcium (Ca)-Dissolved		23.4	23.1		mg/L	1.4	20	12-AUG-21
Cesium (Cs)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	12-AUG-21
Chromium (Cr)-Dissolved		0.00011	0.00011		mg/L	5.1	20	12-AUG-21
Cobalt (Co)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	12-AUG-21
Copper (Cu)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	12-AUG-21
Iron (Fe)-Dissolved		0.034	0.033		mg/L	2.4	20	12-AUG-21
Lead (Pb)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	12-AUG-21
Lithium (Li)-Dissolved		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	12-AUG-21
Magnesium (Mg)-Dissolved		4.30	4.18		mg/L	2.8	20	12-AUG-21
Manganese (Mn)-Dissolved		0.00451	0.00446		mg/L	1.2	20	12-AUG-21
Molybdenum (Mo)-Dissolved		0.000067	0.000074		mg/L	9.4	20	12-AUG-21
Nickel (Ni)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	12-AUG-21
Phosphorus (P)-Dissolved		<0.030	<0.030	RPD-NA	mg/L	N/A	20	12-AUG-21
Potassium (K)-Dissolved		2.35	2.29		mg/L	2.4	20	12-AUG-21
Rubidium (Rb)-Dissolved		0.00227	0.00227		mg/L	0.0	20	12-AUG-21
Selenium (Se)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	12-AUG-21
Silicon (Si)-Dissolved		1.70	1.69		mg/L	0.6	20	12-AUG-21
Silver (Ag)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	12-AUG-21
Sodium (Na)-Dissolved		0.269	0.263		mg/L	2.1	20	12-AUG-21
Strontium (Sr)-Dissolved		0.0228	0.0225		mg/L	1.2	20	12-AUG-21
Sulfur (S)-Dissolved		<0.50	<0.50	RPD-NA	mg/L	N/A	20	12-AUG-21
Tellurium (Te)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	12-AUG-21
Thallium (Tl)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	12-AUG-21
Thorium (Th)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	12-AUG-21
Tin (Sn)-Dissolved		<0.00010	<0.00010		mg/L			12-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5551783								
WG3596460-4 DUP		**WG3596460-3**						
Tin (Sn)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	12-AUG-21
Titanium (Ti)-Dissolved		<0.00030	<0.00030	RPD-NA	mg/L	N/A	20	12-AUG-21
Tungsten (W)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	12-AUG-21
Uranium (U)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	12-AUG-21
Vanadium (V)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	12-AUG-21
Zinc (Zn)-Dissolved		0.0010	<0.0010	RPD-NA	mg/L	N/A	20	12-AUG-21
Zirconium (Zr)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	12-AUG-21
WG3596460-2 LCS								
Aluminum (Al)-Dissolved			98.8		%		80-120	12-AUG-21
Antimony (Sb)-Dissolved			91.5		%		80-120	12-AUG-21
Arsenic (As)-Dissolved			99.3		%		80-120	12-AUG-21
Barium (Ba)-Dissolved			96.8		%		80-120	12-AUG-21
Beryllium (Be)-Dissolved			95.3		%		80-120	12-AUG-21
Bismuth (Bi)-Dissolved			94.5		%		80-120	12-AUG-21
Boron (B)-Dissolved			88.8		%		80-120	12-AUG-21
Cadmium (Cd)-Dissolved			94.0		%		80-120	12-AUG-21
Calcium (Ca)-Dissolved			98.8		%		80-120	12-AUG-21
Cesium (Cs)-Dissolved			98.6		%		80-120	12-AUG-21
Chromium (Cr)-Dissolved			97.0		%		80-120	12-AUG-21
Cobalt (Co)-Dissolved			96.3		%		80-120	12-AUG-21
Copper (Cu)-Dissolved			96.6		%		80-120	12-AUG-21
Iron (Fe)-Dissolved			92.0		%		80-120	12-AUG-21
Lead (Pb)-Dissolved			93.2		%		80-120	12-AUG-21
Lithium (Li)-Dissolved			95.8		%		80-120	12-AUG-21
Magnesium (Mg)-Dissolved			101.2		%		80-120	12-AUG-21
Manganese (Mn)-Dissolved			97.8		%		80-120	12-AUG-21
Molybdenum (Mo)-Dissolved			92.2		%		80-120	12-AUG-21
Nickel (Ni)-Dissolved			95.1		%		80-120	12-AUG-21
Phosphorus (P)-Dissolved			99.9		%		80-120	12-AUG-21
Potassium (K)-Dissolved			98.3		%		80-120	12-AUG-21
Rubidium (Rb)-Dissolved			100.8		%		80-120	12-AUG-21
Selenium (Se)-Dissolved			95.3		%		80-120	12-AUG-21
Silicon (Si)-Dissolved			95.6		%		80-120	12-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5551783								
WG3596460-2 LCS								
Silver (Ag)-Dissolved			91.5		%		80-120	12-AUG-21
Sodium (Na)-Dissolved			95.1		%		80-120	12-AUG-21
Strontium (Sr)-Dissolved			96.9		%		80-120	12-AUG-21
Sulfur (S)-Dissolved			83.6		%		80-120	12-AUG-21
Tellurium (Te)-Dissolved			91.2		%		80-120	12-AUG-21
Thallium (Tl)-Dissolved			93.0		%		80-120	12-AUG-21
Thorium (Th)-Dissolved			91.8		%		80-120	12-AUG-21
Tin (Sn)-Dissolved			94.3		%		80-120	12-AUG-21
Titanium (Ti)-Dissolved			94.7		%		80-120	12-AUG-21
Tungsten (W)-Dissolved			91.8		%		80-120	12-AUG-21
Uranium (U)-Dissolved			95.4		%		80-120	12-AUG-21
Vanadium (V)-Dissolved			98.1		%		80-120	12-AUG-21
Zinc (Zn)-Dissolved			98.2		%		80-120	12-AUG-21
Zirconium (Zr)-Dissolved			87.5		%		80-120	12-AUG-21
WG3596460-1 MB								
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	12-AUG-21
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	12-AUG-21
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	12-AUG-21
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	12-AUG-21
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	12-AUG-21
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	12-AUG-21
Boron (B)-Dissolved			<0.010		mg/L		0.01	12-AUG-21
Cadmium (Cd)-Dissolved			<0.000005(		mg/L		0.000005	12-AUG-21
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	12-AUG-21
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	12-AUG-21
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	12-AUG-21
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	12-AUG-21
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	12-AUG-21
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	12-AUG-21
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	12-AUG-21
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	12-AUG-21
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	12-AUG-21
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	12-AUG-21
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	12-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5551783								
WG3596460-1 MB								
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	12-AUG-21
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	12-AUG-21
Potassium (K)-Dissolved			<0.050		mg/L		0.05	12-AUG-21
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	12-AUG-21
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	12-AUG-21
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	12-AUG-21
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	12-AUG-21
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	12-AUG-21
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	12-AUG-21
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	12-AUG-21
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	12-AUG-21
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	12-AUG-21
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	12-AUG-21
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	12-AUG-21
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	12-AUG-21
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	12-AUG-21
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	12-AUG-21
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	12-AUG-21
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	12-AUG-21
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	12-AUG-21
WG3596460-5 MS		**WG3596460-3**						
Aluminum (Al)-Dissolved			84.4		%		70-130	12-AUG-21
Antimony (Sb)-Dissolved			86.5		%		70-130	12-AUG-21
Arsenic (As)-Dissolved			88.7		%		70-130	12-AUG-21
Barium (Ba)-Dissolved			84.7		%		70-130	12-AUG-21
Beryllium (Be)-Dissolved			83.4		%		70-130	12-AUG-21
Bismuth (Bi)-Dissolved			79.4		%		70-130	12-AUG-21
Boron (B)-Dissolved			72.6		%		70-130	12-AUG-21
Cadmium (Cd)-Dissolved			83.8		%		70-130	12-AUG-21
Calcium (Ca)-Dissolved			N/A	MS-B	%		-	12-AUG-21
Cesium (Cs)-Dissolved			85.4		%		70-130	12-AUG-21
Chromium (Cr)-Dissolved			84.1		%		70-130	12-AUG-21
Cobalt (Co)-Dissolved			83.5		%		70-130	12-AUG-21
Copper (Cu)-Dissolved			82.9		%		70-130	12-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5551783								
WG3596460-5 MS		**WG3596460-3**						
Iron (Fe)-Dissolved			84.2		%		70-130	12-AUG-21
Lead (Pb)-Dissolved			83.3		%		70-130	12-AUG-21
Lithium (Li)-Dissolved			82.5		%		70-130	12-AUG-21
Magnesium (Mg)-Dissolved			N/A	MS-B	%		-	12-AUG-21
Manganese (Mn)-Dissolved			82.4		%		70-130	12-AUG-21
Molybdenum (Mo)-Dissolved			81.6		%		70-130	12-AUG-21
Nickel (Ni)-Dissolved			82.3		%		70-130	12-AUG-21
Phosphorus (P)-Dissolved			87.3		%		70-130	12-AUG-21
Potassium (K)-Dissolved			85.8		%		70-130	12-AUG-21
Rubidium (Rb)-Dissolved			86.8		%		70-130	12-AUG-21
Selenium (Se)-Dissolved			86.4		%		70-130	12-AUG-21
Silicon (Si)-Dissolved			82.1		%		70-130	12-AUG-21
Silver (Ag)-Dissolved			80.1		%		70-130	12-AUG-21
Sodium (Na)-Dissolved			85.7		%		70-130	12-AUG-21
Strontium (Sr)-Dissolved			N/A	MS-B	%		-	12-AUG-21
Sulfur (S)-Dissolved			81.6		%		70-130	12-AUG-21
Tellurium (Te)-Dissolved			79.5		%		70-130	12-AUG-21
Thallium (Tl)-Dissolved			82.3		%		70-130	12-AUG-21
Thorium (Th)-Dissolved			85.3		%		70-130	12-AUG-21
Tin (Sn)-Dissolved			83.6		%		70-130	12-AUG-21
Titanium (Ti)-Dissolved			84.3		%		70-130	12-AUG-21
Tungsten (W)-Dissolved			84.9		%		70-130	12-AUG-21
Uranium (U)-Dissolved			82.2		%		70-130	12-AUG-21
Vanadium (V)-Dissolved			84.6		%		70-130	12-AUG-21
Zinc (Zn)-Dissolved			84.3		%		70-130	12-AUG-21
Zirconium (Zr)-Dissolved			81.2		%		70-130	12-AUG-21
MET-T-CCMS-WT	**Water**							
Batch R5546797								
WG3592691-24 DUP		**WG3592691-23**						
Aluminum (Al)-Total		0.0310	0.0259		mg/L	18	20	09-AUG-21
Antimony (Sb)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	09-AUG-21
Arsenic (As)-Total		0.00087	0.00087		mg/L	1.0	20	09-AUG-21
Barium (Ba)-Total		0.00377	0.00371		mg/L	1.4	20	09-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5546797								
WG3592691-24 DUP		**WG3592691-23**						
Beryllium (Be)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	09-AUG-21
Bismuth (Bi)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	09-AUG-21
Boron (B)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	09-AUG-21
Cadmium (Cd)-Total		<0.0000050	<0.000005(	RPD-NA	mg/L	N/A	20	09-AUG-21
Calcium (Ca)-Total		23.2	23.3		mg/L	0.7	20	09-AUG-21
Chromium (Cr)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	09-AUG-21
Cesium (Cs)-Total		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	09-AUG-21
Cobalt (Co)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	09-AUG-21
Copper (Cu)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	09-AUG-21
Iron (Fe)-Total		0.087	0.084		mg/L	3.4	20	09-AUG-21
Lead (Pb)-Total		0.000087	0.000090		mg/L	2.6	20	09-AUG-21
Lithium (Li)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	09-AUG-21
Magnesium (Mg)-Total		4.48	4.38		mg/L	2.2	20	09-AUG-21
Manganese (Mn)-Total		0.0117	0.0116		mg/L	0.9	20	09-AUG-21
Molybdenum (Mo)-Total		0.000077	0.000076		mg/L	2.1	20	09-AUG-21
Nickel (Ni)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	09-AUG-21
Phosphorus (P)-Total		<0.050	<0.050	RPD-NA	mg/L	N/A	20	09-AUG-21
Potassium (K)-Total		2.33	2.32		mg/L	0.7	20	09-AUG-21
Rubidium (Rb)-Total		0.00240	0.00214		mg/L	12	20	09-AUG-21
Selenium (Se)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	09-AUG-21
Silicon (Si)-Total		1.92	1.92		mg/L	0.2	20	09-AUG-21
Silver (Ag)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	09-AUG-21
Sodium (Na)-Total		0.308	0.301		mg/L	2.1	20	09-AUG-21
Strontium (Sr)-Total		0.0236	0.0240		mg/L	1.9	20	09-AUG-21
Sulfur (S)-Total		<0.50	<0.50	RPD-NA	mg/L	N/A	20	09-AUG-21
Thallium (Tl)-Total		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	09-AUG-21
Tellurium (Te)-Total		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	09-AUG-21
Thorium (Th)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	09-AUG-21
Tin (Sn)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	09-AUG-21
Titanium (Ti)-Total		0.00107	0.00095		mg/L	11	20	09-AUG-21
Tungsten (W)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	09-AUG-21
Uranium (U)-Total		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	09-AUG-21
Vanadium (V)-Total		<0.00050	<0.00050		mg/L			09-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5546797								
WG3592691-24 DUP		**WG3592691-23**						
Vanadium (V)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	09-AUG-21
Zinc (Zn)-Total		<0.0030	0.0031	RPD-NA	mg/L	N/A	20	09-AUG-21
Zirconium (Zr)-Total		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	09-AUG-21
WG3592691-22 LCS								
Aluminum (Al)-Total			97.2		%		80-120	09-AUG-21
Antimony (Sb)-Total			95.7		%		80-120	09-AUG-21
Arsenic (As)-Total			95.0		%		80-120	09-AUG-21
Barium (Ba)-Total			89.3		%		80-120	09-AUG-21
Beryllium (Be)-Total			98.4		%		80-120	09-AUG-21
Bismuth (Bi)-Total			92.4		%		80-120	09-AUG-21
Boron (B)-Total			95.8		%		80-120	09-AUG-21
Cadmium (Cd)-Total			97.0		%		80-120	09-AUG-21
Calcium (Ca)-Total			94.5		%		80-120	09-AUG-21
Chromium (Cr)-Total			95.5		%		80-120	09-AUG-21
Cesium (Cs)-Total			92.0		%		80-120	09-AUG-21
Cobalt (Co)-Total			97.3		%		80-120	09-AUG-21
Copper (Cu)-Total			94.7		%		80-120	09-AUG-21
Iron (Fe)-Total			95.5		%		80-120	09-AUG-21
Lead (Pb)-Total			92.3		%		80-120	09-AUG-21
Lithium (Li)-Total			100.1		%		80-120	09-AUG-21
Magnesium (Mg)-Total			98.7		%		80-120	09-AUG-21
Manganese (Mn)-Total			96.7		%		80-120	09-AUG-21
Molybdenum (Mo)-Total			93.3		%		80-120	09-AUG-21
Nickel (Ni)-Total			95.9		%		80-120	09-AUG-21
Phosphorus (P)-Total			95.7		%		70-130	09-AUG-21
Potassium (K)-Total			93.8		%		80-120	09-AUG-21
Rubidium (Rb)-Total			92.8		%		80-120	09-AUG-21
Selenium (Se)-Total			97.9		%		80-120	09-AUG-21
Silicon (Si)-Total			94.4		%		60-140	09-AUG-21
Silver (Ag)-Total			94.1		%		80-120	09-AUG-21
Sodium (Na)-Total			103.4		%		80-120	09-AUG-21
Strontium (Sr)-Total			94.6		%		80-120	09-AUG-21
Sulfur (S)-Total			91.9		%		80-120	09-AUG-21
Thallium (Tl)-Total			95.4				80-120	

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5546797								
WG3592691-22 LCS								
Thallium (Tl)-Total			95.4		%		80-120	09-AUG-21
Tellurium (Te)-Total			90.3		%		80-120	09-AUG-21
Thorium (Th)-Total			86.3		%		80-120	09-AUG-21
Tin (Sn)-Total			93.4		%		80-120	09-AUG-21
Titanium (Ti)-Total			94.8		%		80-120	09-AUG-21
Tungsten (W)-Total			91.4		%		80-120	09-AUG-21
Uranium (U)-Total			86.3		%		80-120	09-AUG-21
Vanadium (V)-Total			97.1		%		80-120	09-AUG-21
Zinc (Zn)-Total			90.9		%		80-120	09-AUG-21
Zirconium (Zr)-Total			90.5		%		80-120	09-AUG-21
WG3592691-21 MB								
Aluminum (Al)-Total			<0.0050		mg/L		0.005	09-AUG-21
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	09-AUG-21
Arsenic (As)-Total			<0.00010		mg/L		0.0001	09-AUG-21
Barium (Ba)-Total			<0.00010		mg/L		0.0001	09-AUG-21
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	09-AUG-21
Bismuth (Bi)-Total			<0.000050		mg/L		0.00005	09-AUG-21
Boron (B)-Total			<0.010		mg/L		0.01	09-AUG-21
Cadmium (Cd)-Total			<0.000005(		mg/L		0.000005	09-AUG-21
Calcium (Ca)-Total			<0.050		mg/L		0.05	09-AUG-21
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	09-AUG-21
Cesium (Cs)-Total			<0.000010		mg/L		0.00001	09-AUG-21
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	09-AUG-21
Copper (Cu)-Total			<0.00050		mg/L		0.0005	09-AUG-21
Iron (Fe)-Total			<0.010		mg/L		0.01	09-AUG-21
Lead (Pb)-Total			<0.000050		mg/L		0.00005	09-AUG-21
Lithium (Li)-Total			<0.0010		mg/L		0.001	09-AUG-21
Magnesium (Mg)-Total			0.0052	B	mg/L		0.005	09-AUG-21
Manganese (Mn)-Total			<0.00050		mg/L		0.0005	09-AUG-21
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	09-AUG-21
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	09-AUG-21
Phosphorus (P)-Total			<0.050		mg/L		0.05	09-AUG-21
Potassium (K)-Total			<0.050		mg/L		0.05	09-AUG-21
Rubidium (Rb)-Total			<0.00020		mg/L		0.0002	09-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5546797								
WG3592691-21 MB								
Selenium (Se)-Total			<0.000050		mg/L		0.00005	09-AUG-21
Silicon (Si)-Total			<0.10		mg/L		0.1	09-AUG-21
Silver (Ag)-Total			<0.000050		mg/L		0.00005	09-AUG-21
Sodium (Na)-Total			<0.050		mg/L		0.05	09-AUG-21
Strontium (Sr)-Total			<0.0010		mg/L		0.001	09-AUG-21
Sulfur (S)-Total			<0.50		mg/L		0.5	09-AUG-21
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	09-AUG-21
Tellurium (Te)-Total			<0.00020		mg/L		0.0002	09-AUG-21
Thorium (Th)-Total			<0.00010		mg/L		0.0001	09-AUG-21
Tin (Sn)-Total			<0.00010		mg/L		0.0001	09-AUG-21
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	09-AUG-21
Tungsten (W)-Total			<0.00010		mg/L		0.0001	09-AUG-21
Uranium (U)-Total			<0.000010		mg/L		0.00001	09-AUG-21
Vanadium (V)-Total			<0.00050		mg/L		0.0005	09-AUG-21
Zinc (Zn)-Total			<0.0030		mg/L		0.003	09-AUG-21
Zirconium (Zr)-Total			<0.00020		mg/L		0.0002	09-AUG-21
WG3592691-25 MS		**WG3592691-23**						
Aluminum (Al)-Total			99.96		%		70-130	09-AUG-21
Antimony (Sb)-Total			97.7		%		70-130	09-AUG-21
Arsenic (As)-Total			96.4		%		70-130	09-AUG-21
Barium (Ba)-Total			89.2		%		70-130	09-AUG-21
Beryllium (Be)-Total			95.4		%		70-130	09-AUG-21
Bismuth (Bi)-Total			93.0		%		70-130	09-AUG-21
Boron (B)-Total			91.6		%		70-130	09-AUG-21
Cadmium (Cd)-Total			99.1		%		70-130	09-AUG-21
Calcium (Ca)-Total			N/A	MS-B	%		-	09-AUG-21
Chromium (Cr)-Total			99.3		%		70-130	09-AUG-21
Cesium (Cs)-Total			95.8		%		70-130	09-AUG-21
Cobalt (Co)-Total			100.5		%		70-130	09-AUG-21
Copper (Cu)-Total			99.5		%		70-130	09-AUG-21
Iron (Fe)-Total			N/A	MS-B	%		-	09-AUG-21
Lead (Pb)-Total			93.2		%		70-130	09-AUG-21
Lithium (Li)-Total			95.6		%		70-130	09-AUG-21
Magnesium (Mg)-Total			N/A	MS-B	%		-	09-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5546797								
WG3592691-25 MS		**WG3592691-23**						
Manganese (Mn)-Total			94.1		%		70-130	09-AUG-21
Molybdenum (Mo)-Total			97.5		%		70-130	09-AUG-21
Nickel (Ni)-Total			98.1		%		70-130	09-AUG-21
Phosphorus (P)-Total			95.2		%		70-130	09-AUG-21
Potassium (K)-Total			89.3		%		70-130	09-AUG-21
Rubidium (Rb)-Total			91.1		%		70-130	09-AUG-21
Selenium (Se)-Total			101.8		%		70-130	09-AUG-21
Silicon (Si)-Total			N/A	MS-B	%		-	09-AUG-21
Silver (Ag)-Total			95.9		%		70-130	09-AUG-21
Sodium (Na)-Total			104.1		%		70-130	09-AUG-21
Strontium (Sr)-Total			N/A	MS-B	%		-	09-AUG-21
Sulfur (S)-Total			103.9		%		70-130	09-AUG-21
Thallium (Tl)-Total			96.0		%		70-130	09-AUG-21
Tellurium (Te)-Total			95.5		%		70-130	09-AUG-21
Thorium (Th)-Total			84.7		%		70-130	09-AUG-21
Tin (Sn)-Total			95.5		%		70-130	09-AUG-21
Titanium (Ti)-Total			93.9		%		70-130	09-AUG-21
Tungsten (W)-Total			92.6		%		70-130	09-AUG-21
Uranium (U)-Total			88.1		%		70-130	09-AUG-21
Vanadium (V)-Total			100.3		%		70-130	09-AUG-21
Zinc (Zn)-Total			91.9		%		70-130	09-AUG-21
Zirconium (Zr)-Total			87.7		%		70-130	09-AUG-21
NH3-F-WT	**Water**							
Batch R5547134								
WG3592757-3 DUP		**L2623681-4**						
Ammonia, Total (as N)		<0.010	<0.010	RPD-NA	mg/L	N/A	20	10-AUG-21
WG3592757-2 LCS								
Ammonia, Total (as N)			108.5		%		85-115	10-AUG-21
WG3592757-1 MB								
Ammonia, Total (as N)			<0.010		mg/L		0.01	10-AUG-21
WG3592757-4 MS		**L2623681-4**						
Ammonia, Total (as N)			108.1		%		75-125	10-AUG-21
NO2-IC-WT	**Water**							

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NO2-IC-WT	**Water**							
Batch R5547060								
WG3593174-15 DUP		**WG3593174-13**						
Nitrite (as N)		<0.010	<0.010	RPD-NA	mg/L	N/A	20	09-AUG-21
WG3593174-12 LCS								
Nitrite (as N)			101.1		%		90-110	09-AUG-21
WG3593174-11 MB								
Nitrite (as N)			<0.010		mg/L		0.01	09-AUG-21
WG3593174-14 MS		**WG3593174-13**						
Nitrite (as N)			100.6		%		75-125	09-AUG-21
NO3-IC-WT	**Water**							
Batch R5547060								
WG3593174-15 DUP		**WG3593174-13**						
Nitrate (as N)		<0.020	<0.020	RPD-NA	mg/L	N/A	20	09-AUG-21
WG3593174-12 LCS								
Nitrate (as N)			100.8		%		90-110	09-AUG-21
WG3593174-11 MB								
Nitrate (as N)			<0.020		mg/L		0.02	09-AUG-21
WG3593174-14 MS		**WG3593174-13**						
Nitrate (as N)			99.8		%		75-125	09-AUG-21
P-T-L-COL-WP	**Water**							
Batch R5548681								
WG3594261-3 DUP		**L2622644-1**						
Phosphorus (P)-Total		0.0097	0.0091		mg/L	5.4	20	11-AUG-21
WG3594261-2 LCS								
Phosphorus (P)-Total			93.4		%		80-120	11-AUG-21
WG3594261-1 MB								
Phosphorus (P)-Total			<0.0010		mg/L		0.001	11-AUG-21
WG3594261-4 MS		**L2622644-2**						
Phosphorus (P)-Total			N/A	MS-B	%		-	11-AUG-21
PH-WT	**Water**							
Batch R5546512								
WG3592469-4 DUP		**WG3592469-3**						
pH		8.09	8.09	J	pH units	0.00	0.2	07-AUG-21
WG3592469-2 LCS								
pH			6.98		pH units		6.9-7.1	07-AUG-21
SO4-IC-N-WT	**Water**							

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SO4-IC-N-WT	**Water**							
Batch R5547060								
WG3593174-15 DUP		**WG3593174-13**						
Sulfate (SO4)		<0.30	<0.30	RPD-NA	mg/L	N/A	20	09-AUG-21
WG3593174-12 LCS								
Sulfate (SO4)			102.7		%		90-110	09-AUG-21
WG3593174-11 MB								
Sulfate (SO4)			<0.30		mg/L		0.3	09-AUG-21
WG3593174-14 MS		**WG3593174-13**						
Sulfate (SO4)			102.5		%		75-125	09-AUG-21
SOLIDS-TDS-WT	**Water**							
Batch R5548165								
WG3593164-3 DUP		**WG3593164-4**						
Total Dissolved Solids		<20	<20	RPD-NA	mg/L	N/A	20	09-AUG-21
WG3593164-2 LCS								
Total Dissolved Solids			100.2		%		85-115	09-AUG-21
WG3593164-1 MB								
Total Dissolved Solids			<10		mg/L		10	09-AUG-21
SOLIDS-TSS-WT	**Water**							
Batch R5548138								
WG3593163-3 DUP		**WG3593163-4**						
Total Suspended Solids		3560	3520		mg/L	1.2	20	10-AUG-21
WG3593163-2 LCS								
Total Suspended Solids			100.8		%		85-115	10-AUG-21
WG3593163-1 MB								
Total Suspended Solids			<3.0		mg/L		3	10-AUG-21

Quality Control Report

Workorder: L2623628 Report Date: 21-SEP-21

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Legend:

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

Sample Parameter Qualifier Definitions:

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

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

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

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

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

Monday, September 13, 2021

Gayle Braun
ALS Environmental
60 Northland Rd, Unit 1
Waterloo Canada, ON N2V 2B8

Re: ALS Workorder: 2108320
Project Name:
Project Number: L2623628

Dear Braun:

One water sample was received from ALS Environmental, on 8/16/2021. The sample was scheduled for the following analysis:

Radium-226

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

<original signed by> tor,

ALS Environmental
Katie M. OBrien
Project Manager

Accreditations: ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
California (CA)	2926
Colorado (CO)	CO01099
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
PJ-LA (DoD ELAP/ISO 170250)	95377
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO010992018-1
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	TN02976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280

40 CFR Part 136: All analyses for Clean Water Act samples are analyzed using the 40 CFR Part 136 specified method and include all the QC requirements.

2108320

Radium-226:

The sample was prepared and analyzed according to the current revision of SOP 783.

All acceptance criteria were met.

ALS -- Fort Collins

Sample Number(s) Cross-Reference Table

OrderNum: 2108320
Client Name: ALS Environmental
Client Project Name:
Client Project Number: L2623628
Client PO Number: L2623628

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
L2623628-3	2108320-1		WATER	05-Aug-21	

ALS Environmental

2 1 0 8 3 2 0 - C

L2623628

MISSISSAUGA

Subcontract Request Form

Subcontract To: 210832D

ALS ENVIRONMENTAL - FORT COLLINS, COLORADO, USA
225 COMMERCE DRIVE
FORT COLLINS,CO 80524

NOTES: Please reference on final report and invoice: PO# *L2623628*
ALS requires QC data to be provided with your final results.

Please see enclosed 1 sample(s) in 1 Container(s)

SAMPLE NUMBER	ANALYTICAL REQUIRED	DATE SAMPLED / DUE DATE	Priority Flag
L2623628-3 NDR-P-03		**8/5/2021**	
	Ra226 by Alpha Spec, MDC=0.01 Bq/L (RA226-ALPHASPEC-FC 1)	9/1/2021	

Subcontract Info Contact: Amanda Fazekas (905) 507-6910
Analysis and reporting info contact: Gayle Braun
5730 COOPERS AVENUE, UNIT #26
MISSISSAUGA,ON L4Z 2E9
Phone: (905) 507-6910 Email: gayle.braun@alsglobal.com

Please email confirmation of receipt to: **gayle.braun@alsglobal.com**

Shipped By: _____ Date Shipped: _____

Received By: <original signed by> Date Received: 8/16/2021 1509

Verified By: _____ Date Verified: _____

Temperature: _____

Sample Integrity Issues: _____

ALS Environmental - Fort Colllins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: ALS CANADA Workorder No: 2108320

Project Manager: KMB Initials: AXK Date: 08/17/2021

		N/A	YES	NO
1.	Are airbills / shipping documents present and/or removable?		X	
	Tracking number: 3172022991			
2.	Are custody seals on **shipping** containers intact?	X		
3.	Are custody seals on **sample** containers intact?	X		
4.	Is there a COC (chain-of-custody) present?		X	
5.	Is the COC in agreement with samples received? (IDs, dates, times, # of samples, # of containers, matrix, requested analyses, etc.)		X	
6.	Are short-hold samples present?			X
7.	Are all samples within holding times for the requested analyses?		X	
8.	Were all sample containers received intact? (not broken or leaking)		X	
9.	Is there sufficient sample for the requested analyses?		X	
10.	Are samples in proper containers for requested analyses? (form 250, *Sample Handling Guidelines*)		X	
11.	Are all aqueous samples preserved correctly, if required? (excluding volatiles)		X	
12.	Are all samples requiring no headspace (VOC, GRO, RSK/MEE, radon) free of bubbles > 6 mm (1/4 inch) diameter? (i.e. size of green pea)	X		
13.	Were the samples shipped on ice?		X	
14.	Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #5	RAD ONLY		X

Cooler #:	1						
Temperature (°C):	23.4						
# of custody seals on cooler:	0						
External µR/hr reading:	11						
Background µR/hr reading:	13						

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? **YES** (If no, see Form 008.)

*** Please provide details here for NO responses to boxes above - for 2 thru 5 & 7 thru 12, notify PM & continue w/ login.**

Were unpreserved bottles pH checked? NA All client bottle ID's vs ALS lab ID's double-checked by: AK

If applicable, was the client contacted? **NA** Contact: _____ Date/Time: _____

Project Manager Signature / Date: _____<original signed by> 8/20/21

Form 201r30.xls
03/18/2021

*IR Gun #5, VWR SN 192272629

Client:	ALS Environmental	**Date:**	*13-Sep-21*
Project:	L2623628	**Work Order:**	2108320
Sample ID:	L2623628-3	**Lab ID:**	2108320-1
Legal Location:		**Matrix:**	WATER
Collection Date:	8/5/2021	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Radium-226 by Radon Emanation - Method 903.1		**SOP 783**		Prep Date: **8/20/2021**	PrepBy: **TRB**	
Ra-226	0.0015 (+/- 0.0073)	U,M	0.011	BQ/l	NA	9/9/2021 14:30
Carr: BARIUM	*86.5*		*40-110*	*%REC*	DL = NA	9/9/2021 14:30

Client:	ALS Environmental	**Date:**	*13-Sep-21*
Project:	L2623628	**Work Order:**	2108320
Sample ID:	L2623628-3	**Lab ID:**	2108320-1
Legal Location:		**Matrix:**	WATER
Collection Date:	8/5/2021	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed

Explanation of Qualifiers

Radiochemistry:

- "Report Limit" is the MDC

U or ND - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.
# - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.
G - Sample density differs by more than 15% of LCS density.
D - DER is greater than Control Limit

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).

U or ND - Indicates that the compound was analyzed for but not detected.

E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.

M - Duplicate injection precision was not met.

N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.

Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.

* - Duplicate analysis (relative percent difference) not within control limits.

S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.

B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.

E - Analyte concentration exceeds the upper level of the calibration range.

J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).

A - A tentatively identified compound is a suspected aldol-condensation product.

X - The analyte was diluted below an accurate quantitation level.

* - The spike recovery is equal to or outside the control criteria used.

+ - The relative percent difference (RPD) equals or exceeds the control criteria.

G - A pattern resembling gasoline was detected in this sample.

D - A pattern resembling diesel was detected in this sample.

M - A pattern resembling motor oil was detected in this sample.

C - A pattern resembling crude oil was detected in this sample.

4 - A pattern resembling JP-4 was detected in this sample.

5 - A pattern resembling JP-5 was detected in this sample.

H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.

L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.

Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
- gasoline
- JP-8
- diesel
- mineral spirits
- motor oil
- Stoddard solvent
- bunker C

QC BATCH REPORT

Batch ID: **RE210820-2-1** Instrument ID **Alpha Scin** Method: **Radium-226 by Radon Emanation**

LCS Sample ID: **RE210820-2** Units: **BQ/l** Analysis Date: **9/9/2021 17:11**

Client ID: Run ID: **RE210820-2A** Prep Date: **8/20/2021** DF: **NA**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	DER Ref	DER	DER Limit	Qual
Ra-226	1.55 (+/- 0.385)	0.0122	1.731		89.3	67-120					P,Y1,M3
Carr: BARIUM	15200		14980		101	40-110					Y1

LCSD Sample ID: **RE210820-2** Units: **BQ/l** Analysis Date: **9/9/2021 17:11**

Client ID: Run ID: **RE210820-2A** Prep Date: **8/20/2021** DF: **NA**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	DER Ref	DER	DER Limit	Qual
Ra-226	1.23 (+/- 0.306)	0.0133	1.731		70.8	67-120		1.55	0.7	2.1	P,M3
Carr: BARIUM	14700		14980		98.4	40-110		15200			

MB Sample ID: **RE210820-2** Units: **BQ/l** Analysis Date: **9/9/2021 16:41**

Client ID: Run ID: **RE210820-2A** Prep Date: **8/20/2021** DF: **NA**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	DER Ref	DER	DER Limit	Qual
Ra-226	-0.0029 (+/- 0.0034)	0.008									U
Carr: BARIUM	14400		14980		95.8	40-110					

The following samples were analyzed in this batch: 2108320-1

Chain of Custody (COC) / Analytical Request Form

COC Number: **20 -**

Page of

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Report To	Contact and company name below will appear on the final report
Company:	Wood E&IS
Contact:	Dale Klodnicki
Phone:	(647) 993-4243
	Company address below will appear on the final report
Street:	2020 Winston Park Dirve, Suite 600
City/Province:	Oakville, ON
Postal Code:	L6H 6X7
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Wood E&IS
Contact:	Dale Klodnicki

Reports / Recipients	
Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Merge QC/QCI Reports with COA	☑ YES ☐ NO ☐ N/A
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	dale.klodnicki@woodplc.com
Email 2	trevor.baetz@woodplc.com
Email 3	michael.godard@woodplc.com
Invoice Recipients	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	APInvoice.Canada@woodplc.com
Email 2	dale.klodnicki@woodplc.com

Turnaround Time (TAT) Requested

☑ Routine [R] if received by 3pm M-F - no surcharges apply
☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.

Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests.

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

AFFIX ALS BARCODE LABEL HERE (ALS use only)

Project Information	
ALS Account # / Quote #:	Q86725
Job #:	OMEMA2002
PO / AFE:	OMEMA2002.2021C.200.5120.573000
LSD:	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (ALS use only):

ALS Contact: Gayle Braun **Sampler:** TB / MG

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	F/P	Dissolved Metals	Total Metals	Acidity, Alkalinity, Hardness, pH	Anions, Conductivity	Total & Free Cyanide	Cyanide WAD	Total Mercury by CVAFS (Ultra)	Total Mthylmercury by GCAFS	Ammonia, Total Phosphorus	Radium 226	Total Suspended Solids	Total Dissolved Solids			SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	NDR-P-04	5-Aug-21	9:00	SW	8	R	R	R	R	R	R	R	R	R		R	R						
	NDR-P-02A	5-Aug-21	10:00	SW	8	R	R	R	R	R	R	R	R	R		R	R						
	NDR-P-03	5-Aug-21	9:00	SW	9	R	R	R	R	R	R	R	R	R	R	R	R						

Drinking Water (DW) Samples[1] (client use)	**Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)**
Are samples taken from a Regulated DW System? ☐ YES ☑ NO	[Combined] - Ontario PWQO+CCME-FAL-WATER
	Federal CCME Canadian Environmental Quality Guidelines (JUL, 2012)
Are samples for human consumption/ use? ☐ YES ☑ NO	NDR-P-03 – Field Temp: 23.1 / pH: 7.63 | NDR-P-02a – Field Temp: 22.6 / pH: 7.93 NDR-P-04 – Field Temp: 21.3 / pH: 5.64

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☐ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)		
Released by: T. Baetz	Date: 05-Aug-21 // 16:00	Time:

INITIAL SHIPMENT RECEPTION (ALS use only)		
Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (ALS use only)		
Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY AUG 2020 FRONT

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

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

Wood Environment & Infrastructure Solutions
ATTN: Dale Klodnicki
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7

Date Received: 11-AUG-21
Report Date: 27-SEP-21 08:35 (MT)
Version: FINAL

Client Phone: 905-568-2929

Certificate of Analysis

Lab Work Order #: L2625067

Project P.O. #: OMEMA2002.2021C.200.5120.573000
Job Reference: OMEMA2002
C of C Numbers:
Legal Site Desc:

<original signed by>

Gayle Braun
Senior Account Manager

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

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2625067-1 WBR-P-02							
Sampled By: TB/MG on 07-AUG-21 @ 11:45							
Matrix: WATER							
Physical Tests							
Conductivity	44.7		1.0	umhos/cm	11-AUG-21		
Hardness (as CaCO3)	26.5	HTC	0.50	mg/L	13-AUG-21		
pH	6.48		0.10	pH units	11-AUG-21	*6.5-9.0	*6.5-8.5
Total Suspended Solids	3.4		3.0	mg/L	12-AUG-21		
Total Dissolved Solids	62		10	mg/L	12-AUG-21		
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	18.8		1.0	mg/L	11-AUG-21		
Ammonia, Total (as N)	0.019		0.010	mg/L	13-AUG-21		
Bromide (Br)	<0.10		0.10	mg/L	12-AUG-21		
Chloride (Cl)	<0.50		0.50	mg/L	12-AUG-21	120	
Fluoride (F)	<0.020		0.020	mg/L	12-AUG-21	0.12	
Nitrate (as N)	<0.020		0.020	mg/L	12-AUG-21	3	
Nitrite (as N)	<0.010		0.010	mg/L	12-AUG-21	0.06	
Phosphorus (P)-Total	0.0179		0.0010	mg/L	13-AUG-21		*0.01
Sulfate (SO4)	<0.30		0.30	mg/L	12-AUG-21		
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L	12-AUG-21		
Cyanide, Total	<0.0020		0.0020	mg/L	12-AUG-21		
Cyanide, Free	<0.0020		0.0020	mg/L	12-AUG-21	0.005	
Inorganic Parameters							
Acidity (as CaCO3)	5.3		2.0	mg/L	12-AUG-21		
Total Metals							
Aluminum (Al)-Total	0.0724		0.0050	mg/L	12-AUG-21	*0.005	*0.015
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	12-AUG-21		0.02
Arsenic (As)-Total	0.00098		0.00010	mg/L	12-AUG-21	0.005	0.005
Barium (Ba)-Total	0.00573		0.00010	mg/L	12-AUG-21		
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	12-AUG-21		0.011
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	12-AUG-21		
Boron (B)-Total	<0.010		0.010	mg/L	12-AUG-21		0.2
Cadmium (Cd)-Total	0.0000113		0.0000050	mg/L	12-AUG-21	0.00004	0.0001
Calcium (Ca)-Total	7.54		0.050	mg/L	12-AUG-21		
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	12-AUG-21		
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	12-AUG-21	0.001	
Cobalt (Co)-Total	0.00051		0.00010	mg/L	12-AUG-21		0.0009
Copper (Cu)-Total	<0.00050		0.00050	mg/L	12-AUG-21	0.002	0.001
Iron (Fe)-Total	0.464		0.010	mg/L	12-AUG-21	*0.3	*0.3
Lead (Pb)-Total	0.000099		0.000050	mg/L	12-AUG-21	0.001	0.001
Lithium (Li)-Total	<0.0010		0.0010	mg/L	12-AUG-21		
Magnesium (Mg)-Total	1.86		0.0050	mg/L	12-AUG-21		
Manganese (Mn)-Total	0.219		0.00050	mg/L	12-AUG-21		
Mercury (Hg)-Total	0.00106		0.00050	ug/L	18-AUG-21	0.026	0.2
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L	12-AUG-21	0.073	0.04
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	12-AUG-21	0.025	0.025
Phosphorus (P)-Total	<0.050		0.050	mg/L	12-AUG-21		**0.01
Potassium (K)-Total	<0.050		0.050	mg/L	12-AUG-21		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2625067-1 WBR-P-02							
Sampled By: TB/MG on 07-AUG-21 @ 11:45							
Matrix: WATER							
Total Metals							
Rubidium (Rb)-Total	<0.00020		0.00020	mg/L	12-AUG-21		
Selenium (Se)-Total	0.000105		0.000050	mg/L	12-AUG-21	0.001	0.1
Silicon (Si)-Total	1.62		0.10	mg/L	12-AUG-21		
Silver (Ag)-Total	<0.000050		0.000050	mg/L	12-AUG-21	0.0001	0.0001
Sodium (Na)-Total	0.141		0.050	mg/L	12-AUG-21		
Strontium (Sr)-Total	0.0182		0.0010	mg/L	12-AUG-21		
Sulfur (S)-Total	<0.50		0.50	mg/L	12-AUG-21		
Tellurium (Te)-Total	0.00029		0.00020	mg/L	12-AUG-21		
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	12-AUG-21	0.0008	0.0003
Thorium (Th)-Total	<0.00010		0.00010	mg/L	12-AUG-21		
Tin (Sn)-Total	<0.00010		0.00010	mg/L	12-AUG-21		
Titanium (Ti)-Total	0.00121		0.00030	mg/L	12-AUG-21		
Tungsten (W)-Total	<0.00010		0.00010	mg/L	12-AUG-21		0.03
Uranium (U)-Total	<0.000010		0.000010	mg/L	12-AUG-21		0.005
Vanadium (V)-Total	<0.00050		0.00050	mg/L	12-AUG-21		0.006
Zinc (Zn)-Total	0.0044		0.0030	mg/L	12-AUG-21	0.03	0.02
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	12-AUG-21		0.004
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD			No Unit	13-AUG-21		
Aluminum (Al)-Dissolved	0.0718		0.0010	mg/L	13-AUG-21	*0.005	*0.015
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	13-AUG-21		0.02
Arsenic (As)-Dissolved	0.00096		0.00010	mg/L	13-AUG-21	0.005	0.005
Barium (Ba)-Dissolved	0.00566		0.00010	mg/L	13-AUG-21		
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	13-AUG-21		0.011
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	13-AUG-21		
Boron (B)-Dissolved	<0.010		0.010	mg/L	13-AUG-21		0.2
Cadmium (Cd)-Dissolved	0.0000095		0.0000050	mg/L	13-AUG-21	0.00004	0.0001
Calcium (Ca)-Dissolved	8.04		0.050	mg/L	13-AUG-21		
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	13-AUG-21		
Chromium (Cr)-Dissolved	0.00035		0.00010	mg/L	13-AUG-21	0.001	
Cobalt (Co)-Dissolved	0.00048		0.00010	mg/L	13-AUG-21		0.0009
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	13-AUG-21	0.002	0.001
Iron (Fe)-Dissolved	0.363		0.010	mg/L	13-AUG-21	*0.3	*0.3
Lead (Pb)-Dissolved	0.000052		0.000050	mg/L	13-AUG-21	0.001	0.001
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	13-AUG-21		
Magnesium (Mg)-Dissolved	2.18		0.0050	mg/L	13-AUG-21		
Manganese (Mn)-Dissolved	0.204		0.00010	mg/L	13-AUG-21		
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L	13-AUG-21	0.073	0.04
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	13-AUG-21	0.025	0.025
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	13-AUG-21		**0.01
Potassium (K)-Dissolved	<0.050		0.050	mg/L	13-AUG-21		
Rubidium (Rb)-Dissolved	<0.00020		0.00020	mg/L	13-AUG-21		
Selenium (Se)-Dissolved	0.000094		0.000050	mg/L	13-AUG-21	0.001	0.1
Silicon (Si)-Dissolved	1.59		0.050	mg/L	13-AUG-21		
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	13-AUG-21	0.0001	0.0001
Sodium (Na)-Dissolved	0.155		0.050	mg/L	13-AUG-21		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2625067-1 WBR-P-02							
Sampled By: TB/MG on 07-AUG-21 @ 11:45							
Matrix: WATER							
Dissolved Metals							
Strontium (Sr)-Dissolved	0.0190		0.00010	mg/L	13-AUG-21		
Sulfur (S)-Dissolved	<0.50		0.50	mg/L	13-AUG-21		
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	13-AUG-21		
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	13-AUG-21	0.0008	0.0003
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	13-AUG-21		
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	13-AUG-21		
Titanium (Ti)-Dissolved	0.00089		0.00030	mg/L	13-AUG-21		
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	13-AUG-21		0.03
Uranium (U)-Dissolved	<0.000010		0.000010	mg/L	13-AUG-21		0.005
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	13-AUG-21		0.006
Zinc (Zn)-Dissolved	0.0045		0.0010	mg/L	13-AUG-21	0.03	0.02
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	13-AUG-21		0.004
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000052		0.000020	ug/L	01-SEP-21		
L2625067-2 WBR-P-01							
Sampled By: TB/MG on 07-AUG-21 @ 13:30							
Matrix: WATER							
Physical Tests							
Conductivity	55.8		1.0	umhos/cm	11-AUG-21		
Hardness (as CaCO3)	31.8	HTC	0.50	mg/L	13-AUG-21		
pH	6.79		0.10	pH units	11-AUG-21	6.5-9.0	6.5-8.5
Total Suspended Solids	<3.0		3.0	mg/L	12-AUG-21		
Total Dissolved Solids	86	DLDS	13	mg/L	12-AUG-21		
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	26.3		1.0	mg/L	11-AUG-21		
Ammonia, Total (as N)	0.015		0.010	mg/L	13-AUG-21		
Bromide (Br)	<0.10		0.10	mg/L	12-AUG-21		
Chloride (Cl)	<0.50		0.50	mg/L	12-AUG-21	120	
Fluoride (F)	0.023		0.020	mg/L	12-AUG-21	0.12	
Nitrate (as N)	<0.020		0.020	mg/L	12-AUG-21	3	
Nitrite (as N)	<0.010		0.010	mg/L	12-AUG-21	0.06	
Phosphorus (P)-Total	0.0200		0.0010	mg/L	13-AUG-21		*0.01
Sulfate (SO4)	<0.30		0.30	mg/L	12-AUG-21		
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L	12-AUG-21		
Cyanide, Total	<0.0020		0.0020	mg/L	12-AUG-21		
Cyanide, Free	<0.0020		0.0020	mg/L	12-AUG-21	0.005	
Inorganic Parameters							
Acidity (as CaCO3)	4.0		2.0	mg/L	12-AUG-21		
Total Metals							
Aluminum (Al)-Total	0.0501		0.0050	mg/L	12-AUG-21	*0.005	*0.015
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	12-AUG-21		0.02
Arsenic (As)-Total	0.00087		0.00010	mg/L	12-AUG-21	0.005	0.005
Barium (Ba)-Total	0.00308		0.00010	mg/L	12-AUG-21		
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	12-AUG-21		0.011

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2625067-2 WBR-P-01							
Sampled By: TB/MG on 07-AUG-21 @ 13:30							
Matrix: WATER							
Total Metals							
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	12-AUG-21		
Boron (B)-Total	<0.010		0.010	mg/L	12-AUG-21		0.2
Cadmium (Cd)-Total	0.0000073		0.0000050	mg/L	12-AUG-21	0.00004	0.0001
Calcium (Ca)-Total	8.75		0.050	mg/L	12-AUG-21		
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	12-AUG-21		
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	12-AUG-21	0.001	
Cobalt (Co)-Total	0.00048		0.00010	mg/L	12-AUG-21		0.0009
Copper (Cu)-Total	<0.00050		0.00050	mg/L	12-AUG-21	0.002	0.001
Iron (Fe)-Total	0.346		0.010	mg/L	12-AUG-21	*0.3	*0.3
Lead (Pb)-Total	0.000075		0.000050	mg/L	12-AUG-21	0.001	0.001
Lithium (Li)-Total	<0.0010		0.0010	mg/L	12-AUG-21		
Magnesium (Mg)-Total	2.41		0.0050	mg/L	12-AUG-21		
Manganese (Mn)-Total	0.203		0.00050	mg/L	12-AUG-21		
Mercury (Hg)-Total	0.00080		0.00050	ug/L	18-AUG-21	0.026	0.2
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L	12-AUG-21	0.073	0.04
Nickel (Ni)-Total	0.00051		0.00050	mg/L	12-AUG-21	0.025	0.025
Phosphorus (P)-Total	<0.050		0.050	mg/L	12-AUG-21		**0.01
Potassium (K)-Total	<0.050		0.050	mg/L	12-AUG-21		
Rubidium (Rb)-Total	0.00029		0.00020	mg/L	12-AUG-21		
Selenium (Se)-Total	0.000111		0.000050	mg/L	12-AUG-21	0.001	0.1
Silicon (Si)-Total	1.81		0.10	mg/L	12-AUG-21		
Silver (Ag)-Total	<0.000050		0.000050	mg/L	12-AUG-21	0.0001	0.0001
Sodium (Na)-Total	0.256		0.050	mg/L	12-AUG-21		
Strontium (Sr)-Total	0.0181		0.0010	mg/L	12-AUG-21		
Sulfur (S)-Total	<0.50		0.50	mg/L	12-AUG-21		
Tellurium (Te)-Total	0.00024		0.00020	mg/L	12-AUG-21		
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	12-AUG-21	0.0008	0.0003
Thorium (Th)-Total	<0.00010		0.00010	mg/L	12-AUG-21		
Tin (Sn)-Total	<0.00010		0.00010	mg/L	12-AUG-21		
Titanium (Ti)-Total	0.00094		0.00030	mg/L	12-AUG-21		
Tungsten (W)-Total	<0.00010		0.00010	mg/L	12-AUG-21		0.03
Uranium (U)-Total	<0.000010		0.000010	mg/L	12-AUG-21		0.005
Vanadium (V)-Total	<0.00050		0.00050	mg/L	12-AUG-21		0.006
Zinc (Zn)-Total	0.0030		0.0030	mg/L	12-AUG-21	0.03	0.02
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	12-AUG-21		0.004
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD			No Unit	13-AUG-21		
Aluminum (Al)-Dissolved	0.0467		0.0010	mg/L	13-AUG-21	*0.005	*0.015
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	13-AUG-21		0.02
Arsenic (As)-Dissolved	0.00089		0.00010	mg/L	13-AUG-21	0.005	0.005
Barium (Ba)-Dissolved	0.00292		0.00010	mg/L	13-AUG-21		
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	13-AUG-21		0.011
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	13-AUG-21		
Boron (B)-Dissolved	<0.010		0.010	mg/L	13-AUG-21		0.2
Cadmium (Cd)-Dissolved	0.0000054		0.0000050	mg/L	13-AUG-21	0.00004	0.0001

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2625067-2	WBR-P-01							
Sampled By:	TB/MG on 07-AUG-21 @ 13:30							
Matrix:	WATER							
Dissolved Metals								
	Calcium (Ca)-Dissolved	9.47		0.050	mg/L	13-AUG-21		
	Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	13-AUG-21		
	Chromium (Cr)-Dissolved	0.00037		0.00010	mg/L	13-AUG-21	0.001	
	Cobalt (Co)-Dissolved	0.00035		0.00010	mg/L	13-AUG-21		0.0009
	Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	13-AUG-21	0.002	0.001
	Iron (Fe)-Dissolved	0.228		0.010	mg/L	13-AUG-21	0.3	0.3
	Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	13-AUG-21	0.001	0.001
	Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	13-AUG-21		
	Magnesium (Mg)-Dissolved	2.81		0.0050	mg/L	13-AUG-21		
	Manganese (Mn)-Dissolved	0.142		0.00010	mg/L	13-AUG-21		
	Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L	13-AUG-21	0.073	0.04
	Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	13-AUG-21	0.025	0.025
	Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	13-AUG-21		**0.01
	Potassium (K)-Dissolved	<0.050		0.050	mg/L	13-AUG-21		
	Rubidium (Rb)-Dissolved	0.00026		0.00020	mg/L	13-AUG-21		
	Selenium (Se)-Dissolved	0.000132		0.000050	mg/L	13-AUG-21	0.001	0.1
	Silicon (Si)-Dissolved	1.71		0.050	mg/L	13-AUG-21		
	Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	13-AUG-21	0.0001	0.0001
	Sodium (Na)-Dissolved	0.276		0.050	mg/L	13-AUG-21		
	Strontium (Sr)-Dissolved	0.0193		0.00010	mg/L	13-AUG-21		
	Sulfur (S)-Dissolved	<0.50		0.50	mg/L	13-AUG-21		
	Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	13-AUG-21		
	Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	13-AUG-21	0.0008	0.0003
	Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	13-AUG-21		
	Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	13-AUG-21		
	Titanium (Ti)-Dissolved	0.00073		0.00030	mg/L	13-AUG-21		
	Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	13-AUG-21		0.03
	Uranium (U)-Dissolved	<0.000010		0.000010	mg/L	13-AUG-21		0.005
	Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	13-AUG-21		0.006
	Zinc (Zn)-Dissolved	0.0029		0.0010	mg/L	13-AUG-21	0.03	0.02
	Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	13-AUG-21		0.004
Speciated Metals								
	Methylmercury (as MeHg)-Total	0.000056		0.000020	ug/L	01-SEP-21		
L2625067-3	NDR-S-04							
Sampled By:	TB/MG on 06-AUG-21 @ 13:15							
Matrix:	WATER							
Physical Tests								
	Conductivity	160		1.0	umhos/cm	12-AUG-21		
	Hardness (as CaCO3)	71.0	HTC	0.50	mg/L	13-AUG-21		
	pH	7.63	PEHR	0.10	pH units	12-AUG-21	6.5-9.0	6.5-8.5
	Total Suspended Solids	3.9		3.0	mg/L	12-AUG-21		
	Total Dissolved Solids	123	DLDS	13	mg/L	12-AUG-21		
Anions and Nutrients								
	Alkalinity, Total (as CaCO3)	69.0		1.0	mg/L	12-AUG-21		
	Ammonia, Total (as N)	0.023		0.010	mg/L	13-AUG-21		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL) **#2: Ontario PWQO 1994 Guidelines**

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2625067-3 NDR-S-04							
Sampled By: TB/MG on 06-AUG-21 @ 13:15							
Matrix: WATER							
Anions and Nutrients							
Bromide (Br)	<0.10		0.10	mg/L	12-AUG-21		
Chloride (Cl)	10.7		0.50	mg/L	12-AUG-21	120	
Fluoride (F)	0.031		0.020	mg/L	12-AUG-21	0.12	
Nitrate (as N)	<0.020		0.020	mg/L	12-AUG-21	3	
Nitrite (as N)	<0.010		0.010	mg/L	12-AUG-21	0.06	
Phosphorus (P)-Total	0.0337		0.0010	mg/L	13-AUG-21		*0.01
Sulfate (SO4)	<0.30		0.30	mg/L	12-AUG-21		
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L	12-AUG-21		
Cyanide, Total	<0.0020		0.0020	mg/L	12-AUG-21		
Cyanide, Free	<0.0020		0.0020	mg/L	12-AUG-21	0.005	
Inorganic Parameters							
Acidity (as CaCO3)	3.4		2.0	mg/L	12-AUG-21		
Total Metals							
Aluminum (Al)-Total	0.328		0.0050	mg/L	12-AUG-21	*0.005	*0.015
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	12-AUG-21		0.02
Arsenic (As)-Total	0.00133		0.00010	mg/L	12-AUG-21	0.005	0.005
Barium (Ba)-Total	0.00890		0.00010	mg/L	12-AUG-21		
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	12-AUG-21		0.011
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	12-AUG-21		
Boron (B)-Total	<0.010		0.010	mg/L	12-AUG-21		0.2
Cadmium (Cd)-Total	0.0000117		0.0000050	mg/L	12-AUG-21	0.00004	0.0001
Calcium (Ca)-Total	20.4		0.050	mg/L	12-AUG-21		
Cesium (Cs)-Total	0.000038		0.000010	mg/L	12-AUG-21		
Chromium (Cr)-Total	0.00094		0.00050	mg/L	12-AUG-21	0.001	
Cobalt (Co)-Total	0.00031		0.00010	mg/L	12-AUG-21		0.0009
Copper (Cu)-Total	0.00259		0.00050	mg/L	12-AUG-21	*0.002	*0.001
Iron (Fe)-Total	0.711		0.010	mg/L	12-AUG-21	*0.3	*0.3
Lead (Pb)-Total	0.000314		0.000050	mg/L	12-AUG-21	0.001	0.001
Lithium (Li)-Total	<0.0010		0.0010	mg/L	12-AUG-21		
Magnesium (Mg)-Total	4.89		0.0050	mg/L	12-AUG-21		
Manganese (Mn)-Total	0.210		0.00050	mg/L	12-AUG-21		
Mercury (Hg)-Total	0.00110		0.00050	ug/L	18-AUG-21	0.026	0.2
Molybdenum (Mo)-Total	0.000111		0.000050	mg/L	12-AUG-21	0.073	0.04
Nickel (Ni)-Total	0.00126		0.00050	mg/L	12-AUG-21	0.025	0.025
Phosphorus (P)-Total	<0.050		0.050	mg/L	12-AUG-21		**0.01
Potassium (K)-Total	0.304		0.050	mg/L	12-AUG-21		
Rubidium (Rb)-Total	0.00142		0.00020	mg/L	12-AUG-21		
Selenium (Se)-Total	0.000128		0.000050	mg/L	12-AUG-21	0.001	0.1
Silicon (Si)-Total	1.99		0.10	mg/L	12-AUG-21		
Silver (Ag)-Total	<0.000050		0.000050	mg/L	12-AUG-21	0.0001	0.0001
Sodium (Na)-Total	6.55		0.050	mg/L	12-AUG-21		
Strontium (Sr)-Total	0.0381		0.0010	mg/L	12-AUG-21		
Sulfur (S)-Total	<0.50		0.50	mg/L	12-AUG-21		
Tellurium (Te)-Total	0.00028		0.00020	mg/L	12-AUG-21		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2625067-3 NDR-S-04							
Sampled By: TB/MG on 06-AUG-21 @ 13:15							
Matrix: WATER							
Total Metals							
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	12-AUG-21	0.0008	0.0003
Thorium (Th)-Total	<0.00010		0.00010	mg/L	12-AUG-21		
Tin (Sn)-Total	<0.00010		0.00010	mg/L	12-AUG-21		
Titanium (Ti)-Total	0.0138		0.00030	mg/L	12-AUG-21		
Tungsten (W)-Total	<0.00010		0.00010	mg/L	12-AUG-21		0.03
Uranium (U)-Total	0.000049		0.000010	mg/L	12-AUG-21		0.005
Vanadium (V)-Total	0.00101		0.00050	mg/L	12-AUG-21		0.006
Zinc (Zn)-Total	0.0066		0.0030	mg/L	12-AUG-21	0.03	0.02
Zirconium (Zr)-Total	0.00047		0.00020	mg/L	12-AUG-21		0.004
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD			No Unit	13-AUG-21		
Aluminum (Al)-Dissolved	0.0653		0.0010	mg/L	13-AUG-21	*0.005	*0.015
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	13-AUG-21		0.02
Arsenic (As)-Dissolved	0.00120		0.00010	mg/L	13-AUG-21	0.005	0.005
Barium (Ba)-Dissolved	0.00652		0.00010	mg/L	13-AUG-21		
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	13-AUG-21		0.011
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	13-AUG-21		
Boron (B)-Dissolved	<0.010		0.010	mg/L	13-AUG-21		0.2
Cadmium (Cd)-Dissolved	0.0000071		0.0000050	mg/L	13-AUG-21	0.00004	0.0001
Calcium (Ca)-Dissolved	22.3		0.050	mg/L	13-AUG-21		
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	13-AUG-21		
Chromium (Cr)-Dissolved	0.00041		0.00010	mg/L	13-AUG-21	0.001	
Cobalt (Co)-Dissolved	0.00017		0.00010	mg/L	13-AUG-21		0.0009
Copper (Cu)-Dissolved	0.00063		0.00020	mg/L	13-AUG-21	0.002	0.001
Iron (Fe)-Dissolved	0.361		0.010	mg/L	13-AUG-21	*0.3	*0.3
Lead (Pb)-Dissolved	0.000074		0.000050	mg/L	13-AUG-21	0.001	0.001
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	13-AUG-21		
Magnesium (Mg)-Dissolved	5.40		0.0050	mg/L	13-AUG-21		
Manganese (Mn)-Dissolved	0.185		0.00010	mg/L	13-AUG-21		
Molybdenum (Mo)-Dissolved	0.000110		0.000050	mg/L	13-AUG-21	0.073	0.04
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	13-AUG-21	0.025	0.025
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	13-AUG-21		**0.01
Potassium (K)-Dissolved	0.234		0.050	mg/L	13-AUG-21		
Rubidium (Rb)-Dissolved	0.00092		0.00020	mg/L	13-AUG-21		
Selenium (Se)-Dissolved	0.000117		0.000050	mg/L	13-AUG-21	0.001	0.1
Silicon (Si)-Dissolved	1.41		0.050	mg/L	13-AUG-21		
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	13-AUG-21	0.0001	0.0001
Sodium (Na)-Dissolved	7.34		0.050	mg/L	13-AUG-21		
Strontium (Sr)-Dissolved	0.0406		0.00010	mg/L	13-AUG-21		
Sulfur (S)-Dissolved	<0.50		0.50	mg/L	13-AUG-21		
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	13-AUG-21		
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	13-AUG-21	0.0008	0.0003
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	13-AUG-21		
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	13-AUG-21		
Titanium (Ti)-Dissolved	0.00303		0.00030	mg/L	13-AUG-21		
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	13-AUG-21		0.03

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2625067-3 NDR-S-04							
Sampled By: TB/MG on 06-AUG-21 @ 13:15							
Matrix: WATER							
Dissolved Metals							
Uranium (U)-Dissolved	0.000037		0.000010	mg/L	13-AUG-21		0.005
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	13-AUG-21		0.006
Zinc (Zn)-Dissolved	0.0013		0.0010	mg/L	13-AUG-21	0.03	0.02
Zirconium (Zr)-Dissolved	0.00038		0.00020	mg/L	13-AUG-21		0.004
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000104		0.000020	ug/L	01-SEP-21		
L2625067-4 NDR-P-01							
Sampled By: TB/MG on 08-AUG-21 @ 16:30							
Matrix: WATER							
Physical Tests							
Conductivity	61.2		1.0	umhos/cm	12-AUG-21		
Hardness (as CaCO3)	38.5	HTC	0.50	mg/L	13-AUG-21		
pH	7.05		0.10	pH units	12-AUG-21	6.5-9.0	6.5-8.5
Total Suspended Solids	<3.0		3.0	mg/L	12-AUG-21		
Total Dissolved Solids	114	DLDS	13	mg/L	12-AUG-21		
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	29.2		1.0	mg/L	12-AUG-21		
Ammonia, Total (as N)	0.016		0.010	mg/L	13-AUG-21		
Bromide (Br)	<0.10		0.10	mg/L	12-AUG-21		
Chloride (Cl)	<0.50		0.50	mg/L	12-AUG-21	120	
Fluoride (F)	0.021		0.020	mg/L	12-AUG-21	0.12	
Nitrate (as N)	<0.020		0.020	mg/L	12-AUG-21	3	
Nitrite (as N)	<0.010		0.010	mg/L	12-AUG-21	0.06	
Phosphorus (P)-Total	0.0308		0.0010	mg/L	13-AUG-21		*0.01
Sulfate (SO4)	<0.30		0.30	mg/L	12-AUG-21		
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L	12-AUG-21		
Cyanide, Total	<0.0020		0.0020	mg/L	12-AUG-21		
Cyanide, Free	<0.0020		0.0020	mg/L	12-AUG-21	0.005	
Inorganic Parameters							
Acidity (as CaCO3)	4.6		2.0	mg/L	12-AUG-21		
Total Metals							
Aluminum (Al)-Total	0.0872		0.0050	mg/L	12-AUG-21	*0.005	*0.015
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	12-AUG-21		0.02
Arsenic (As)-Total	0.00127		0.00010	mg/L	12-AUG-21	0.005	0.005
Barium (Ba)-Total	0.00699		0.00010	mg/L	12-AUG-21		
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	12-AUG-21		0.011
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	12-AUG-21		
Boron (B)-Total	<0.010		0.010	mg/L	12-AUG-21		0.2
Cadmium (Cd)-Total	0.0000120		0.0000050	mg/L	12-AUG-21	0.00004	0.0001
Calcium (Ca)-Total	10.7		0.050	mg/L	12-AUG-21		
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	12-AUG-21		
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	12-AUG-21	0.001	
Cobalt (Co)-Total	0.00018		0.00010	mg/L	12-AUG-21		0.0009

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2625067-4 NDR-P-01							
Sampled By: TB/MG on 08-AUG-21 @ 16:30							
Matrix: WATER							
Total Metals							
Copper (Cu)-Total	<0.00050		0.00050	mg/L	12-AUG-21	0.002	0.001
Iron (Fe)-Total	0.397		0.010	mg/L	12-AUG-21	*0.3	*0.3
Lead (Pb)-Total	0.000131		0.000050	mg/L	12-AUG-21	0.001	0.001
Lithium (Li)-Total	<0.0010		0.0010	mg/L	12-AUG-21		
Magnesium (Mg)-Total	2.87		0.0050	mg/L	12-AUG-21		
Manganese (Mn)-Total	0.0461		0.00050	mg/L	12-AUG-21		
Mercury (Hg)-Total	0.00108		0.00050	ug/L	18-AUG-21	0.026	0.2
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L	12-AUG-21	0.073	0.04
Nickel (Ni)-Total	0.00053		0.00050	mg/L	12-AUG-21	0.025	0.025
Phosphorus (P)-Total	<0.050		0.050	mg/L	12-AUG-21		**0.01
Potassium (K)-Total	0.068		0.050	mg/L	12-AUG-21		
Rubidium (Rb)-Total	0.00038		0.00020	mg/L	12-AUG-21		
Selenium (Se)-Total	0.000147		0.000050	mg/L	12-AUG-21	0.001	0.1
Silicon (Si)-Total	0.90		0.10	mg/L	12-AUG-21		
Silver (Ag)-Total	<0.000050		0.000050	mg/L	12-AUG-21	0.0001	0.0001
Sodium (Na)-Total	0.454		0.050	mg/L	12-AUG-21		
Strontium (Sr)-Total	0.0240		0.0010	mg/L	12-AUG-21		
Sulfur (S)-Total	<0.50		0.50	mg/L	12-AUG-21		
Tellurium (Te)-Total	0.00021		0.00020	mg/L	12-AUG-21		
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	12-AUG-21	0.0008	0.0003
Thorium (Th)-Total	<0.00010		0.00010	mg/L	12-AUG-21		
Tin (Sn)-Total	<0.00010		0.00010	mg/L	12-AUG-21		
Titanium (Ti)-Total	0.00123		0.00030	mg/L	12-AUG-21		
Tungsten (W)-Total	<0.00010		0.00010	mg/L	12-AUG-21		0.03
Uranium (U)-Total	0.000013		0.000010	mg/L	12-AUG-21		0.005
Vanadium (V)-Total	<0.00050		0.00050	mg/L	12-AUG-21		0.006
Zinc (Zn)-Total	0.0042		0.0030	mg/L	12-AUG-21	0.03	0.02
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	12-AUG-21		0.004
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD			No Unit	13-AUG-21		
Aluminum (Al)-Dissolved	0.0875		0.0010	mg/L	13-AUG-21	*0.005	*0.015
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	13-AUG-21		0.02
Arsenic (As)-Dissolved	0.00124		0.00010	mg/L	13-AUG-21	0.005	0.005
Barium (Ba)-Dissolved	0.00679		0.00010	mg/L	13-AUG-21		
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	13-AUG-21		0.011
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	13-AUG-21		
Boron (B)-Dissolved	<0.010		0.010	mg/L	13-AUG-21		0.2
Cadmium (Cd)-Dissolved	0.0000123		0.0000050	mg/L	13-AUG-21	0.00004	0.0001
Calcium (Ca)-Dissolved	11.6		0.050	mg/L	13-AUG-21		
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	13-AUG-21		
Chromium (Cr)-Dissolved	0.00068		0.00010	mg/L	13-AUG-21	0.001	
Cobalt (Co)-Dissolved	0.00012		0.00010	mg/L	13-AUG-21		0.0009
Copper (Cu)-Dissolved	0.00047		0.00020	mg/L	13-AUG-21	0.002	0.001
Iron (Fe)-Dissolved	0.322		0.010	mg/L	13-AUG-21	*0.3	*0.3
Lead (Pb)-Dissolved	0.000857	RRV	0.000050	mg/L	17-AUG-21	0.001	0.001
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	13-AUG-21		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2625067-4 NDR-P-01							
Sampled By: TB/MG on 08-AUG-21 @ 16:30							
Matrix: WATER							
Dissolved Metals							
Magnesium (Mg)-Dissolved	3.41		0.0050	mg/L	13-AUG-21		
Manganese (Mn)-Dissolved	0.0265		0.00010	mg/L	13-AUG-21		
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L	13-AUG-21	0.073	0.04
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	13-AUG-21	0.025	0.025
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	13-AUG-21		**0.01
Potassium (K)-Dissolved	0.055		0.050	mg/L	13-AUG-21		
Rubidium (Rb)-Dissolved	0.00035		0.00020	mg/L	13-AUG-21		
Selenium (Se)-Dissolved	0.000155		0.000050	mg/L	13-AUG-21	0.001	0.1
Silicon (Si)-Dissolved	0.825		0.050	mg/L	13-AUG-21		
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	13-AUG-21	0.0001	0.0001
Sodium (Na)-Dissolved	0.507		0.050	mg/L	13-AUG-21		
Strontium (Sr)-Dissolved	0.0253		0.00010	mg/L	13-AUG-21		
Sulfur (S)-Dissolved	<0.50		0.50	mg/L	13-AUG-21		
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	13-AUG-21		
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	13-AUG-21	0.0008	0.0003
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	13-AUG-21		
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	13-AUG-21		
Titanium (Ti)-Dissolved	0.00092		0.00030	mg/L	13-AUG-21		
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	13-AUG-21		0.03
Uranium (U)-Dissolved	0.000013		0.000010	mg/L	13-AUG-21		0.005
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	13-AUG-21		0.006
Zinc (Zn)-Dissolved	0.0049		0.0010	mg/L	13-AUG-21	0.03	0.02
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	13-AUG-21		0.004
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000086		0.000020	ug/L	01-SEP-21		
L2625067-5 NDR-S-01							
Sampled By: TB/MG on 08-AUG-21 @ 14:45							
Matrix: WATER							
Physical Tests							
Conductivity	56.9		1.0	umhos/cm	12-AUG-21		
Hardness (as CaCO3)	37.1	HTC	0.50	mg/L	13-AUG-21		
pH	6.85		0.10	pH units	12-AUG-21	6.5-9.0	6.5-8.5
Total Suspended Solids	<3.0		3.0	mg/L	12-AUG-21		
Total Dissolved Solids	117	DLDS	13	mg/L	12-AUG-21		
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	27.4		1.0	mg/L	12-AUG-21		
Ammonia, Total (as N)	<0.010		0.010	mg/L	13-AUG-21		
Bromide (Br)	<0.10		0.10	mg/L	12-AUG-21		
Chloride (Cl)	<0.50		0.50	mg/L	12-AUG-21	120	
Fluoride (F)	0.021		0.020	mg/L	12-AUG-21	0.12	
Nitrate (as N)	<0.020		0.020	mg/L	12-AUG-21	3	
Nitrite (as N)	<0.010		0.010	mg/L	12-AUG-21	0.06	
Phosphorus (P)-Total	0.0229		0.0010	mg/L	13-AUG-21		*0.01
Sulfate (SO4)	<0.30		0.30	mg/L	12-AUG-21		
Cyanides							

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL) **#2: Ontario PWQO 1994 Guidelines**

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2625067-5 NDR-S-01							
Sampled By: TB/MG on 08-AUG-21 @ 14:45							
Matrix: WATER							
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L	12-AUG-21		
Cyanide, Total	<0.0020		0.0020	mg/L	12-AUG-21		
Cyanide, Free	<0.0020		0.0020	mg/L	12-AUG-21	0.005	
Inorganic Parameters							
Acidity (as CaCO3)	9.0		2.0	mg/L	12-AUG-21		
Total Metals							
Aluminum (Al)-Total	0.156		0.0050	mg/L	12-AUG-21	*0.005	*0.015
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	12-AUG-21		0.02
Arsenic (As)-Total	0.00107		0.00010	mg/L	12-AUG-21	0.005	0.005
Barium (Ba)-Total	0.00425		0.00010	mg/L	12-AUG-21		
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	12-AUG-21		0.011
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	12-AUG-21		
Boron (B)-Total	<0.010		0.010	mg/L	12-AUG-21		0.2
Cadmium (Cd)-Total	0.0000105		0.0000050	mg/L	12-AUG-21	0.00004	0.0001
Calcium (Ca)-Total	10.7		0.050	mg/L	12-AUG-21		
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	12-AUG-21		
Chromium (Cr)-Total	0.00063		0.00050	mg/L	12-AUG-21	0.001	
Cobalt (Co)-Total	0.00025		0.00010	mg/L	12-AUG-21		0.0009
Copper (Cu)-Total	<0.00050		0.00050	mg/L	12-AUG-21	0.002	0.001
Iron (Fe)-Total	0.559		0.010	mg/L	12-AUG-21	*0.3	*0.3
Lead (Pb)-Total	0.000125		0.000050	mg/L	12-AUG-21	0.001	0.001
Lithium (Li)-Total	<0.0010		0.0010	mg/L	12-AUG-21		
Magnesium (Mg)-Total	2.50		0.0050	mg/L	12-AUG-21		
Manganese (Mn)-Total	0.0582		0.00050	mg/L	12-AUG-21		
Mercury (Hg)-Total	0.00060		0.00050	ug/L	18-AUG-21	0.026	0.2
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L	12-AUG-21	0.073	0.04
Nickel (Ni)-Total	0.00079		0.00050	mg/L	12-AUG-21	0.025	0.025
Phosphorus (P)-Total	<0.050		0.050	mg/L	12-AUG-21		**0.01
Potassium (K)-Total	<0.050		0.050	mg/L	12-AUG-21		
Rubidium (Rb)-Total	<0.00020		0.00020	mg/L	12-AUG-21		
Selenium (Se)-Total	0.000183		0.000050	mg/L	12-AUG-21	0.001	0.1
Silicon (Si)-Total	1.63		0.10	mg/L	12-AUG-21		
Silver (Ag)-Total	<0.000050		0.000050	mg/L	12-AUG-21	0.0001	0.0001
Sodium (Na)-Total	0.356		0.050	mg/L	12-AUG-21		
Strontium (Sr)-Total	0.0220		0.0010	mg/L	12-AUG-21		
Sulfur (S)-Total	<0.50		0.50	mg/L	12-AUG-21		
Tellurium (Te)-Total	0.00024		0.00020	mg/L	12-AUG-21		
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	12-AUG-21	0.0008	0.0003
Thorium (Th)-Total	<0.00010		0.00010	mg/L	12-AUG-21		
Tin (Sn)-Total	<0.00010		0.00010	mg/L	12-AUG-21		
Titanium (Ti)-Total	0.00324		0.00030	mg/L	12-AUG-21		
Tungsten (W)-Total	<0.00010		0.00010	mg/L	12-AUG-21		0.03
Uranium (U)-Total	0.000020		0.000010	mg/L	12-AUG-21		0.005
Vanadium (V)-Total	<0.00050		0.00050	mg/L	12-AUG-21		0.006
Zinc (Zn)-Total	0.0045		0.0030	mg/L	12-AUG-21	0.03	0.02
Zirconium (Zr)-Total	0.00025		0.00020	mg/L	12-AUG-21		0.004

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2625067-5 NDR-S-01							
Sampled By: TB/MG on 08-AUG-21 @ 14:45							
Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD			No Unit	13-AUG-21		
Aluminum (Al)-Dissolved	0.145		0.0010	mg/L	13-AUG-21	*0.005	*0.015
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	13-AUG-21		0.02
Arsenic (As)-Dissolved	0.00110		0.00010	mg/L	13-AUG-21	0.005	0.005
Barium (Ba)-Dissolved	0.00416		0.00010	mg/L	13-AUG-21		
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	13-AUG-21		0.011
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	13-AUG-21		
Boron (B)-Dissolved	<0.010		0.010	mg/L	13-AUG-21		0.2
Cadmium (Cd)-Dissolved	0.0000092		0.0000050	mg/L	13-AUG-21	0.00004	0.0001
Calcium (Ca)-Dissolved	11.5		0.050	mg/L	13-AUG-21		
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	13-AUG-21		
Chromium (Cr)-Dissolved	0.00059		0.00010	mg/L	13-AUG-21	0.001	
Cobalt (Co)-Dissolved	0.00021		0.00010	mg/L	13-AUG-21		0.0009
Copper (Cu)-Dissolved	0.00034		0.00020	mg/L	13-AUG-21	0.002	0.001
Iron (Fe)-Dissolved	0.478		0.010	mg/L	13-AUG-21	*0.3	*0.3
Lead (Pb)-Dissolved	0.000081		0.000050	mg/L	13-AUG-21	0.001	0.001
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	13-AUG-21		
Magnesium (Mg)-Dissolved	2.93		0.0050	mg/L	13-AUG-21		
Manganese (Mn)-Dissolved	0.0548		0.00010	mg/L	13-AUG-21		
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L	13-AUG-21	0.073	0.04
Nickel (Ni)-Dissolved	0.00059		0.00050	mg/L	13-AUG-21	0.025	0.025
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	13-AUG-21		**0.01
Potassium (K)-Dissolved	<0.050		0.050	mg/L	13-AUG-21		
Rubidium (Rb)-Dissolved	<0.00020		0.00020	mg/L	13-AUG-21		
Selenium (Se)-Dissolved	0.000157		0.000050	mg/L	13-AUG-21	0.001	0.1
Silicon (Si)-Dissolved	1.59		0.050	mg/L	13-AUG-21		
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	13-AUG-21	0.0001	0.0001
Sodium (Na)-Dissolved	0.397		0.050	mg/L	13-AUG-21		
Strontium (Sr)-Dissolved	0.0228		0.00010	mg/L	13-AUG-21		
Sulfur (S)-Dissolved	<0.50		0.50	mg/L	13-AUG-21		
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	13-AUG-21		
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	13-AUG-21	0.0008	0.0003
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	13-AUG-21		
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	13-AUG-21		
Titanium (Ti)-Dissolved	0.00219		0.00030	mg/L	13-AUG-21		
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	13-AUG-21		0.03
Uranium (U)-Dissolved	0.000017		0.000010	mg/L	13-AUG-21		0.005
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	13-AUG-21		0.006
Zinc (Zn)-Dissolved	0.0045		0.0010	mg/L	13-AUG-21	0.03	0.02
Zirconium (Zr)-Dissolved	0.00029		0.00020	mg/L	13-AUG-21		0.004
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000218		0.000020	ug/L	01-SEP-21		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
RRV	Reported Result Verified By Repeat Analysis
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
PEHR	Parameter Exceeded Recommended Holding Time On Receipt: Proceed With Analysis As Requested.
HTC	Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
ACIDITY-WT	Water	Acidity (as CaCO3)	APHA 2310 B - Potentiometric Titration
ALK-WT	Water	Alkalinity, Total (as CaCO3)	APHA 2320B

This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint.

BR-IC-N-WT	Water	Bromide in Water by IC	EPA 300.1 (mod)

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

CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)

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

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-FREE-CFA-WT	Water	Free Cyanide in water by CFA	ASTM 7237

This analysis is carried out using procedures adapted from ASTM Method 7237 "Free Cyanide with Flow Injection Analysis (FIA) Utilizing Gas Diffusion Separation and Amperometric Detection". Free cyanide is determined by in-line gas diffusion at pH 6 with final determination by colourimetric analysis.

CN-TOT-WT	Water	Cyanide, Total	ISO 14403-2

Total cyanide is determined by the combination of UV digestion and distillation. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

When using this method, high levels of thiocyanate in samples can cause false positives at ~1-2% of the thiocyanate concentration. For samples with detectable cyanide analyzed by this method, ALS recommends analysis for thiocyanate to check for this potential interference

CN-WAD-WT	Water	Cyanide, Weak Acid Diss	APHA 4500CN I-Weak acid Dist Colorimet

Weak acid dissociable cyanide (WAD) is determined by undergoing a distillation procedure. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

EC-SCREEN-WT	Water	Conductivity Screen (Internal Use Only)	APHA 2510

Qualitative analysis of conductivity where required during preparation of other tests - e.g. TDS, metals, etc.

EC-WT	Water	Conductivity	APHA 2510 B

Water samples can be measured directly by immersing the conductivity cell into the sample.

F-IC-N-WT	Water	Fluoride in Water by IC	EPA 300.1 (mod)

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

HARDNESS-CALC-WT	Water	Hardness	APHA 2340 B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-T-U-CVAF-VA	Water	Total Mercury in Water by CVAFS (Ultra)	EPA 1631 REV. E

This analysis is carried out using procedures adapted from Method 1631 Rev. E. by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to a purge and trap concentration step and final reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry.

MEHG-T-GCAF-VA	Water	Total Methylmercury in Water by GCAFS	EPA 1630

This method follows Method 1630 of the US EPA. Samples are distilled under an inert gas flow to isolate methylmercury and minimize matrix interferences. The distillate is analyzed by aqueous phase ethylation, purge and trap, desorption and GC separation. The separated species are then pyrolized to elemental Hg and quantified by cold vapour atomic flourescence spectroscopy. Results are reported "as MeHg".

MET-D-CCMS-WP	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020B (mod)

Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

Reference Information

MET-T-CCMS-WT	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

NH3-F-WT	Water	Ammonia in Water by Fluorescence	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NO2-IC-WT	Water	Nitrite in Water by IC	EPA 300.1 (mod)

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

NO3-IC-WT	Water	Nitrate in Water by IC	EPA 300.1 (mod)

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

P-T-L-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS-L

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.

PH-WT	Water	pH	APHA 4500 H-Electrode

Water samples are analyzed directly by a calibrated pH meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days

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

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

SOLIDS-TDS-WT	Water	Total Dissolved Solids	APHA 2540C

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

SOLIDS-TSS-WT	Water	Suspended solids	APHA 2540 D-Gravimetric

A well-mixed sample is filtered through a weighed standard glass fibre filter and the residue retained is dried in an oven at 104–1°C for a minimum of four hours or until a constant weight is achieved.

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

Chain of Custody numbers:

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

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA	WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA		

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2625067 Report Date: 27-SEP-21

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ACIDITY-WT	**Water**							
Batch R5548686								
WG3595562-3 DUP		**L2624310-1**						
Acidity (as CaCO3)		2.2	2.3		mg/L	3.5	20	12-AUG-21
WG3595562-2 LCS								
Acidity (as CaCO3)			103.1		%		85-115	12-AUG-21
WG3595562-1 MB								
Acidity (as CaCO3)			<2.0		mg/L		2	12-AUG-21
ALK-WT	**Water**							
Batch R5548599								
WG3594904-4 DUP		**WG3594904-3**						
Alkalinity, Total (as CaCO3)		55.4	55.4		mg/L	0.1	20	11-AUG-21
WG3594904-2 LCS								
Alkalinity, Total (as CaCO3)			103.2		%		85-115	11-AUG-21
WG3594904-1 MB								
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	11-AUG-21
Batch R5549413								
WG3595552-4 DUP		**WG3595552-3**						
Alkalinity, Total (as CaCO3)		373	361		mg/L	3.2	20	12-AUG-21
WG3595552-2 LCS								
Alkalinity, Total (as CaCO3)			109.7		%		85-115	12-AUG-21
WG3595552-1 MB								
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	12-AUG-21
Batch R5549416								
WG3595553-4 DUP		**WG3595553-3**						
Alkalinity, Total (as CaCO3)		186	183		mg/L	1.4	20	12-AUG-21
WG3595553-2 LCS								
Alkalinity, Total (as CaCO3)			106.8		%		85-115	12-AUG-21
WG3595553-1 MB								
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	12-AUG-21
BR-IC-N-WT	**Water**							
Batch R5549448								
WG3595677-10 DUP		**WG3595677-8**						
Bromide (Br)		<0.10	<0.10	RPD-NA	mg/L	N/A	20	12-AUG-21
WG3595677-4 DUP		**WG3595677-3**						
Bromide (Br)		<0.10	<0.10	RPD-NA	mg/L	N/A	20	12-AUG-21
WG3595677-2 LCS								
Bromide (Br)			95.7		%		85-115	12-AUG-21
WG3595677-7 LCS								

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BR-IC-N-WT	**Water**							
Batch R5549448								
WG3595677-7 LCS								
Bromide (Br)			105.2		%		85-115	12-AUG-21
WG3595677-1 MB								
Bromide (Br)			<0.10		mg/L		0.1	12-AUG-21
WG3595677-6 MB								
Bromide (Br)			<0.10		mg/L		0.1	12-AUG-21
WG3595677-5 MS		**WG3595677-3**						
Bromide (Br)			97.5		%		75-125	12-AUG-21
WG3595677-9 MS		**WG3595677-8**						
Bromide (Br)			101.3		%		75-125	12-AUG-21
CL-IC-N-WT	**Water**							
Batch R5549448								
WG3595677-10 DUP		**WG3595677-8**						
Chloride (Cl)		<0.50	<0.50	RPD-NA	mg/L	N/A	20	12-AUG-21
WG3595677-4 DUP		**WG3595677-3**						
Chloride (Cl)		25.4	25.4		mg/L	0.1	20	12-AUG-21
WG3595677-2 LCS								
Chloride (Cl)			101.6		%		90-110	12-AUG-21
WG3595677-7 LCS								
Chloride (Cl)			101.5		%		90-110	12-AUG-21
WG3595677-1 MB								
Chloride (Cl)			<0.50		mg/L		0.5	12-AUG-21
WG3595677-6 MB								
Chloride (Cl)			<0.50		mg/L		0.5	12-AUG-21
WG3595677-5 MS		**WG3595677-3**						
Chloride (Cl)			98.3		%		75-125	12-AUG-21
WG3595677-9 MS		**WG3595677-8**						
Chloride (Cl)			105.1		%		75-125	12-AUG-21
CN-FREE-CFA-WT	**Water**							
Batch R5549753								
WG3596051-8 DUP		**WG3596051-10**						
Cyanide, Free		<0.0020	0.0022	RPD-NA	mg/L	N/A	20	12-AUG-21
WG3596051-7 LCS								
Cyanide, Free			87.9		%		80-120	12-AUG-21
WG3596051-6 MB								
Cyanide, Free			<0.0020		mg/L		0.002	12-AUG-21
WG3596051-9 MS		**WG3596051-10**						
Cyanide, Free			103.5		%		75-125	12-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-TOT-WT	**Water**							
Batch R5549753								
WG3596051-8 DUP		**WG3596051-10**						
Cyanide, Total		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	12-AUG-21
WG3596051-7 LCS								
Cyanide, Total			86.1		%		80-120	12-AUG-21
WG3596051-6 MB								
Cyanide, Total			<0.0020		mg/L		0.002	12-AUG-21
WG3596051-9 MS		**WG3596051-10**						
Cyanide, Total			81.6		%		70-130	12-AUG-21
CN-WAD-WT	**Water**							
Batch R5549753								
WG3596051-8 DUP		**WG3596051-10**						
Cyanide, Weak Acid Diss		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	12-AUG-21
WG3596051-7 LCS								
Cyanide, Weak Acid Diss			99.8		%		80-120	12-AUG-21
WG3596051-6 MB								
Cyanide, Weak Acid Diss			<0.0020		mg/L		0.002	12-AUG-21
WG3596051-9 MS		**WG3596051-10**						
Cyanide, Weak Acid Diss			109.3		%		75-125	12-AUG-21
EC-WT	**Water**							
Batch R5548599								
WG3594904-4 DUP		**WG3594904-3**						
Conductivity		148	148		umhos/cm	0.1	10	11-AUG-21
WG3594904-2 LCS								
Conductivity			100.4		%		90-110	11-AUG-21
WG3594904-1 MB								
Conductivity			<1.0		umhos/cm		1	11-AUG-21
Batch R5549413								
WG3595552-4 DUP		**WG3595552-3**						
Conductivity		2150	2140		umhos/cm	0.5	10	12-AUG-21
WG3595552-2 LCS								
Conductivity			96.5		%		90-110	12-AUG-21
WG3595552-1 MB								
Conductivity			<2.0		umhos/cm		2	12-AUG-21
Batch R5549416								
WG3595553-4 DUP		**WG3595553-3**						
Conductivity		612	614		umhos/cm	0.3	10	12-AUG-21
WG3595553-2 LCS								

Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-WT	**Water**							
Batch R5549416								
WG3595553-2 LCS								
Conductivity			96.4		%		90-110	12-AUG-21
WG3595553-1 MB								
Conductivity			<2.0		umhos/cm		2	12-AUG-21
F-IC-N-WT	**Water**							
Batch R5549448								
WG3595677-10 DUP		**WG3595677-8**						
Fluoride (F)		0.021	0.021		mg/L	0.1	20	12-AUG-21
WG3595677-4 DUP		**WG3595677-3**						
Fluoride (F)		0.068	0.069		mg/L	1.3	20	12-AUG-21
WG3595677-2 LCS								
Fluoride (F)			106.0		%		90-110	12-AUG-21
WG3595677-7 LCS								
Fluoride (F)			105.8		%		90-110	12-AUG-21
WG3595677-1 MB								
Fluoride (F)			<0.020		mg/L		0.02	12-AUG-21
WG3595677-6 MB								
Fluoride (F)			<0.020		mg/L		0.02	12-AUG-21
WG3595677-5 MS		**WG3595677-3**						
Fluoride (F)			86.9		%		75-125	12-AUG-21
WG3595677-9 MS		**WG3595677-8**						
Fluoride (F)			109.3		%		75-125	12-AUG-21
HG-T-U-CVAF-VA	**Water**							
Batch R5557183								
WG3599823-3 DUP		**L2623486-1**						
Mercury (Hg)-Total		0.00327	0.00322		ug/L	1.5	20	18-AUG-21
WG3599823-2 LCS								
Mercury (Hg)-Total			99.6		%		80-120	18-AUG-21
WG3599823-1 MB								
Mercury (Hg)-Total			<0.00050		ug/L		0.0005	18-AUG-21
WG3599823-5 MS		**L2625067-1**						
Mercury (Hg)-Total			94.2		%		70-130	18-AUG-21
MEHG-T-GCAF-VA	**Water**							
Batch R5572443								
WG3609796-2 DUP		**L2630460-1**						
Methylmercury (as MeHg)-Total		0.000022	<0.000020	RPD-NA	ug/L	N/A	20	01-SEP-21
WG3609796-3 LCS								

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MEHG-T-GCAF-VA	**Water**							
Batch R5572443								
WG3609796-3 LCS								
Methylmercury (as MeHg)-Total			92.0		%		70-130	01-SEP-21
WG3609796-1 MB								
Methylmercury (as MeHg)-Total			<0.000020		ug/L		0.00002	01-SEP-21
WG3609796-4 MS		**L2625067-5**						
Methylmercury (as MeHg)-Total			100.8		%		70-130	01-SEP-21
MET-D-CCMS-WP	**Water**							
Batch R5552637								
WG3596471-4 DUP		**WG3596471-3**						
Aluminum (Al)-Dissolved		0.0718	0.0725		mg/L	1.0	20	13-AUG-21
Antimony (Sb)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	13-AUG-21
Arsenic (As)-Dissolved		0.00096	0.00093		mg/L	2.2	20	13-AUG-21
Barium (Ba)-Dissolved		0.00566	0.00562		mg/L	0.7	20	13-AUG-21
Beryllium (Be)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	13-AUG-21
Bismuth (Bi)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	13-AUG-21
Boron (B)-Dissolved		<0.010	<0.010	RPD-NA	mg/L	N/A	20	13-AUG-21
Cadmium (Cd)-Dissolved		0.0000095	0.0000130	J	mg/L	0.0000036	0.00001	13-AUG-21
Calcium (Ca)-Dissolved		8.04	8.01		mg/L	0.4	20	13-AUG-21
Cesium (Cs)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	13-AUG-21
Chromium (Cr)-Dissolved		0.00035	0.00035		mg/L	2.3	20	13-AUG-21
Cobalt (Co)-Dissolved		0.00048	0.00048		mg/L	0.8	20	13-AUG-21
Copper (Cu)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	13-AUG-21
Iron (Fe)-Dissolved		0.363	0.355		mg/L	2.1	20	13-AUG-21
Lead (Pb)-Dissolved		0.000052	0.000052		mg/L	0.2	20	13-AUG-21
Lithium (Li)-Dissolved		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	13-AUG-21
Magnesium (Mg)-Dissolved		2.18	2.15		mg/L	1.0	20	13-AUG-21
Manganese (Mn)-Dissolved		0.204	0.202		mg/L	1.0	20	13-AUG-21
Molybdenum (Mo)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	13-AUG-21
Nickel (Ni)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	13-AUG-21
Phosphorus (P)-Dissolved		<0.030	<0.030	RPD-NA	mg/L	N/A	20	13-AUG-21
Potassium (K)-Dissolved		<0.050	<0.050	RPD-NA	mg/L	N/A	20	13-AUG-21
Rubidium (Rb)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	13-AUG-21
Selenium (Se)-Dissolved		0.000094	0.000101		mg/L	7.2	20	13-AUG-21
Silicon (Si)-Dissolved		1.59	1.60		mg/L	0.4	20	13-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5552637								
WG3596471-4 DUP		**WG3596471-3**						
Silver (Ag)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	13-AUG-21
Sodium (Na)-Dissolved		0.155	0.153		mg/L	1.3	20	13-AUG-21
Strontium (Sr)-Dissolved		0.0190	0.0190		mg/L	0.3	20	13-AUG-21
Sulfur (S)-Dissolved		<0.50	<0.50	RPD-NA	mg/L	N/A	20	13-AUG-21
Tellurium (Te)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	13-AUG-21
Thallium (Tl)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	13-AUG-21
Thorium (Th)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	13-AUG-21
Tin (Sn)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	13-AUG-21
Titanium (Ti)-Dissolved		0.00089	0.00094		mg/L	4.9	20	13-AUG-21
Tungsten (W)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	13-AUG-21
Uranium (U)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	13-AUG-21
Vanadium (V)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	13-AUG-21
Zinc (Zn)-Dissolved		0.0045	0.0044		mg/L	2.9	20	13-AUG-21
Zirconium (Zr)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	13-AUG-21
WG3596471-2 LCS								
Aluminum (Al)-Dissolved			102.0		%		80-120	13-AUG-21
Antimony (Sb)-Dissolved			99.4		%		80-120	13-AUG-21
Arsenic (As)-Dissolved			103.1		%		80-120	13-AUG-21
Barium (Ba)-Dissolved			102.7		%		80-120	13-AUG-21
Beryllium (Be)-Dissolved			95.8		%		80-120	13-AUG-21
Bismuth (Bi)-Dissolved			95.8		%		80-120	13-AUG-21
Boron (B)-Dissolved			82.4		%		80-120	13-AUG-21
Cadmium (Cd)-Dissolved			102.2		%		80-120	13-AUG-21
Calcium (Ca)-Dissolved			103.2		%		80-120	13-AUG-21
Cesium (Cs)-Dissolved			103.6		%		80-120	13-AUG-21
Chromium (Cr)-Dissolved			102.0		%		80-120	13-AUG-21
Cobalt (Co)-Dissolved			101.4		%		80-120	13-AUG-21
Copper (Cu)-Dissolved			100.3		%		80-120	13-AUG-21
Iron (Fe)-Dissolved			101.4		%		80-120	13-AUG-21
Lead (Pb)-Dissolved			95.6		%		80-120	13-AUG-21
Lithium (Li)-Dissolved			98.6		%		80-120	13-AUG-21
Magnesium (Mg)-Dissolved			110.3		%		80-120	13-AUG-21
Manganese (Mn)-Dissolved			103.6		%		80-120	13-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5552637								
WG3596471-2 LCS								
Molybdenum (Mo)-Dissolved			100.6		%		80-120	13-AUG-21
Nickel (Ni)-Dissolved			99.4		%		80-120	13-AUG-21
Phosphorus (P)-Dissolved			106.4		%		80-120	13-AUG-21
Potassium (K)-Dissolved			107.3		%		80-120	13-AUG-21
Rubidium (Rb)-Dissolved			102.6		%		80-120	13-AUG-21
Selenium (Se)-Dissolved			100.6		%		80-120	13-AUG-21
Silicon (Si)-Dissolved			101.5		%		80-120	13-AUG-21
Silver (Ag)-Dissolved			100.3		%		80-120	13-AUG-21
Sodium (Na)-Dissolved			105.5		%		80-120	13-AUG-21
Strontium (Sr)-Dissolved			107.2		%		80-120	13-AUG-21
Sulfur (S)-Dissolved			87.5		%		80-120	13-AUG-21
Tellurium (Te)-Dissolved			99.8		%		80-120	13-AUG-21
Thallium (Tl)-Dissolved			95.2		%		80-120	13-AUG-21
Thorium (Th)-Dissolved			94.7		%		80-120	13-AUG-21
Tin (Sn)-Dissolved			101.6		%		80-120	13-AUG-21
Titanium (Ti)-Dissolved			98.5		%		80-120	13-AUG-21
Tungsten (W)-Dissolved			94.6		%		80-120	13-AUG-21
Uranium (U)-Dissolved			94.3		%		80-120	13-AUG-21
Vanadium (V)-Dissolved			102.3		%		80-120	13-AUG-21
Zinc (Zn)-Dissolved			109.2		%		80-120	13-AUG-21
Zirconium (Zr)-Dissolved			97.6		%		80-120	13-AUG-21
WG3596471-1 MB								
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	13-AUG-21
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	13-AUG-21
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	13-AUG-21
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	13-AUG-21
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	13-AUG-21
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	13-AUG-21
Boron (B)-Dissolved			<0.010		mg/L		0.01	13-AUG-21
Cadmium (Cd)-Dissolved			<0.000005(		mg/L		0.000005	13-AUG-21
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	13-AUG-21
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	13-AUG-21
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	13-AUG-21
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	13-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5552637								
WG3596471-1 MB								
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	13-AUG-21
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	13-AUG-21
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	13-AUG-21
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	13-AUG-21
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	13-AUG-21
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	13-AUG-21
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	13-AUG-21
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	13-AUG-21
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	13-AUG-21
Potassium (K)-Dissolved			<0.050		mg/L		0.05	13-AUG-21
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	13-AUG-21
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	13-AUG-21
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	13-AUG-21
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	13-AUG-21
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	13-AUG-21
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	13-AUG-21
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	13-AUG-21
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	13-AUG-21
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	13-AUG-21
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	13-AUG-21
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	13-AUG-21
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	13-AUG-21
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	13-AUG-21
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	13-AUG-21
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	13-AUG-21
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	13-AUG-21
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	13-AUG-21
WG3596471-5 MS		**WG3596471-3**						
Aluminum (Al)-Dissolved			94.8		%		70-130	13-AUG-21
Antimony (Sb)-Dissolved			96.3		%		70-130	13-AUG-21
Arsenic (As)-Dissolved			98.7		%		70-130	13-AUG-21
Barium (Ba)-Dissolved			95.2		%		70-130	13-AUG-21
Beryllium (Be)-Dissolved			92.0		%		70-130	13-AUG-21
Bismuth (Bi)-Dissolved			86.7		%		70-130	13-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5552637								
WG3596471-5 MS		**WG3596471-3**						
Boron (B)-Dissolved			79.8		%		70-130	13-AUG-21
Cadmium (Cd)-Dissolved			95.3		%		70-130	13-AUG-21
Calcium (Ca)-Dissolved			N/A	MS-B	%		-	13-AUG-21
Cesium (Cs)-Dissolved			94.5		%		70-130	13-AUG-21
Chromium (Cr)-Dissolved			95.4		%		70-130	13-AUG-21
Cobalt (Co)-Dissolved			96.0		%		70-130	13-AUG-21
Copper (Cu)-Dissolved			95.1		%		70-130	13-AUG-21
Iron (Fe)-Dissolved			95.3		%		70-130	13-AUG-21
Lead (Pb)-Dissolved			89.1		%		70-130	13-AUG-21
Lithium (Li)-Dissolved			98.0		%		70-130	13-AUG-21
Magnesium (Mg)-Dissolved			N/A	MS-B	%		-	13-AUG-21
Manganese (Mn)-Dissolved			N/A	MS-B	%		-	13-AUG-21
Molybdenum (Mo)-Dissolved			93.1		%		70-130	13-AUG-21
Nickel (Ni)-Dissolved			95.7		%		70-130	13-AUG-21
Phosphorus (P)-Dissolved			97.5		%		70-130	13-AUG-21
Potassium (K)-Dissolved			97.9		%		70-130	13-AUG-21
Rubidium (Rb)-Dissolved			96.7		%		70-130	13-AUG-21
Selenium (Se)-Dissolved			97.5		%		70-130	13-AUG-21
Silicon (Si)-Dissolved			92.1		%		70-130	13-AUG-21
Silver (Ag)-Dissolved			85.3		%		70-130	13-AUG-21
Sodium (Na)-Dissolved			101.1		%		70-130	13-AUG-21
Strontium (Sr)-Dissolved			98.9		%		70-130	13-AUG-21
Sulfur (S)-Dissolved			93.5		%		70-130	13-AUG-21
Tellurium (Te)-Dissolved			91.4		%		70-130	13-AUG-21
Thallium (Tl)-Dissolved			87.9		%		70-130	13-AUG-21
Thorium (Th)-Dissolved			90.6		%		70-130	13-AUG-21
Tin (Sn)-Dissolved			94.0		%		70-130	13-AUG-21
Titanium (Ti)-Dissolved			94.7		%		70-130	13-AUG-21
Tungsten (W)-Dissolved			90.2		%		70-130	13-AUG-21
Uranium (U)-Dissolved			88.7		%		70-130	13-AUG-21
Vanadium (V)-Dissolved			96.4		%		70-130	13-AUG-21
Zinc (Zn)-Dissolved			97.7		%		70-130	13-AUG-21
Zirconium (Zr)-Dissolved			94.0		%		70-130	13-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5549156								
WG3595372-4 DUP		**WG3595372-3**						
Aluminum (Al)-Total		0.123	0.139		mg/L	12	20	12-AUG-21
Antimony (Sb)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	12-AUG-21
Arsenic (As)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	12-AUG-21
Barium (Ba)-Total		0.0032	0.0031		mg/L	3.9	20	12-AUG-21
Beryllium (Be)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	12-AUG-21
Bismuth (Bi)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	12-AUG-21
Boron (B)-Total		<0.10	<0.10	RPD-NA	mg/L	N/A	20	12-AUG-21
Cadmium (Cd)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	12-AUG-21
Calcium (Ca)-Total		24.1	24.6		mg/L	2.0	20	12-AUG-21
Chromium (Cr)-Total		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	12-AUG-21
Cesium (Cs)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	12-AUG-21
Cobalt (Co)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	12-AUG-21
Copper (Cu)-Total		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	12-AUG-21
Iron (Fe)-Total		0.10	0.10		mg/L	0.6	20	12-AUG-21
Lead (Pb)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	12-AUG-21
Lithium (Li)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	12-AUG-21
Magnesium (Mg)-Total		6.82	6.84		mg/L	0.2	20	12-AUG-21
Manganese (Mn)-Total		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	12-AUG-21
Molybdenum (Mo)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	12-AUG-21
Nickel (Ni)-Total		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	12-AUG-21
Phosphorus (P)-Total		<0.50	<0.50	RPD-NA	mg/L	N/A	20	12-AUG-21
Potassium (K)-Total		0.84	0.82		mg/L	2.5	20	12-AUG-21
Rubidium (Rb)-Total		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	12-AUG-21
Selenium (Se)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	12-AUG-21
Silicon (Si)-Total		1.1	1.1		mg/L	0.5	20	12-AUG-21
Silver (Ag)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	12-AUG-21
Sodium (Na)-Total		4.20	4.20		mg/L	0.2	20	12-AUG-21
Strontium (Sr)-Total		0.047	0.049		mg/L	3.2	20	12-AUG-21
Sulfur (S)-Total		<5.0	<5.0	RPD-NA	mg/L	N/A	20	12-AUG-21
Thallium (Tl)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	12-AUG-21
Tellurium (Te)-Total		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	12-AUG-21
Thorium (Th)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	12-AUG-21
Tin (Sn)-Total		<0.0010	<0.0010		mg/L			12-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5549156								
WG3595372-4 DUP		**WG3595372-3**						
Tin (Sn)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	12-AUG-21
Titanium (Ti)-Total		0.0033	<0.0030	RPD-NA	mg/L	N/A	20	12-AUG-21
Tungsten (W)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	12-AUG-21
Uranium (U)-Total		0.0106	0.0108		mg/L	2.0	20	12-AUG-21
Vanadium (V)-Total		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	12-AUG-21
Zinc (Zn)-Total		0.119	0.120		mg/L	0.9	20	12-AUG-21
Zirconium (Zr)-Total		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	12-AUG-21
WG3595372-2 LCS								
Aluminum (Al)-Total			98.9		%		80-120	12-AUG-21
Antimony (Sb)-Total			102.2		%		80-120	12-AUG-21
Arsenic (As)-Total			103.6		%		80-120	12-AUG-21
Barium (Ba)-Total			99.5		%		80-120	12-AUG-21
Beryllium (Be)-Total			100.1		%		80-120	12-AUG-21
Bismuth (Bi)-Total			100.0		%		80-120	12-AUG-21
Boron (B)-Total			97.0		%		80-120	12-AUG-21
Cadmium (Cd)-Total			101.5		%		80-120	12-AUG-21
Calcium (Ca)-Total			97.4		%		80-120	12-AUG-21
Chromium (Cr)-Total			97.4		%		80-120	12-AUG-21
Cesium (Cs)-Total			103.3		%		80-120	12-AUG-21
Cobalt (Co)-Total			98.3		%		80-120	12-AUG-21
Copper (Cu)-Total			97.7		%		80-120	12-AUG-21
Iron (Fe)-Total			99.1		%		80-120	12-AUG-21
Lead (Pb)-Total			100.8		%		80-120	12-AUG-21
Lithium (Li)-Total			96.4		%		80-120	12-AUG-21
Magnesium (Mg)-Total			100.2		%		80-120	12-AUG-21
Manganese (Mn)-Total			97.8		%		80-120	12-AUG-21
Molybdenum (Mo)-Total			100.9		%		80-120	12-AUG-21
Nickel (Ni)-Total			97.2		%		80-120	12-AUG-21
Phosphorus (P)-Total			107.5		%		70-130	12-AUG-21
Potassium (K)-Total			98.8		%		80-120	12-AUG-21
Rubidium (Rb)-Total			102.3		%		80-120	12-AUG-21
Selenium (Se)-Total			103.7		%		80-120	12-AUG-21
Silicon (Si)-Total			102.6		%		60-140	12-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5549156								
WG3595372-2 LCS								
Silver (Ag)-Total			102.3		%		80-120	12-AUG-21
Sodium (Na)-Total			98.8		%		80-120	12-AUG-21
Strontium (Sr)-Total			100.3		%		80-120	12-AUG-21
Sulfur (S)-Total			100.3		%		80-120	12-AUG-21
Thallium (Tl)-Total			99.6		%		80-120	12-AUG-21
Tellurium (Te)-Total			101.0		%		80-120	12-AUG-21
Thorium (Th)-Total			101.0		%		80-120	12-AUG-21
Tin (Sn)-Total			102.4		%		80-120	12-AUG-21
Titanium (Ti)-Total			96.6		%		80-120	12-AUG-21
Tungsten (W)-Total			100.4		%		80-120	12-AUG-21
Uranium (U)-Total			103.1		%		80-120	12-AUG-21
Vanadium (V)-Total			99.0		%		80-120	12-AUG-21
Zinc (Zn)-Total			95.0		%		80-120	12-AUG-21
Zirconium (Zr)-Total			97.0		%		80-120	12-AUG-21
WG3595372-1 MB								
Aluminum (Al)-Total			<0.0050		mg/L		0.005	12-AUG-21
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	12-AUG-21
Arsenic (As)-Total			<0.00010		mg/L		0.0001	12-AUG-21
Barium (Ba)-Total			<0.00010		mg/L		0.0001	12-AUG-21
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	12-AUG-21
Bismuth (Bi)-Total			<0.000050		mg/L		0.00005	12-AUG-21
Boron (B)-Total			<0.010		mg/L		0.01	12-AUG-21
Cadmium (Cd)-Total			<0.000005(		mg/L		0.000005	12-AUG-21
Calcium (Ca)-Total			<0.050		mg/L		0.05	12-AUG-21
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	12-AUG-21
Cesium (Cs)-Total			<0.000010		mg/L		0.00001	12-AUG-21
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	12-AUG-21
Copper (Cu)-Total			<0.00050		mg/L		0.0005	12-AUG-21
Iron (Fe)-Total			<0.010		mg/L		0.01	12-AUG-21
Lead (Pb)-Total			<0.000050		mg/L		0.00005	12-AUG-21
Lithium (Li)-Total			<0.0010		mg/L		0.001	12-AUG-21
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	12-AUG-21
Manganese (Mn)-Total			<0.00050		mg/L		0.0005	12-AUG-21
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	12-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5549156								
WG3595372-1 MB								
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	12-AUG-21
Phosphorus (P)-Total			<0.050		mg/L		0.05	12-AUG-21
Potassium (K)-Total			<0.050		mg/L		0.05	12-AUG-21
Rubidium (Rb)-Total			<0.00020		mg/L		0.0002	12-AUG-21
Selenium (Se)-Total			<0.000050		mg/L		0.00005	12-AUG-21
Silicon (Si)-Total			<0.10		mg/L		0.1	12-AUG-21
Silver (Ag)-Total			<0.000050		mg/L		0.00005	12-AUG-21
Sodium (Na)-Total			<0.050		mg/L		0.05	12-AUG-21
Strontium (Sr)-Total			<0.0010		mg/L		0.001	12-AUG-21
Sulfur (S)-Total			<0.50		mg/L		0.5	12-AUG-21
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	12-AUG-21
Tellurium (Te)-Total			<0.00020		mg/L		0.0002	12-AUG-21
Thorium (Th)-Total			<0.00010		mg/L		0.0001	12-AUG-21
Tin (Sn)-Total			<0.00010		mg/L		0.0001	12-AUG-21
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	12-AUG-21
Tungsten (W)-Total			<0.00010		mg/L		0.0001	12-AUG-21
Uranium (U)-Total			<0.000010		mg/L		0.00001	12-AUG-21
Vanadium (V)-Total			<0.00050		mg/L		0.0005	12-AUG-21
Zinc (Zn)-Total			<0.0030		mg/L		0.003	12-AUG-21
Zirconium (Zr)-Total			<0.00020		mg/L		0.0002	12-AUG-21
WG3595372-5 MS		**WG3595372-3**						
Aluminum (Al)-Total			N/A	MS-B	%		-	12-AUG-21
Antimony (Sb)-Total			106.0		%		70-130	12-AUG-21
Arsenic (As)-Total			106.3		%		70-130	12-AUG-21
Barium (Ba)-Total			101.0		%		70-130	12-AUG-21
Beryllium (Be)-Total			103.9		%		70-130	12-AUG-21
Bismuth (Bi)-Total			104.6		%		70-130	12-AUG-21
Boron (B)-Total			97.3		%		70-130	12-AUG-21
Cadmium (Cd)-Total			101.8		%		70-130	12-AUG-21
Calcium (Ca)-Total			N/A	MS-B	%		-	12-AUG-21
Chromium (Cr)-Total			97.9		%		70-130	12-AUG-21
Cesium (Cs)-Total			105.9		%		70-130	12-AUG-21
Cobalt (Co)-Total			102.1		%		70-130	12-AUG-21
Copper (Cu)-Total			97.4		%		70-130	12-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5549156								
WG3595372-5 MS		**WG3595372-3**						
Iron (Fe)-Total			N/A	MS-B	%		-	12-AUG-21
Lead (Pb)-Total			105.1		%		70-130	12-AUG-21
Lithium (Li)-Total			96.1		%		70-130	12-AUG-21
Magnesium (Mg)-Total			N/A	MS-B	%		-	12-AUG-21
Manganese (Mn)-Total			100.4		%		70-130	12-AUG-21
Molybdenum (Mo)-Total			101.7		%		70-130	12-AUG-21
Nickel (Ni)-Total			99.6		%		70-130	12-AUG-21
Phosphorus (P)-Total			122.9		%		70-130	12-AUG-21
Potassium (K)-Total			98.3		%		70-130	12-AUG-21
Rubidium (Rb)-Total			108.2		%		70-130	12-AUG-21
Selenium (Se)-Total			108.7		%		70-130	12-AUG-21
Silicon (Si)-Total			N/A	MS-B	%		-	12-AUG-21
Silver (Ag)-Total			106.4		%		70-130	12-AUG-21
Sodium (Na)-Total			N/A	MS-B	%		-	12-AUG-21
Strontium (Sr)-Total			N/A	MS-B	%		-	12-AUG-21
Sulfur (S)-Total			99.1		%		70-130	12-AUG-21
Thallium (Tl)-Total			104.7		%		70-130	12-AUG-21
Tellurium (Te)-Total			102.7		%		70-130	12-AUG-21
Thorium (Th)-Total			95.5		%		70-130	12-AUG-21
Tin (Sn)-Total			104.6		%		70-130	12-AUG-21
Titanium (Ti)-Total			96.5		%		70-130	12-AUG-21
Tungsten (W)-Total			100.3		%		70-130	12-AUG-21
Uranium (U)-Total			N/A	MS-B	%		-	12-AUG-21
Vanadium (V)-Total			101.7		%		70-130	12-AUG-21
Zinc (Zn)-Total			N/A	MS-B	%		-	12-AUG-21
Zirconium (Zr)-Total			93.6		%		70-130	12-AUG-21
NH3-F-WT	**Water**							
Batch R5551303								
WG3595218-8 DUP		**WG3595218-10**						
Ammonia, Total (as N)		0.037	0.038		mg/L	1.1	20	13-AUG-21
WG3595218-7 LCS								
Ammonia, Total (as N)			104.4		%		85-115	13-AUG-21
WG3595218-6 MB								
Ammonia, Total (as N)			<0.010		mg/L		0.01	13-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NH3-F-WT	**Water**							
Batch R5551303								
WG3595218-9 MS		**WG3595218-10**						
Ammonia, Total (as N)			95.0		%		75-125	13-AUG-21
NO2-IC-WT	**Water**							
Batch R5549448								
WG3595677-10 DUP		**WG3595677-8**						
Nitrite (as N)		<0.010	<0.010	RPD-NA	mg/L	N/A	20	12-AUG-21
WG3595677-4 DUP		**WG3595677-3**						
Nitrite (as N)		0.251	0.251		mg/L	0.0	20	12-AUG-21
WG3595677-2 LCS								
Nitrite (as N)			101.6		%		90-110	12-AUG-21
WG3595677-7 LCS								
Nitrite (as N)			101.3		%		90-110	12-AUG-21
WG3595677-1 MB								
Nitrite (as N)			<0.010		mg/L		0.01	12-AUG-21
WG3595677-6 MB								
Nitrite (as N)			<0.010		mg/L		0.01	12-AUG-21
WG3595677-5 MS		**WG3595677-3**						
Nitrite (as N)			101.3		%		75-125	12-AUG-21
WG3595677-9 MS		**WG3595677-8**						
Nitrite (as N)			105.2		%		75-125	12-AUG-21
NO3-IC-WT	**Water**							
Batch R5549448								
WG3595677-10 DUP		**WG3595677-8**						
Nitrate (as N)		<0.020	<0.020	RPD-NA	mg/L	N/A	20	12-AUG-21
WG3595677-4 DUP		**WG3595677-3**						
Nitrate (as N)		11.5	11.5		mg/L	0.1	20	12-AUG-21
WG3595677-2 LCS								
Nitrate (as N)			100.8		%		90-110	12-AUG-21
WG3595677-7 LCS								
Nitrate (as N)			100.7		%		90-110	12-AUG-21
WG3595677-1 MB								
Nitrate (as N)			<0.020		mg/L		0.02	12-AUG-21
WG3595677-6 MB								
Nitrate (as N)			<0.020		mg/L		0.02	12-AUG-21
WG3595677-5 MS		**WG3595677-3**						
Nitrate (as N)			N/A	MS-B	%		-	12-AUG-21
WG3595677-9 MS		**WG3595677-8**						

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NO3-IC-WT	**Water**							
Batch R5549448								
WG3595677-9 MS		**WG3595677-8**						
Nitrate (as N)			104.1		%		75-125	12-AUG-21
P-T-L-COL-WP	**Water**							
Batch R5549886								
WG3596115-15 DUP		**L2623633-2**						
Phosphorus (P)-Total		0.0100	0.0099		mg/L	1.5	20	13-AUG-21
WG3596115-14 LCS								
Phosphorus (P)-Total			94.3		%		80-120	13-AUG-21
WG3596115-13 MB								
Phosphorus (P)-Total			<0.0010		mg/L		0.001	13-AUG-21
WG3596115-16 MS		**L2623633-3**						
Phosphorus (P)-Total			N/A	MS-B	%		-	13-AUG-21
PH-WT	**Water**							
Batch R5548599								
WG3594904-4 DUP		**WG3594904-3**						
pH		7.76	7.69	J	pH units	0.07	0.2	11-AUG-21
WG3594904-2 LCS								
pH			6.99		pH units		6.9-7.1	11-AUG-21
Batch R5549413								
WG3595552-4 DUP		**WG3595552-3**						
pH		7.69	7.57	J	pH units	0.12	0.2	12-AUG-21
WG3595552-2 LCS								
pH			6.99		pH units		6.9-7.1	12-AUG-21
Batch R5549416								
WG3595553-4 DUP		**WG3595553-3**						
pH		8.27	8.30	J	pH units	0.03	0.2	12-AUG-21
WG3595553-2 LCS								
pH			6.99		pH units		6.9-7.1	12-AUG-21
SO4-IC-N-WT	**Water**							
Batch R5549448								
WG3595677-10 DUP		**WG3595677-8**						
Sulfate (SO4)		<0.30	<0.30	RPD-NA	mg/L	N/A	20	12-AUG-21
WG3595677-4 DUP		**WG3595677-3**						
Sulfate (SO4)		420	420		mg/L	0.0	20	12-AUG-21
WG3595677-2 LCS								
Sulfate (SO4)			102.9		%		90-110	12-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SO4-IC-N-WT	**Water**							
Batch R5549448								
WG3595677-7 LCS								
Sulfate (SO4)			102.5		%		90-110	12-AUG-21
WG3595677-1 MB								
Sulfate (SO4)			<0.30		mg/L		0.3	12-AUG-21
WG3595677-6 MB								
Sulfate (SO4)			<0.30		mg/L		0.3	12-AUG-21
WG3595677-5 MS		**WG3595677-3**						
Sulfate (SO4)			N/A	MS-B	%		-	12-AUG-21
WG3595677-9 MS		**WG3595677-8**						
Sulfate (SO4)			106.5		%		75-125	12-AUG-21
SOLIDS-TDS-WT	**Water**							
Batch R5548937								
WG3594846-3 DUP		**L2624619-2**						
Total Dissolved Solids		5730	5290		mg/L	8.0	20	12-AUG-21
WG3594846-2 LCS								
Total Dissolved Solids			100.8		%		85-115	12-AUG-21
WG3594846-1 MB								
Total Dissolved Solids			<10		mg/L		10	12-AUG-21
SOLIDS-TSS-WT	**Water**							
Batch R5548901								
WG3594845-3 DUP		**L2624619-2**						
Total Suspended Solids		351	343		mg/L	2.3	20	12-AUG-21
WG3594845-2 LCS								
Total Suspended Solids			95.8		%		85-115	12-AUG-21
WG3594845-1 MB								
Total Suspended Solids			<3.0		mg/L		3	12-AUG-21

Quality Control Report

Workorder: L2625067 Report Date: 27-SEP-21

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Legend:

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

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Quality Control Report

Workorder: L2625067 Report Date: 27-SEP-21

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
pH							
	3	06-AUG-21 13:15	12-AUG-21 00:00	4	5	days	EHTR

Legend & Qualifier Definitions:

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

Notes*:
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2625067 were received on 11-AUG-21 09:00.

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

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

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

Thursday, September 16, 2021

Gayle Braun
ALS Environmental
60 Northland Rd, Unit 1
Waterloo Canada, ON N2V 2B8

Re: ALS Workorder: 2108328
Project Name:
Project Number: L2625067

Dear Braun:

Two water samples were received from ALS Environmental, on 8/16/2021. The samples were scheduled for the following analysis:

Radium-226

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

<original signed by>
For
ALS Environmental
Katie M. OBrien
Project Manager

Accreditations: ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
California (CA)	2926
Colorado (CO)	CO01099
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
PJ-LA (DoD ELAP/ISO 170250)	95377
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO010992018-1
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	TN02976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280

40 CFR Part 136: All analyses for Clean Water Act samples are analyzed using the 40 CFR Part 136 specified method and include all the QC requirements.

2108328

Radium-226:
The samples were prepared and analyzed according to the current revision of SOP 783.

All remaining acceptance criteria were met.

ALS -- Fort Collins

Sample Number(s) Cross-Reference Table

OrderNum: 2108328
Client Name: ALS Environmental
Client Project Name:
Client Project Number: L2625067
Client PO Number: L2625067

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
L2625067-3	2108328-1		WATER	06-Aug-21	
L2625067-5	2108328-2		WATER	08-Aug-21	

ALS Environmental

2108328-C

L2625067

MISSISSAUGA

Subcontract Request Form

Subcontract To:

ALS ENVIRONMENTAL - FORT COLLINS, COLORADO, USA
225 COMMERCE DRIVE
FORT COLLINS,CO 80524

2108328

NOTES: Please reference on final report and invoice: PO# *L2625067*
ALS requires QC data to be provided with your final results.

Please see enclosed 2 sample(s) in 2 Container(s)

SAMPLE NUMBER	ANALYTICAL REQUIRED	DATE SAMPLED / DUE DATE	Priority Flag
L2625067-3 NDR-S-04		**8/6/2021**	
	Ra226 by Alpha Spec, MDC=0.01 Bq/L (RA226-ALPHASPEC-FC 1)	9/3/2021	
L2625067-5 NDR-S-01		**8/8/2021**	
	Ra226 by Alpha Spec, MDC=0.01 Bq/L (RA226-ALPHASPEC-FC 1)	9/3/2021	

Subcontract Info Contact: Amanda Fazekas (905) 507-6910
Analysis and reporting info contact: Gayle Braun
5730 COOPERS AVENUE, UNIT #26
MISSISSAUGA,ON L4Z 2E9
Phone: (905) 507-6910 Email: gayle.braun@alsglobal.com

Please email confirmation of receipt to: gayle.braun@alsglobal.com

Shipped By: _____ Date Shipped: _____

Received By: <original signed by> Date Received: 8/16/21 1589

Verified By: _____ Date Verified: _____

Temperature: _____

Sample Integrity Issues: _____

ALS Environmental - Fort Colllins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: ALS CANADA Workorder No: 2108328

Project Manager: KMB Initials: AXK Date: 08/17/2021

		N/A	YES	NO
1.	Are airbills / shipping documents present and/or removable?		X	
	Tracking number: 3172022991			
2.	Are custody seals on **shipping** containers intact?	X		
3.	Are custody seals on **sample** containers intact?	X		
4.	Is there a COC (chain-of-custody) present?		X	
5.	Is the COC in agreement with samples received? (IDs, dates, times, # of samples, # of containers, matrix, requested analyses, etc.)		X	
6.	Are short-hold samples present?			X
7.	Are all samples within holding times for the requested analyses?		X	
8.	Were all sample containers received intact? (not broken or leaking)		X	
9.	Is there sufficient sample for the requested analyses?		X	
10.	Are samples in proper containers for requested analyses? (form 250, *Sample Handling Guidelines*)		X	
11.	Are all aqueous samples preserved correctly, if required? (excluding volatiles)		X	
12.	Are all samples requiring no headspace (VOC, GRO, RSK/MEE, radon) free of bubbles > 6 mm (1/4 inch) diameter? (i.e. size of green pea)	X		
13.	Were the samples shipped on ice?		X	
14.	Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #5	RAD ONLY		X

Cooler #:	1						
Temperature (°C):	23.4						
# of custody seals on cooler:	0						
External µR/hr reading:	11						
Background µR/hr reading:	13						

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? **YES** (If no, see Form 008.)

*** Please provide details here for NO responses to boxes above - for 2 thru 5 & 7 thru 12, notify PM & continue w/ login.**

Were unpreserved bottles pH checked? NA All client bottle ID's vs ALS lab ID's double-checked by: AK

If applicable, was the client contacted? **NA** Contact: _____ Date/Time: _____

Project Manager Signature / Date: _____<original signed by> 8/20/21

Form 201r30.xls
03/18/2021

*IR Gun #5, VWR SN 192272629

Client:	ALS Environmental	**Date:**	*16-Sep-21*
Project:	L2625067	**Work Order:**	2108328
Sample ID:	L2625067-3	**Lab ID:**	2108328-1
Legal Location:		**Matrix:**	WATER
Collection Date:	8/6/2021	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Radium-226 by Radon Emanation - Method 903.1		**SOP 783**		Prep Date: **8/20/2021**		PrepBy: **TRB**
Ra-226	0 (+/- 0.0037)	U	0.0072	BQ/l	NA	9/11/2021 16:15
Carr: BARIUM	*93.5*		*40-110*	*%REC*	DL = NA	9/11/2021 16:15

Client:	ALS Environmental	**Date:**	*16-Sep-21*
Project:	L2625067	**Work Order:**	2108328
Sample ID:	L2625067-5	**Lab ID:**	2108328-2
Legal Location:		**Matrix:**	WATER
Collection Date:	8/8/2021	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Radium-226 by Radon Emanation - Method 903.1		**SOP 783**		Prep Date: **8/20/2021**		PrepBy: **TRB**
Ra-226	0.00098 (+/- 0.0024)	U	0.0046	BQ/l	NA	9/11/2021 16:15
Carr: BARIUM	*84*		*40-110*	*%REC*	DL = NA	9/11/2021 16:15

Client:	ALS Environmental	**Date:**	*16-Sep-21*
Project:	L2625067	**Work Order:**	2108328
Sample ID:	L2625067-5	**Lab ID:**	2108328-2
Legal Location:		**Matrix:**	WATER
Collection Date:	8/8/2021	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed

Explanation of Qualifiers

Radiochemistry:

- "Report Limit" is the MDC

U or ND - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.
# - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.
G - Sample density differs by more than 15% of LCS density.
D - DER is greater than Control Limit

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).

U or ND - Indicates that the compound was analyzed for but not detected.

E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.

M - Duplicate injection precision was not met.

N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.

Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.

* - Duplicate analysis (relative percent difference) not within control limits.

S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.

B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.

E - Analyte concentration exceeds the upper level of the calibration range.

J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).

A - A tentatively identified compound is a suspected aldol-condensation product.

X - The analyte was diluted below an accurate quantitation level.

* - The spike recovery is equal to or outside the control criteria used.

+ - The relative percent difference (RPD) equals or exceeds the control criteria.

G - A pattern resembling gasoline was detected in this sample.

D - A pattern resembling diesel was detected in this sample.

M - A pattern resembling motor oil was detected in this sample.

C - A pattern resembling crude oil was detected in this sample.

4 - A pattern resembling JP-4 was detected in this sample.

5 - A pattern resembling JP-5 was detected in this sample.

H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.

L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.

Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
- gasoline
- JP-8
- diesel
- mineral spirits
- motor oil
- Stoddard solvent
- bunker C

Batch ID: **RE210820-8-1** Instrument ID: **Alpha Scin** Method: **Radium-226 by Radon Emanation**

LCS Sample ID: **RE210820-8** Units: **BQ/l** Analysis Date: **9/11/2021 17:20**

Client ID: Run ID: **RE210820-8A** Prep Date: **8/20/2021** DF: **NA**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	DER Ref Value	DER	DER Limit	Qual
Ra-226	1.59 (+/- 0.396)	0.0151	1.731		91.8	67-120					P,Y1,M3
Carr: BARIUM	15300		15010		102	40-110					Y1

MB Sample ID: **RE210820-8** Units: **BQ/l** Analysis Date: **9/11/2021 16:46**

Client ID: Run ID: **RE210820-8A** Prep Date: **8/20/2021** DF: **NA**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	DER Ref Value	DER	DER Limit	Qual
Ra-226	-0.00036 (+/- 0.0018)	0.0039									Y1,U
Carr: BARIUM	15300		15010		102	40-110					Y1

The following samples were analyzed in this batch: 2108328-1 2108328-2

Chain of Custody (COC) / Analytical Request Form

COC Number: 20 -

Page of

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Report To	Contact and company name below will appear on the final report
Company:	Wood E&IS
Contact:	Dale Klodnicki
Phone:	(647) 993-4243
	Company address below will appear on the final report
Street:	2020 Winston Park Dirve, Suite 600
City/Province:	Oakville, ON
Postal Code:	L6H 6X7
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Wood E&IS
Contact:	Dale Klodnicki

Reports / Recipients

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)

Merge QC/QCI Reports with COA ☑ YES ☐ NO ☐ N/A

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax dale.klodnicki@woodplc.com

Email 2 trevor.baetz@woodplc.com

Email 3 michael.godard@woodplc.com

Invoice Recipients

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax APInvoice.Canada@woodplc.com

Email 2 dale.klodnicki@woodplc.com

Turnaround Time (TAT) Requested

☑ Routine [R] if received by 3pm M-F - no surcharges apply

☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum

☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum

☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum

☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum

☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.

Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests.

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

AFFIX ALS BARCODE LABEL HERE (ALS use only)

Project Information

ALS Account # / Quote #:	Q86725
Job #:	OMEMA2002
PO / AFE:	OMEMA2002.2021C.200.5120.573000
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (ALS use only): L2625067 R

ALS Contact: Gayle Braun Sampler: TB / MG

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	F/P	Dissolved Metals	Total Metals	Acidity, Alkalinity, Hardness, pH	Anions, Conductivity	Total & Free Cyanide	Cyanide WAD	Total Mercury by CVAFS (Ultra)	Total Mthylmercury by GCAFS	Ammonia, Total Phosphorus	Radium 226	Total Suspended Solids	Total Dissolved Solids			SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	WBR-P-02	7-Aug-21	11:45	SW	8		R	R	R	R	R	R	R	R	R		R	R					
	WBR-P-01	7-Aug-21	13:30	SW	8		R	R	R	R	R	R	R	R	R		R	R					
	NDR-S-04	6-Aug-21	13:15	SW	9		R	R	R	R	R	R	R	R	R	R	R	R					
	NDR-P-01	8-Aug-21	16:30	SW	8		R	R	R	R	R	R	R	R	R		R	R					
	NDR-S-01	8-Aug-21	14:45	SW	9		R	R	R	R	R	R	R	R	R	R	R	R					

L2625067-COFC

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

[Combined] - Ontario PWQO+CCME-FAL-WATER

Federal CCME Canadian Environmental Quality Guidelines (JUL, 2012)

WBR-P-02 – Field Temp: 19.72 / pH: 5.95 | WBR-P-01 – Field Temp: 21.41 / pH: 6.21

NDR-S-04 – Field Temp: 19.7 / pH: 6.7 | NDR-P-01 – Field Temp: 20.82 / pH: 5.79

NDR-S-01 – Field Temp: 19.8 / pH: 4.45 | WBR-P-02 – Field Temp: 19.8 / pH: 5.95

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☑ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				7.4	4.3		

SHIPMENT RELEASE (client use)

Released by: T. Baetz	Date: 09-Aug-21 // 07:00	Time:

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by: AP	Date: 11-AUG-21	Time: 9:00

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

AUG 2020 FRONT

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

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

Wood Environment & Infrastructure Solutions
ATTN: Dale Klodnicki
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7

Date Received: 13-AUG-21
Report Date: 27-SEP-21 08:42 (MT)
Version: FINAL

Client Phone: 905-568-2929

Certificate of Analysis

Lab Work Order #: L2626399

Project P.O. #: OMEMA2002.2021C.200.5120.573000
Job Reference: OMEMA2002
C of C Numbers:
Legal Site Desc:

<original signed by>

Gayle Braun
Senior Account Manager

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

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2626399-1 NDR-S-02							
Sampled By: TB/MG on 11-AUG-21 @ 10:30							
Matrix: WATER							
Physical Tests							
Conductivity	141		1.0	umhos/cm	14-AUG-21		
Hardness (as CaCO3)	68.9	HTC	0.50	mg/L	16-AUG-21		
pH	7.53	HTD	0.10	pH units	17-AUG-21	6.5-9.0	6.5-8.5
Total Suspended Solids	3.3		3.0	mg/L	14-AUG-21		
Total Dissolved Solids	128	DLDS	13	mg/L	13-AUG-21		
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	63.7		1.0	mg/L	17-AUG-21		
Ammonia, Total (as N)	0.025		0.010	mg/L	16-AUG-21		
Bromide (Br)	<0.10		0.10	mg/L	16-AUG-21		
Chloride (Cl)	5.94		0.50	mg/L	16-AUG-21	120	
Fluoride (F)	0.030		0.020	mg/L	16-AUG-21	0.12	
Nitrate (as N)	<0.020		0.020	mg/L	16-AUG-21	3	
Nitrite (as N)	<0.010		0.010	mg/L	16-AUG-21	0.06	
Phosphorus (P)-Total	0.0243		0.0010	mg/L	18-AUG-21		*0.01
Sulfate (SO4)	<0.30		0.30	mg/L	16-AUG-21		
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L	17-AUG-21		
Cyanide, Total	<0.0020		0.0020	mg/L	17-AUG-21		
Cyanide, Free	<0.0020		0.0020	mg/L	17-AUG-21	0.005	
Inorganic Parameters							
Acidity (as CaCO3)	4.8		2.0	mg/L	14-AUG-21		
Total Metals							
Aluminum (Al)-Total	0.0774		0.0050	mg/L	13-AUG-21	*0.005	*0.015
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.02
Arsenic (As)-Total	0.00102		0.00010	mg/L	13-AUG-21	0.005	0.005
Barium (Ba)-Total	0.00599		0.00010	mg/L	13-AUG-21		
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.011
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	13-AUG-21		
Boron (B)-Total	<0.010		0.010	mg/L	13-AUG-21		0.2
Cadmium (Cd)-Total	0.0000064		0.0000050	mg/L	13-AUG-21	0.00004	0.0001
Calcium (Ca)-Total	19.5		0.050	mg/L	13-AUG-21		
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	13-AUG-21		
Chromium (Cr)-Total	0.00052		0.00050	mg/L	13-AUG-21	0.001	
Cobalt (Co)-Total	0.00020		0.00010	mg/L	13-AUG-21		0.0009
Copper (Cu)-Total	0.00050		0.00050	mg/L	13-AUG-21	0.002	0.001
Iron (Fe)-Total	0.281		0.010	mg/L	13-AUG-21	0.3	0.3
Lead (Pb)-Total	0.000103		0.000050	mg/L	13-AUG-21	0.001	0.001
Lithium (Li)-Total	<0.0010		0.0010	mg/L	13-AUG-21		
Magnesium (Mg)-Total	4.89		0.0050	mg/L	13-AUG-21		
Manganese (Mn)-Total	0.169		0.00050	mg/L	13-AUG-21		
Mercury (Hg)-Total	0.00127		0.00050	ug/L	26-AUG-21	0.026	0.2
Molybdenum (Mo)-Total	0.000078		0.000050	mg/L	13-AUG-21	0.073	0.04
Nickel (Ni)-Total	0.00061		0.00050	mg/L	13-AUG-21	0.025	0.025
Phosphorus (P)-Total	<0.050		0.050	mg/L	13-AUG-21		**0.01
Potassium (K)-Total	0.231		0.050	mg/L	13-AUG-21		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2626399-1 NDR-S-02							
Sampled By: TB/MG on 11-AUG-21 @ 10:30							
Matrix: WATER							
Total Metals							
Rubidium (Rb)-Total	0.00072		0.00020	mg/L	13-AUG-21		
Selenium (Se)-Total	0.000120		0.000050	mg/L	13-AUG-21	0.001	0.1
Silicon (Si)-Total	1.51		0.10	mg/L	13-AUG-21		
Silver (Ag)-Total	<0.000050		0.000050	mg/L	13-AUG-21	0.0001	0.0001
Sodium (Na)-Total	4.58		0.050	mg/L	13-AUG-21		
Strontium (Sr)-Total	0.0356		0.0010	mg/L	13-AUG-21		
Sulfur (S)-Total	<0.50		0.50	mg/L	13-AUG-21		
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	13-AUG-21		
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	13-AUG-21	0.0008	0.0003
Thorium (Th)-Total	<0.00010		0.00010	mg/L	13-AUG-21		
Tin (Sn)-Total	<0.00010		0.00010	mg/L	13-AUG-21		
Titanium (Ti)-Total	0.00280		0.00030	mg/L	13-AUG-21		
Tungsten (W)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.03
Uranium (U)-Total	0.000038		0.000010	mg/L	13-AUG-21		0.005
Vanadium (V)-Total	0.00057		0.00050	mg/L	13-AUG-21		0.006
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	13-AUG-21	0.03	0.02
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	13-AUG-21		0.004
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD			No Unit	16-AUG-21		
Aluminum (Al)-Dissolved	0.0363		0.0010	mg/L	17-AUG-21	*0.005	*0.015
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.02
Arsenic (As)-Dissolved	0.00099		0.00010	mg/L	17-AUG-21	0.005	0.005
Barium (Ba)-Dissolved	0.00596		0.00010	mg/L	17-AUG-21		
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.011
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	17-AUG-21		
Boron (B)-Dissolved	<0.010		0.010	mg/L	17-AUG-21		0.2
Cadmium (Cd)-Dissolved	0.0000052		0.0000050	mg/L	17-AUG-21	0.00004	0.0001
Calcium (Ca)-Dissolved	19.2		0.050	mg/L	17-AUG-21		
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21		
Chromium (Cr)-Dissolved	0.00035		0.00010	mg/L	17-AUG-21	0.001	
Cobalt (Co)-Dissolved	0.00018		0.00010	mg/L	17-AUG-21		0.0009
Copper (Cu)-Dissolved	0.00042		0.00020	mg/L	17-AUG-21	0.002	0.001
Iron (Fe)-Dissolved	0.243		0.010	mg/L	17-AUG-21	0.3	0.3
Lead (Pb)-Dissolved	0.000072		0.000050	mg/L	17-AUG-21	0.001	0.001
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	17-AUG-21		
Magnesium (Mg)-Dissolved	5.52		0.0050	mg/L	17-AUG-21		
Manganese (Mn)-Dissolved	0.168		0.00010	mg/L	17-AUG-21		
Molybdenum (Mo)-Dissolved	0.000063		0.000050	mg/L	17-AUG-21	0.073	0.04
Nickel (Ni)-Dissolved	0.00052		0.00050	mg/L	17-AUG-21	0.025	0.025
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	17-AUG-21		**0.01
Potassium (K)-Dissolved	0.222		0.050	mg/L	17-AUG-21		
Rubidium (Rb)-Dissolved	0.00075		0.00020	mg/L	17-AUG-21		
Selenium (Se)-Dissolved	0.000104		0.000050	mg/L	17-AUG-21	0.001	0.1
Silicon (Si)-Dissolved	1.36		0.050	mg/L	17-AUG-21		
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21	0.0001	0.0001
Sodium (Na)-Dissolved	4.76		0.050	mg/L	17-AUG-21		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.

* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2626399-1 NDR-S-02							
Sampled By: TB/MG on 11-AUG-21 @ 10:30							
Matrix: WATER							
Dissolved Metals							
Strontium (Sr)-Dissolved	0.0379		0.00010	mg/L	17-AUG-21		
Sulfur (S)-Dissolved	0.68		0.50	mg/L	17-AUG-21		
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	17-AUG-21		
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21	0.0008	0.0003
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		
Titanium (Ti)-Dissolved	0.00131		0.00030	mg/L	17-AUG-21		
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.03
Uranium (U)-Dissolved	0.000032		0.000010	mg/L	17-AUG-21		0.005
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	17-AUG-21		0.006
Zinc (Zn)-Dissolved	0.0303	RRV	0.0010	mg/L	18-AUG-21	*0.03	*0.02
Zirconium (Zr)-Dissolved	0.00023		0.00020	mg/L	17-AUG-21		0.004
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000102		0.000020	ug/L	01-SEP-21		
L2626399-2 NDR-TRIB-02							
Sampled By: TB/MG on 11-AUG-21 @ 13:00							
Matrix: WATER						#1	#2
Physical Tests							
Conductivity	37.3		1.0	umhos/cm	14-AUG-21		
Hardness (as CaCO3)	22.4	HTC	0.50	mg/L	16-AUG-21		
pH	6.21	HTD	0.10	pH units	17-AUG-21	*6.5-9.0	*6.5-8.5
Total Suspended Solids	5.5		3.0	mg/L	14-AUG-21		
Total Dissolved Solids	78		10	mg/L	13-AUG-21		
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	<1.0		1.0	mg/L	17-AUG-21		
Ammonia, Total (as N)	<0.010		0.010	mg/L	16-AUG-21		
Bromide (Br)	<0.10		0.10	mg/L	16-AUG-21		
Chloride (Cl)	<0.50		0.50	mg/L	16-AUG-21	120	
Fluoride (F)	<0.020		0.020	mg/L	16-AUG-21	0.12	
Nitrate (as N)	<0.020		0.020	mg/L	16-AUG-21	3	
Nitrite (as N)	<0.010		0.010	mg/L	16-AUG-21	0.06	
Phosphorus (P)-Total	0.0262		0.0010	mg/L	18-AUG-21		*0.01
Sulfate (SO4)	<0.30		0.30	mg/L	16-AUG-21		
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L	17-AUG-21		
Cyanide, Total	<0.0020		0.0020	mg/L	17-AUG-21		
Cyanide, Free	<0.0020		0.0020	mg/L	17-AUG-21	0.005	
Inorganic Parameters							
Acidity (as CaCO3)	12.1		2.0	mg/L	14-AUG-21		
Total Metals							
Aluminum (Al)-Total	0.108		0.0050	mg/L	13-AUG-21	*0.005	*0.015
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.02
Arsenic (As)-Total	0.00097		0.00010	mg/L	13-AUG-21	0.005	0.005
Barium (Ba)-Total	0.00373		0.00010	mg/L	13-AUG-21		
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.011

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2626399-2 NDR-TRIB-02							
Sampled By: TB/MG on 11-AUG-21 @ 13:00							
Matrix: WATER							
Total Metals							
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	13-AUG-21		
Boron (B)-Total	<0.010		0.010	mg/L	13-AUG-21		0.2
Cadmium (Cd)-Total	0.0000231		0.0000050	mg/L	13-AUG-21	0.00004	0.0001
Calcium (Ca)-Total	6.13		0.050	mg/L	13-AUG-21		
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	13-AUG-21		
Chromium (Cr)-Total	0.00058		0.00050	mg/L	13-AUG-21	0.001	
Cobalt (Co)-Total	0.00087		0.00010	mg/L	13-AUG-21		0.0009
Copper (Cu)-Total	<0.00050		0.00050	mg/L	13-AUG-21	0.002	0.001
Iron (Fe)-Total	0.677		0.010	mg/L	13-AUG-21	*0.3	*0.3
Lead (Pb)-Total	0.000579		0.000050	mg/L	13-AUG-21	0.001	0.001
Lithium (Li)-Total	<0.0010		0.0010	mg/L	13-AUG-21		
Magnesium (Mg)-Total	1.73		0.0050	mg/L	13-AUG-21		
Manganese (Mn)-Total	0.278		0.00050	mg/L	13-AUG-21		
Mercury (Hg)-Total	0.00141		0.00050	ug/L	26-AUG-21	0.026	0.2
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L	13-AUG-21	0.073	0.04
Nickel (Ni)-Total	0.00056		0.00050	mg/L	13-AUG-21	0.025	0.025
Phosphorus (P)-Total	<0.050		0.050	mg/L	13-AUG-21		**0.01
Potassium (K)-Total	0.096		0.050	mg/L	13-AUG-21		
Rubidium (Rb)-Total	0.00034		0.00020	mg/L	13-AUG-21		
Selenium (Se)-Total	0.000105		0.000050	mg/L	13-AUG-21	0.001	0.1
Silicon (Si)-Total	3.01		0.10	mg/L	13-AUG-21		
Silver (Ag)-Total	<0.000050		0.000050	mg/L	13-AUG-21	0.0001	0.0001
Sodium (Na)-Total	0.432		0.050	mg/L	13-AUG-21		
Strontium (Sr)-Total	0.0136		0.0010	mg/L	13-AUG-21		
Sulfur (S)-Total	<0.50		0.50	mg/L	13-AUG-21		
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	13-AUG-21		
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	13-AUG-21	0.0008	0.0003
Thorium (Th)-Total	<0.00010		0.00010	mg/L	13-AUG-21		
Tin (Sn)-Total	<0.00010		0.00010	mg/L	13-AUG-21		
Titanium (Ti)-Total	0.00281		0.00030	mg/L	13-AUG-21		
Tungsten (W)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.03
Uranium (U)-Total	<0.000010		0.000010	mg/L	13-AUG-21		0.005
Vanadium (V)-Total	<0.00050		0.00050	mg/L	13-AUG-21		0.006
Zinc (Zn)-Total	0.0057		0.0030	mg/L	13-AUG-21	0.03	0.02
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	13-AUG-21		0.004
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD			No Unit	16-AUG-21		
Aluminum (Al)-Dissolved	0.100		0.0010	mg/L	17-AUG-21	*0.005	*0.015
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.02
Arsenic (As)-Dissolved	0.00093		0.00010	mg/L	17-AUG-21	0.005	0.005
Barium (Ba)-Dissolved	0.00327		0.00010	mg/L	17-AUG-21		
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.011
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	17-AUG-21		
Boron (B)-Dissolved	<0.010		0.010	mg/L	17-AUG-21		0.2
Cadmium (Cd)-Dissolved	0.0000228		0.0000050	mg/L	17-AUG-21	0.00004	0.0001

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2626399-2 NDR-TRIB-02 Sampled By: TB/MG on 11-AUG-21 @ 13:00 Matrix: WATER							
Dissolved Metals							
Calcium (Ca)-Dissolved	6.19		0.050	mg/L	17-AUG-21		
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21		
Chromium (Cr)-Dissolved	0.00060		0.00010	mg/L	17-AUG-21	0.001	
Cobalt (Co)-Dissolved	0.00081		0.00010	mg/L	17-AUG-21		0.0009
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	17-AUG-21	0.002	0.001
Iron (Fe)-Dissolved	0.586		0.010	mg/L	17-AUG-21	*0.3	*0.3
Lead (Pb)-Dissolved	0.000471		0.000050	mg/L	17-AUG-21	0.001	0.001
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	17-AUG-21		
Magnesium (Mg)-Dissolved	1.92		0.0050	mg/L	17-AUG-21		
Manganese (Mn)-Dissolved	0.241		0.00010	mg/L	17-AUG-21		
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L	17-AUG-21	0.073	0.04
Nickel (Ni)-Dissolved	0.00051		0.00050	mg/L	17-AUG-21	0.025	0.025
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	17-AUG-21		**0.01
Potassium (K)-Dissolved	0.109		0.050	mg/L	17-AUG-21		
Rubidium (Rb)-Dissolved	0.00035		0.00020	mg/L	17-AUG-21		
Selenium (Se)-Dissolved	0.000093		0.000050	mg/L	17-AUG-21	0.001	0.1
Silicon (Si)-Dissolved	3.10		0.050	mg/L	17-AUG-21		
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21	0.0001	0.0001
Sodium (Na)-Dissolved	0.432		0.050	mg/L	17-AUG-21		
Strontium (Sr)-Dissolved	0.0138		0.00010	mg/L	17-AUG-21		
Sulfur (S)-Dissolved	<0.50		0.50	mg/L	17-AUG-21		
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	17-AUG-21		
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21	0.0008	0.0003
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		
Titanium (Ti)-Dissolved	0.00272		0.00030	mg/L	17-AUG-21		
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.03
Uranium (U)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21		0.005
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	17-AUG-21		0.006
Zinc (Zn)-Dissolved	0.0064		0.0010	mg/L	17-AUG-21	0.03	0.02
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	17-AUG-21		0.004
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000127		0.000020	ug/L	01-SEP-21		
L2626399-3 NDR-TRIB-01 Sampled By: TB/MG on 11-AUG-21 @ 15:45 Matrix: WATER						#1	#2
Physical Tests							
Conductivity	135		1.0	umhos/cm	14-AUG-21		
Hardness (as CaCO3)	73.4	HTC	0.50	mg/L	16-AUG-21		
pH	7.35	HTD	0.10	pH units	17-AUG-21	6.5-9.0	6.5-8.5
Total Suspended Solids	<3.0		3.0	mg/L	15-AUG-21		
Total Dissolved Solids	99	DLDS	13	mg/L	17-AUG-21		
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	71.9		1.0	mg/L	17-AUG-21		
Ammonia, Total (as N)	0.011		0.010	mg/L	16-AUG-21		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL) **#2: Ontario PWQO 1994 Guidelines**

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2626399-3 NDR-TRIB-01							
Sampled By: TB/MG on 11-AUG-21 @ 15:45							
Matrix: WATER							
Anions and Nutrients							
Bromide (Br)	<0.10		0.10	mg/L	16-AUG-21		
Chloride (Cl)	<0.50		0.50	mg/L	16-AUG-21	120	
Fluoride (F)	0.034		0.020	mg/L	16-AUG-21	0.12	
Nitrate (as N)	<0.020		0.020	mg/L	16-AUG-21	3	
Nitrite (as N)	<0.010		0.010	mg/L	16-AUG-21	0.06	
Phosphorus (P)-Total	0.0433		0.0010	mg/L	18-AUG-21		*0.01
Sulfate (SO4)	<0.30		0.30	mg/L	16-AUG-21		
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L	17-AUG-21		
Cyanide, Total	<0.0020		0.0020	mg/L	17-AUG-21		
Cyanide, Free	<0.0020		0.0020	mg/L	17-AUG-21	0.005	
Inorganic Parameters							
Acidity (as CaCO3)	8.5		2.0	mg/L	14-AUG-21		
Total Metals							
Aluminum (Al)-Total	0.0310		0.0050	mg/L	13-AUG-21	*0.005	*0.015
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.02
Arsenic (As)-Total	0.00104		0.00010	mg/L	13-AUG-21	0.005	0.005
Barium (Ba)-Total	0.00905		0.00010	mg/L	13-AUG-21		
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.011
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	13-AUG-21		
Boron (B)-Total	<0.010		0.010	mg/L	13-AUG-21		0.2
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	13-AUG-21	0.00004	0.0001
Calcium (Ca)-Total	20.6		0.050	mg/L	13-AUG-21		
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	13-AUG-21		
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	13-AUG-21	0.001	
Cobalt (Co)-Total	0.00076		0.00010	mg/L	13-AUG-21		0.0009
Copper (Cu)-Total	<0.00050		0.00050	mg/L	13-AUG-21	0.002	0.001
Iron (Fe)-Total	0.791		0.010	mg/L	13-AUG-21	*0.3	*0.3
Lead (Pb)-Total	0.000077		0.000050	mg/L	13-AUG-21	0.001	0.001
Lithium (Li)-Total	<0.0010		0.0010	mg/L	13-AUG-21		
Magnesium (Mg)-Total	5.30		0.0050	mg/L	13-AUG-21		
Manganese (Mn)-Total	0.550		0.00050	mg/L	13-AUG-21		
Mercury (Hg)-Total	0.00104		0.00050	ug/L	26-AUG-21	0.026	0.2
Molybdenum (Mo)-Total	0.000055		0.000050	mg/L	13-AUG-21	0.073	0.04
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	13-AUG-21	0.025	0.025
Phosphorus (P)-Total	<0.050		0.050	mg/L	13-AUG-21		**0.01
Potassium (K)-Total	0.306		0.050	mg/L	13-AUG-21		
Rubidium (Rb)-Total	0.00105		0.00020	mg/L	13-AUG-21		
Selenium (Se)-Total	0.000091		0.000050	mg/L	13-AUG-21	0.001	0.1
Silicon (Si)-Total	1.64		0.10	mg/L	13-AUG-21		
Silver (Ag)-Total	<0.000050		0.000050	mg/L	13-AUG-21	0.0001	0.0001
Sodium (Na)-Total	1.23		0.050	mg/L	13-AUG-21		
Strontium (Sr)-Total	0.0347		0.0010	mg/L	13-AUG-21		
Sulfur (S)-Total	<0.50		0.50	mg/L	13-AUG-21		
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	13-AUG-21		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2626399-3 NDR-TRIB-01 Sampled By: TB/MG on 11-AUG-21 @ 15:45 Matrix: WATER							
Total Metals							
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	13-AUG-21	0.0008	0.0003
Thorium (Th)-Total	<0.00010		0.00010	mg/L	13-AUG-21		
Tin (Sn)-Total	<0.00010		0.00010	mg/L	13-AUG-21		
Titanium (Ti)-Total	0.00082		0.00030	mg/L	13-AUG-21		
Tungsten (W)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.03
Uranium (U)-Total	0.000014		0.000010	mg/L	13-AUG-21		0.005
Vanadium (V)-Total	<0.00050		0.00050	mg/L	13-AUG-21		0.006
Zinc (Zn)-Total	0.0031		0.0030	mg/L	13-AUG-21	0.03	0.02
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	13-AUG-21		0.004
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD			No Unit	16-AUG-21		
Aluminum (Al)-Dissolved	0.0253		0.0010	mg/L	17-AUG-21	*0.005	*0.015
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.02
Arsenic (As)-Dissolved	0.00094		0.00010	mg/L	17-AUG-21	0.005	0.005
Barium (Ba)-Dissolved	0.00897		0.00010	mg/L	17-AUG-21		
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.011
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	17-AUG-21		
Boron (B)-Dissolved	<0.010		0.010	mg/L	17-AUG-21		0.2
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	17-AUG-21	0.00004	0.0001
Calcium (Ca)-Dissolved	21.1		0.050	mg/L	17-AUG-21		
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21		
Chromium (Cr)-Dissolved	0.00024		0.00010	mg/L	17-AUG-21	0.001	
Cobalt (Co)-Dissolved	0.00064		0.00010	mg/L	17-AUG-21		0.0009
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	17-AUG-21	0.002	0.001
Iron (Fe)-Dissolved	0.530		0.010	mg/L	17-AUG-21	*0.3	*0.3
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	17-AUG-21	0.001	0.001
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	17-AUG-21		
Magnesium (Mg)-Dissolved	5.99		0.0050	mg/L	17-AUG-21		
Manganese (Mn)-Dissolved	0.525		0.00010	mg/L	17-AUG-21		
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L	17-AUG-21	0.073	0.04
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	17-AUG-21	0.025	0.025
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	17-AUG-21		**0.01
Potassium (K)-Dissolved	0.324		0.050	mg/L	17-AUG-21		
Rubidium (Rb)-Dissolved	0.00114		0.00020	mg/L	17-AUG-21		
Selenium (Se)-Dissolved	0.000070		0.000050	mg/L	17-AUG-21	0.001	0.1
Silicon (Si)-Dissolved	1.58		0.050	mg/L	17-AUG-21		
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21	0.0001	0.0001
Sodium (Na)-Dissolved	1.27		0.050	mg/L	17-AUG-21		
Strontium (Sr)-Dissolved	0.0365		0.00010	mg/L	17-AUG-21		
Sulfur (S)-Dissolved	<0.50		0.50	mg/L	17-AUG-21		
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	17-AUG-21		
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21	0.0008	0.0003
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		
Titanium (Ti)-Dissolved	0.00065		0.00030	mg/L	17-AUG-21		
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.03

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2626399-3 NDR-TRIB-01 Sampled By: TB/MG on 11-AUG-21 @ 15:45 Matrix: WATER							
Dissolved Metals							
Uranium (U)-Dissolved	0.000012		0.000010	mg/L	17-AUG-21		0.005
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	17-AUG-21		0.006
Zinc (Zn)-Dissolved	0.0027		0.0010	mg/L	17-AUG-21	0.03	0.02
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	17-AUG-21		0.004
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000136		0.000020	ug/L	01-SEP-21		
L2626399-4 NDR-GERLK Sampled By: TB/MG on 11-AUG-21 @ 17:30 Matrix: WATER						#1	#2
Physical Tests							
Conductivity	273		1.0	umhos/cm	14-AUG-21		
Hardness (as CaCO3)	140	HTC	0.50	mg/L	16-AUG-21		
pH	8.24	HTD	0.10	pH units	17-AUG-21	6.5-9.0	6.5-8.5
Total Suspended Solids	<3.0		3.0	mg/L	15-AUG-21		
Total Dissolved Solids	183	DLDS	20	mg/L	17-AUG-21		
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	153		1.0	mg/L	17-AUG-21		
Ammonia, Total (as N)	0.015		0.010	mg/L	16-AUG-21		
Bromide (Br)	<0.10		0.10	mg/L	16-AUG-21		
Chloride (Cl)	<0.50		0.50	mg/L	16-AUG-21	120	
Fluoride (F)	0.073		0.020	mg/L	16-AUG-21	0.12	
Nitrate (as N)	<0.020		0.020	mg/L	16-AUG-21	3	
Nitrite (as N)	<0.010		0.010	mg/L	16-AUG-21	0.06	
Phosphorus (P)-Total	0.0116		0.0010	mg/L	18-AUG-21		*0.01
Sulfate (SO4)	1.30		0.30	mg/L	16-AUG-21		
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L	17-AUG-21		
Cyanide, Total	<0.0020		0.0020	mg/L	17-AUG-21		
Cyanide, Free	<0.0020		0.0020	mg/L	17-AUG-21	0.005	
Inorganic Parameters							
Acidity (as CaCO3)	<2.0	NR:PH8	2.0	mg/L	14-AUG-21		
Total Metals							
Aluminum (Al)-Total	0.0065		0.0050	mg/L	13-AUG-21	*0.005	0.015
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.02
Arsenic (As)-Total	0.00054		0.00010	mg/L	13-AUG-21	0.005	0.005
Barium (Ba)-Total	0.0154		0.00010	mg/L	13-AUG-21		
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.011
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	13-AUG-21		
Boron (B)-Total	<0.010		0.010	mg/L	13-AUG-21		0.2
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	13-AUG-21	0.00004	0.0001
Calcium (Ca)-Total	40.1		0.050	mg/L	13-AUG-21		
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	13-AUG-21		
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	13-AUG-21	0.001	
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.0009

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2626399-4 NDR-GERLK Sampled By: TB/MG on 11-AUG-21 @ 17:30 Matrix: WATER							
Total Metals							
Copper (Cu)-Total	<0.00050		0.00050	mg/L	13-AUG-21	0.002	0.001
Iron (Fe)-Total	0.076		0.010	mg/L	13-AUG-21	0.3	0.3
Lead (Pb)-Total	<0.000050		0.000050	mg/L	13-AUG-21	0.001	0.001
Lithium (Li)-Total	0.0016		0.0010	mg/L	13-AUG-21		
Magnesium (Mg)-Total	9.77		0.0050	mg/L	13-AUG-21		
Manganese (Mn)-Total	0.0266		0.00050	mg/L	13-AUG-21		
Mercury (Hg)-Total	0.00088		0.00050	ug/L	26-AUG-21	0.026	0.2
Molybdenum (Mo)-Total	0.000173		0.000050	mg/L	13-AUG-21	0.073	0.04
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	13-AUG-21	0.025	0.025
Phosphorus (P)-Total	<0.050		0.050	mg/L	13-AUG-21		**0.01
Potassium (K)-Total	1.05		0.050	mg/L	13-AUG-21		
Rubidium (Rb)-Total	0.00166		0.00020	mg/L	13-AUG-21		
Selenium (Se)-Total	0.000062		0.000050	mg/L	13-AUG-21	0.001	0.1
Silicon (Si)-Total	2.16		0.10	mg/L	13-AUG-21		
Silver (Ag)-Total	<0.000050		0.000050	mg/L	13-AUG-21	0.0001	0.0001
Sodium (Na)-Total	3.47		0.050	mg/L	13-AUG-21		
Strontium (Sr)-Total	0.0733		0.0010	mg/L	13-AUG-21		
Sulfur (S)-Total	0.67		0.50	mg/L	13-AUG-21		
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	13-AUG-21		
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	13-AUG-21	0.0008	0.0003
Thorium (Th)-Total	<0.00010		0.00010	mg/L	13-AUG-21		
Tin (Sn)-Total	<0.00010		0.00010	mg/L	13-AUG-21		
Titanium (Ti)-Total	<0.00030		0.00030	mg/L	13-AUG-21		
Tungsten (W)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.03
Uranium (U)-Total	0.000039		0.000010	mg/L	13-AUG-21		0.005
Vanadium (V)-Total	<0.00050		0.00050	mg/L	13-AUG-21		0.006
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	13-AUG-21	0.03	0.02
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	13-AUG-21		0.004
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD			No Unit	16-AUG-21		
Aluminum (Al)-Dissolved	0.0016		0.0010	mg/L	17-AUG-21	0.005	0.015
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.02
Arsenic (As)-Dissolved	0.00049		0.00010	mg/L	17-AUG-21	0.005	0.005
Barium (Ba)-Dissolved	0.0158		0.00010	mg/L	17-AUG-21		
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.011
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	17-AUG-21		
Boron (B)-Dissolved	0.014		0.010	mg/L	17-AUG-21		0.2
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	17-AUG-21	0.00004	0.0001
Calcium (Ca)-Dissolved	41.1		0.050	mg/L	17-AUG-21		
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21		
Chromium (Cr)-Dissolved	0.00017		0.00010	mg/L	17-AUG-21	0.001	
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.0009
Copper (Cu)-Dissolved	0.00021		0.00020	mg/L	17-AUG-21	0.002	0.001
Iron (Fe)-Dissolved	0.032		0.010	mg/L	17-AUG-21	0.3	0.3
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	17-AUG-21	0.001	0.001
Lithium (Li)-Dissolved	0.0016		0.0010	mg/L	17-AUG-21		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL) **#2: Ontario PWQO 1994 Guidelines**

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2626399-4 NDR-GERLK Sampled By: TB/MG on 11-AUG-21 @ 17:30 Matrix: WATER							
Dissolved Metals							
Magnesium (Mg)-Dissolved	11.2		0.0050	mg/L	17-AUG-21		
Manganese (Mn)-Dissolved	0.00344		0.00010	mg/L	17-AUG-21		
Molybdenum (Mo)-Dissolved	0.000159		0.000050	mg/L	17-AUG-21	0.073	0.04
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	17-AUG-21	0.025	0.025
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	17-AUG-21		**0.01
Potassium (K)-Dissolved	1.09		0.050	mg/L	17-AUG-21		
Rubidium (Rb)-Dissolved	0.00170		0.00020	mg/L	17-AUG-21		
Selenium (Se)-Dissolved	0.000057		0.000050	mg/L	17-AUG-21	0.001	0.1
Silicon (Si)-Dissolved	2.22		0.050	mg/L	17-AUG-21		
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21	0.0001	0.0001
Sodium (Na)-Dissolved	3.64		0.050	mg/L	17-AUG-21		
Strontium (Sr)-Dissolved	0.0796		0.00010	mg/L	17-AUG-21		
Sulfur (S)-Dissolved	0.85		0.50	mg/L	17-AUG-21		
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	17-AUG-21		
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21	0.0008	0.0003
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	17-AUG-21		
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.03
Uranium (U)-Dissolved	0.000039		0.000010	mg/L	17-AUG-21		0.005
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	17-AUG-21		0.006
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	17-AUG-21	0.03	0.02
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	17-AUG-21		0.004
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000077		0.000020	ug/L	01-SEP-21		
L2626399-5 NDR-MARLK Sampled By: TB/MG on 11-AUG-21 @ 16:45 Matrix: WATER							
Physical Tests							
Conductivity	120		1.0	umhos/cm	14-AUG-21		
Hardness (as CaCO3)	64.7	HTC	0.50	mg/L	16-AUG-21		
pH	7.74	HTD	0.10	pH units	17-AUG-21	6.5-9.0	6.5-8.5
Total Suspended Solids	<3.0		3.0	mg/L	15-AUG-21		
Total Dissolved Solids	88	DLDS	13	mg/L	17-AUG-21		
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	63.3		1.0	mg/L	17-AUG-21		
Ammonia, Total (as N)	<0.010		0.010	mg/L	16-AUG-21		
Bromide (Br)	<0.10		0.10	mg/L	16-AUG-21		
Chloride (Cl)	<0.50		0.50	mg/L	16-AUG-21	120	
Fluoride (F)	0.030		0.020	mg/L	16-AUG-21	0.12	
Nitrate (as N)	<0.020		0.020	mg/L	16-AUG-21	3	
Nitrite (as N)	<0.010		0.010	mg/L	16-AUG-21	0.06	
Phosphorus (P)-Total	0.0166		0.0010	mg/L	18-AUG-21		*0.01
Sulfate (SO4)	0.33		0.30	mg/L	16-AUG-21		
Cyanides							

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
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Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL) **#2: Ontario PWQO 1994 Guidelines**

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2626399-5 NDR-MARLK Sampled By: TB/MG on 11-AUG-21 @ 16:45 Matrix: WATER							
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L	17-AUG-21		
Cyanide, Total	<0.0020		0.0020	mg/L	17-AUG-21		
Cyanide, Free	<0.0020		0.0020	mg/L	17-AUG-21	0.005	
Inorganic Parameters							
Acidity (as CaCO3)	<2.0		2.0	mg/L	14-AUG-21		
Total Metals							
Aluminum (Al)-Total	0.0243		0.0050	mg/L	13-AUG-21	*0.005	*0.015
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.02
Arsenic (As)-Total	0.00060		0.00010	mg/L	13-AUG-21	0.005	0.005
Barium (Ba)-Total	0.00569		0.00010	mg/L	13-AUG-21		
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.011
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	13-AUG-21		
Boron (B)-Total	<0.010		0.010	mg/L	13-AUG-21		0.2
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	13-AUG-21	0.00004	0.0001
Calcium (Ca)-Total	18.4		0.050	mg/L	13-AUG-21		
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	13-AUG-21		
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	13-AUG-21	0.001	
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.0009
Copper (Cu)-Total	<0.00050		0.00050	mg/L	13-AUG-21	0.002	0.001
Iron (Fe)-Total	0.132		0.010	mg/L	13-AUG-21	0.3	0.3
Lead (Pb)-Total	<0.000050		0.000050	mg/L	13-AUG-21	0.001	0.001
Lithium (Li)-Total	<0.0010		0.0010	mg/L	13-AUG-21		
Magnesium (Mg)-Total	4.54		0.0050	mg/L	13-AUG-21		
Manganese (Mn)-Total	0.0234		0.00050	mg/L	13-AUG-21		
Mercury (Hg)-Total	0.00113		0.00050	ug/L	26-AUG-21	0.026	0.2
Molybdenum (Mo)-Total	0.000053		0.000050	mg/L	13-AUG-21	0.073	0.04
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	13-AUG-21	0.025	0.025
Phosphorus (P)-Total	<0.050		0.050	mg/L	13-AUG-21		**0.01
Potassium (K)-Total	0.421		0.050	mg/L	13-AUG-21		
Rubidium (Rb)-Total	0.00093		0.00020	mg/L	13-AUG-21		
Selenium (Se)-Total	0.000069		0.000050	mg/L	13-AUG-21	0.001	0.1
Silicon (Si)-Total	0.94		0.10	mg/L	13-AUG-21		
Silver (Ag)-Total	<0.000050		0.000050	mg/L	13-AUG-21	0.0001	0.0001
Sodium (Na)-Total	1.30		0.050	mg/L	13-AUG-21		
Strontium (Sr)-Total	0.0311		0.0010	mg/L	13-AUG-21		
Sulfur (S)-Total	0.53		0.50	mg/L	13-AUG-21		
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	13-AUG-21		
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	13-AUG-21	0.0008	0.0003
Thorium (Th)-Total	<0.00010		0.00010	mg/L	13-AUG-21		
Tin (Sn)-Total	<0.00010		0.00010	mg/L	13-AUG-21		
Titanium (Ti)-Total	0.00079		0.00030	mg/L	13-AUG-21		
Tungsten (W)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.03
Uranium (U)-Total	0.000026		0.000010	mg/L	13-AUG-21		0.005
Vanadium (V)-Total	<0.00050		0.00050	mg/L	13-AUG-21		0.006
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	13-AUG-21	0.03	0.02
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	13-AUG-21		0.004

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2626399-5 NDR-MARLK							
Sampled By: TB/MG on 11-AUG-21 @ 16:45							
Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD			No Unit	16-AUG-21		
Aluminum (Al)-Dissolved	0.0144		0.0010	mg/L	17-AUG-21	*0.005	0.015
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.02
Arsenic (As)-Dissolved	0.00058		0.00010	mg/L	17-AUG-21	0.005	0.005
Barium (Ba)-Dissolved	0.00577		0.00010	mg/L	17-AUG-21		
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.011
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	17-AUG-21		
Boron (B)-Dissolved	<0.010		0.010	mg/L	17-AUG-21		0.2
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	17-AUG-21	0.00004	0.0001
Calcium (Ca)-Dissolved	19.1		0.050	mg/L	17-AUG-21		
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21		
Chromium (Cr)-Dissolved	0.00020		0.00010	mg/L	17-AUG-21	0.001	
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.0009
Copper (Cu)-Dissolved	0.00031		0.00020	mg/L	17-AUG-21	0.002	0.001
Iron (Fe)-Dissolved	0.102		0.010	mg/L	17-AUG-21	0.3	0.3
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	17-AUG-21	0.001	0.001
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	17-AUG-21		
Magnesium (Mg)-Dissolved	5.21		0.0050	mg/L	17-AUG-21		
Manganese (Mn)-Dissolved	0.00626		0.00010	mg/L	17-AUG-21		
Molybdenum (Mo)-Dissolved	0.000052		0.000050	mg/L	17-AUG-21	0.073	0.04
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	17-AUG-21	0.025	0.025
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	17-AUG-21		**0.01
Potassium (K)-Dissolved	0.428		0.050	mg/L	17-AUG-21		
Rubidium (Rb)-Dissolved	0.00095		0.00020	mg/L	17-AUG-21		
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L	17-AUG-21	0.001	0.1
Silicon (Si)-Dissolved	0.779		0.050	mg/L	17-AUG-21		
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21	0.0001	0.0001
Sodium (Na)-Dissolved	1.33		0.050	mg/L	17-AUG-21		
Strontium (Sr)-Dissolved	0.0333		0.00010	mg/L	17-AUG-21		
Sulfur (S)-Dissolved	0.51		0.50	mg/L	17-AUG-21		
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	17-AUG-21		
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21	0.0008	0.0003
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		
Titanium (Ti)-Dissolved	0.00043		0.00030	mg/L	17-AUG-21		
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.03
Uranium (U)-Dissolved	0.000024		0.000010	mg/L	17-AUG-21		0.005
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	17-AUG-21		0.006
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	17-AUG-21	0.03	0.02
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	17-AUG-21		0.004
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000125		0.000020	ug/L	01-SEP-21		
L2626399-6 WBR-S-01							
Sampled By: TB/MG on 10-AUG-21 @ 15:30							
Matrix: WATER						#1	#2

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL) **#2: Ontario PWQO 1994 Guidelines**

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2626399-6 WBR-S-01							
Sampled By: TB/MG on 10-AUG-21 @ 15:30							
Matrix: WATER							
Physical Tests							
Conductivity	142		1.0	umhos/cm	14-AUG-21		
Hardness (as CaCO3)	75.3	HTC	0.50	mg/L	16-AUG-21		
pH	7.76	HTD	0.10	pH units	17-AUG-21	6.5-9.0	6.5-8.5
Total Suspended Solids	<3.0		3.0	mg/L	14-AUG-21		
Total Dissolved Solids	120	DLDS	13	mg/L	13-AUG-21		
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	74.3		1.0	mg/L	17-AUG-21		
Ammonia, Total (as N)	0.013		0.010	mg/L	16-AUG-21		
Bromide (Br)	<0.10		0.10	mg/L	16-AUG-21		
Chloride (Cl)	<0.50		0.50	mg/L	16-AUG-21	120	
Fluoride (F)	0.038		0.020	mg/L	16-AUG-21	0.12	
Nitrate (as N)	<0.020		0.020	mg/L	16-AUG-21	3	
Nitrite (as N)	<0.010		0.010	mg/L	16-AUG-21	0.06	
Phosphorus (P)-Total	0.0201		0.0010	mg/L	18-AUG-21		*0.01
Sulfate (SO4)	1.13		0.30	mg/L	16-AUG-21		
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L	17-AUG-21		
Cyanide, Total	<0.0020		0.0020	mg/L	17-AUG-21		
Cyanide, Free	<0.0020		0.0020	mg/L	17-AUG-21	0.005	
Inorganic Parameters							
Acidity (as CaCO3)	<2.0		2.0	mg/L	14-AUG-21		
Total Metals							
Aluminum (Al)-Total	0.215		0.0050	mg/L	13-AUG-21	*0.005	*0.015
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.02
Arsenic (As)-Total	0.00078		0.00010	mg/L	13-AUG-21	0.005	0.005
Barium (Ba)-Total	0.0102		0.00010	mg/L	13-AUG-21		
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.011
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	13-AUG-21		
Boron (B)-Total	<0.010		0.010	mg/L	13-AUG-21		0.2
Cadmium (Cd)-Total	0.0000168		0.0000050	mg/L	13-AUG-21	0.00004	0.0001
Calcium (Ca)-Total	21.5		0.050	mg/L	13-AUG-21		
Cesium (Cs)-Total	0.000017		0.000010	mg/L	13-AUG-21		
Chromium (Cr)-Total	0.00074		0.00050	mg/L	13-AUG-21	0.001	
Cobalt (Co)-Total	0.00013		0.00010	mg/L	13-AUG-21		0.0009
Copper (Cu)-Total	0.00100		0.00050	mg/L	13-AUG-21	0.002	0.001
Iron (Fe)-Total	0.418		0.010	mg/L	13-AUG-21	*0.3	*0.3
Lead (Pb)-Total	0.000138		0.000050	mg/L	13-AUG-21	0.001	0.001
Lithium (Li)-Total	<0.0010		0.0010	mg/L	13-AUG-21		
Magnesium (Mg)-Total	5.22		0.0050	mg/L	13-AUG-21		
Manganese (Mn)-Total	0.0375		0.00050	mg/L	13-AUG-21		
Mercury (Hg)-Total	0.00182		0.00050	ug/L	26-AUG-21	0.026	0.2
Molybdenum (Mo)-Total	0.000125		0.000050	mg/L	13-AUG-21	0.073	0.04
Nickel (Ni)-Total	0.00063		0.00050	mg/L	13-AUG-21	0.025	0.025
Phosphorus (P)-Total	<0.050		0.050	mg/L	13-AUG-21		**0.01
Potassium (K)-Total	0.496		0.050	mg/L	13-AUG-21		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
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Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2626399-6 WBR-S-01 Sampled By: TB/MG on 10-AUG-21 @ 15:30 Matrix: WATER							
Total Metals							
Rubidium (Rb)-Total	0.00158		0.00020	mg/L	13-AUG-21		
Selenium (Se)-Total	0.000131		0.000050	mg/L	13-AUG-21	0.001	0.1
Silicon (Si)-Total	2.13		0.10	mg/L	13-AUG-21		
Silver (Ag)-Total	<0.000050		0.000050	mg/L	13-AUG-21	0.0001	0.0001
Sodium (Na)-Total	2.39		0.050	mg/L	13-AUG-21		
Strontium (Sr)-Total	0.0496		0.0010	mg/L	13-AUG-21		
Sulfur (S)-Total	0.73		0.50	mg/L	13-AUG-21		
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	13-AUG-21		
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	13-AUG-21	0.0008	0.0003
Thorium (Th)-Total	<0.00010		0.00010	mg/L	13-AUG-21		
Tin (Sn)-Total	<0.00010		0.00010	mg/L	13-AUG-21		
Titanium (Ti)-Total	0.00813		0.00030	mg/L	13-AUG-21		
Tungsten (W)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.03
Uranium (U)-Total	0.000094		0.000010	mg/L	13-AUG-21		0.005
Vanadium (V)-Total	0.00094		0.00050	mg/L	13-AUG-21		0.006
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	13-AUG-21	0.03	0.02
Zirconium (Zr)-Total	0.00034		0.00020	mg/L	13-AUG-21		0.004
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD			No Unit	16-AUG-21		
Aluminum (Al)-Dissolved	0.0697		0.0010	mg/L	17-AUG-21	*0.005	*0.015
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.02
Arsenic (As)-Dissolved	0.00074		0.00010	mg/L	17-AUG-21	0.005	0.005
Barium (Ba)-Dissolved	0.00961		0.00010	mg/L	17-AUG-21		
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.011
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	17-AUG-21		
Boron (B)-Dissolved	<0.010		0.010	mg/L	17-AUG-21		0.2
Cadmium (Cd)-Dissolved	0.0000135		0.0000050	mg/L	17-AUG-21	0.00004	0.0001
Calcium (Ca)-Dissolved	22.4		0.050	mg/L	17-AUG-21		
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21		
Chromium (Cr)-Dissolved	0.00050		0.00010	mg/L	17-AUG-21	0.001	
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.0009
Copper (Cu)-Dissolved	0.00087		0.00020	mg/L	17-AUG-21	0.002	0.001
Iron (Fe)-Dissolved	0.271		0.010	mg/L	17-AUG-21	0.3	0.3
Lead (Pb)-Dissolved	0.000069		0.000050	mg/L	17-AUG-21	0.001	0.001
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	17-AUG-21		
Magnesium (Mg)-Dissolved	5.89		0.0050	mg/L	17-AUG-21		
Manganese (Mn)-Dissolved	0.0316		0.00010	mg/L	17-AUG-21		
Molybdenum (Mo)-Dissolved	0.000110		0.000050	mg/L	17-AUG-21	0.073	0.04
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	17-AUG-21	0.025	0.025
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	17-AUG-21		**0.01
Potassium (K)-Dissolved	0.489		0.050	mg/L	17-AUG-21		
Rubidium (Rb)-Dissolved	0.00145		0.00020	mg/L	17-AUG-21		
Selenium (Se)-Dissolved	0.000090		0.000050	mg/L	17-AUG-21	0.001	0.1
Silicon (Si)-Dissolved	1.80		0.050	mg/L	17-AUG-21		
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21	0.0001	0.0001
Sodium (Na)-Dissolved	2.49		0.050	mg/L	17-AUG-21		

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Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2626399-6 WBR-S-01							
Sampled By: TB/MG on 10-AUG-21 @ 15:30							
Matrix: WATER							
Dissolved Metals							
Strontium (Sr)-Dissolved	0.0515		0.00010	mg/L	17-AUG-21		
Sulfur (S)-Dissolved	0.72		0.50	mg/L	17-AUG-21		
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	17-AUG-21		
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21	0.0008	0.0003
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		
Titanium (Ti)-Dissolved	0.00246		0.00030	mg/L	17-AUG-21		
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.03
Uranium (U)-Dissolved	0.000087		0.000010	mg/L	17-AUG-21		0.005
Vanadium (V)-Dissolved	0.00055		0.00050	mg/L	17-AUG-21		0.006
Zinc (Zn)-Dissolved	0.0012		0.0010	mg/L	17-AUG-21	0.03	0.02
Zirconium (Zr)-Dissolved	0.00030		0.00020	mg/L	17-AUG-21		0.004
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000201		0.000020	ug/L	01-SEP-21		
L2626399-7 WBR-S-02							
Sampled By: TB/MG on 10-AUG-21 @ 16:30							
Matrix: WATER							
Physical Tests							
Conductivity	106		1.0	umhos/cm	14-AUG-21		
Hardness (as CaCO3)	64.4	HTC	0.50	mg/L	16-AUG-21		
pH	7.57	HTD	0.10	pH units	17-AUG-21	6.5-9.0	6.5-8.5
Total Suspended Solids	12.9		3.0	mg/L	14-AUG-21		
Total Dissolved Solids	132	DLDS	13	mg/L	13-AUG-21		
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	54.7		1.0	mg/L	17-AUG-21		
Ammonia, Total (as N)	0.016		0.010	mg/L	16-AUG-21		
Bromide (Br)	<0.10		0.10	mg/L	16-AUG-21		
Chloride (Cl)	<0.50		0.50	mg/L	16-AUG-21	120	
Fluoride (F)	0.028		0.020	mg/L	16-AUG-21	0.12	
Nitrate (as N)	<0.020		0.020	mg/L	16-AUG-21	3	
Nitrite (as N)	<0.010		0.010	mg/L	16-AUG-21	0.06	
Phosphorus (P)-Total	0.0487		0.0010	mg/L	18-AUG-21		*0.01
Sulfate (SO4)	1.10		0.30	mg/L	16-AUG-21		
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L	17-AUG-21		
Cyanide, Total	<0.0020		0.0020	mg/L	17-AUG-21		
Cyanide, Free	<0.0020		0.0020	mg/L	17-AUG-21	0.005	
Inorganic Parameters							
Acidity (as CaCO3)	3.9		2.0	mg/L	14-AUG-21		
Total Metals							
Aluminum (Al)-Total	1.35		0.0050	mg/L	13-AUG-21	*0.005	*0.015
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.02
Arsenic (As)-Total	0.00167		0.00010	mg/L	13-AUG-21	0.005	0.005
Barium (Ba)-Total	0.0152		0.00010	mg/L	13-AUG-21		
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.011

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
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Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2626399-7 WBR-S-02							
Sampled By: TB/MG on 10-AUG-21 @ 16:30							
Matrix: WATER							
Total Metals							
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	13-AUG-21		
Boron (B)-Total	<0.010		0.010	mg/L	13-AUG-21		0.2
Cadmium (Cd)-Total	0.0000356		0.0000050	mg/L	13-AUG-21	0.00004	0.0001
Calcium (Ca)-Total	18.6		0.050	mg/L	13-AUG-21		
Cesium (Cs)-Total	0.000129		0.000010	mg/L	13-AUG-21		
Chromium (Cr)-Total	0.00288		0.00050	mg/L	13-AUG-21	*0.001	
Cobalt (Co)-Total	0.00074		0.00010	mg/L	13-AUG-21		0.0009
Copper (Cu)-Total	0.00228		0.00050	mg/L	13-AUG-21	*0.002	*0.001
Iron (Fe)-Total	1.76		0.010	mg/L	13-AUG-21	*0.3	*0.3
Lead (Pb)-Total	0.000768		0.000050	mg/L	13-AUG-21	0.001	0.001
Lithium (Li)-Total	0.0022		0.0010	mg/L	13-AUG-21		
Magnesium (Mg)-Total	4.33		0.0050	mg/L	13-AUG-21		
Manganese (Mn)-Total	0.118		0.00050	mg/L	13-AUG-21		
Mercury (Hg)-Total	0.00311		0.00050	ug/L	26-AUG-21	0.026	0.2
Molybdenum (Mo)-Total	0.000096		0.000050	mg/L	13-AUG-21	0.073	0.04
Nickel (Ni)-Total	0.00228		0.00050	mg/L	13-AUG-21	0.025	0.025
Phosphorus (P)-Total	0.062		0.050	mg/L	13-AUG-21		*0.01
Potassium (K)-Total	0.622		0.050	mg/L	13-AUG-21		
Rubidium (Rb)-Total	0.00330		0.00020	mg/L	13-AUG-21		
Selenium (Se)-Total	0.000155		0.000050	mg/L	13-AUG-21	0.001	0.1
Silicon (Si)-Total	3.85		0.10	mg/L	13-AUG-21		
Silver (Ag)-Total	<0.000050		0.000050	mg/L	13-AUG-21	0.0001	0.0001
Sodium (Na)-Total	1.71		0.050	mg/L	13-AUG-21		
Strontium (Sr)-Total	0.0358		0.0010	mg/L	13-AUG-21		
Sulfur (S)-Total	0.74		0.50	mg/L	13-AUG-21		
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	13-AUG-21		
Thallium (Tl)-Total	0.000018		0.000010	mg/L	13-AUG-21	0.0008	0.0003
Thorium (Th)-Total	0.00025		0.00010	mg/L	13-AUG-21		
Tin (Sn)-Total	<0.00010		0.00010	mg/L	13-AUG-21		
Titanium (Ti)-Total	0.0511		0.00030	mg/L	13-AUG-21		
Tungsten (W)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.03
Uranium (U)-Total	0.000127		0.000010	mg/L	13-AUG-21		0.005
Vanadium (V)-Total	0.00303		0.00050	mg/L	13-AUG-21		0.006
Zinc (Zn)-Total	0.0068		0.0030	mg/L	13-AUG-21	0.03	0.02
Zirconium (Zr)-Total	0.00119		0.00020	mg/L	13-AUG-21		0.004
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD			No Unit	16-AUG-21		
Aluminum (Al)-Dissolved	0.185		0.0010	mg/L	17-AUG-21	*0.005	*0.015
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.02
Arsenic (As)-Dissolved	0.00140		0.00010	mg/L	17-AUG-21	0.005	0.005
Barium (Ba)-Dissolved	0.00755		0.00010	mg/L	17-AUG-21		
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.011
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	17-AUG-21		
Boron (B)-Dissolved	<0.010		0.010	mg/L	17-AUG-21		0.2
Cadmium (Cd)-Dissolved	0.0000183		0.0000050	mg/L	17-AUG-21	0.00004	0.0001

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Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2626399-7 WBR-S-02							
Sampled By: TB/MG on 10-AUG-21 @ 16:30							
Matrix: WATER							
Dissolved Metals							
Calcium (Ca)-Dissolved	18.3		0.050	mg/L	17-AUG-21		
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21		
Chromium (Cr)-Dissolved	0.00074		0.00010	mg/L	17-AUG-21	0.001	
Cobalt (Co)-Dissolved	0.00016		0.00010	mg/L	17-AUG-21		0.0009
Copper (Cu)-Dissolved	0.00169		0.00020	mg/L	17-AUG-21	0.002	*0.001
Iron (Fe)-Dissolved	0.604		0.010	mg/L	17-AUG-21	*0.3	*0.3
Lead (Pb)-Dissolved	0.000254		0.000050	mg/L	17-AUG-21	0.001	0.001
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	17-AUG-21		
Magnesium (Mg)-Dissolved	4.48		0.0050	mg/L	17-AUG-21		
Manganese (Mn)-Dissolved	0.0935		0.00010	mg/L	17-AUG-21		
Molybdenum (Mo)-Dissolved	0.000092		0.000050	mg/L	17-AUG-21	0.073	0.04
Nickel (Ni)-Dissolved	0.00087		0.00050	mg/L	17-AUG-21	0.025	0.025
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	17-AUG-21		**0.01
Potassium (K)-Dissolved	0.344		0.050	mg/L	17-AUG-21		
Rubidium (Rb)-Dissolved	0.00120		0.00020	mg/L	17-AUG-21		
Selenium (Se)-Dissolved	0.000151		0.000050	mg/L	17-AUG-21	0.001	0.1
Silicon (Si)-Dissolved	1.88		0.050	mg/L	17-AUG-21		
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21	0.0001	0.0001
Sodium (Na)-Dissolved	1.63		0.050	mg/L	17-AUG-21		
Strontium (Sr)-Dissolved	0.0355		0.00010	mg/L	17-AUG-21		
Sulfur (S)-Dissolved	0.89		0.50	mg/L	17-AUG-21		
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	17-AUG-21		
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21	0.0008	0.0003
Thorium (Th)-Dissolved	0.00020		0.00010	mg/L	17-AUG-21		
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		
Titanium (Ti)-Dissolved	0.00850		0.00030	mg/L	17-AUG-21		
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.03
Uranium (U)-Dissolved	0.000091		0.000010	mg/L	17-AUG-21		0.005
Vanadium (V)-Dissolved	0.00101		0.00050	mg/L	17-AUG-21		0.006
Zinc (Zn)-Dissolved	0.0019		0.0010	mg/L	17-AUG-21	0.03	0.02
Zirconium (Zr)-Dissolved	0.00096		0.00020	mg/L	17-AUG-21		0.004
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000372		0.000020	ug/L	01-SEP-21		
L2626399-8 WBR-S-03							
Sampled By: TB/MG on 10-AUG-21 @ 10:00							
Matrix: WATER							
Physical Tests							
Conductivity	119		1.0	umhos/cm	14-AUG-21		
Hardness (as CaCO3)	69.4	HTC	0.50	mg/L	16-AUG-21		
pH	7.63	HTD	0.10	pH units	17-AUG-21	6.5-9.0	6.5-8.5
Total Suspended Solids	4.4		3.0	mg/L	14-AUG-21		
Total Dissolved Solids	134	DLDS	13	mg/L	13-AUG-21		
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	63.0		1.0	mg/L	17-AUG-21		
Ammonia, Total (as N)	0.023		0.010	mg/L	16-AUG-21		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL) **#2: Ontario PWQO 1994 Guidelines**

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2626399-8 WBR-S-03							
Sampled By: TB/MG on 10-AUG-21 @ 10:00							
Matrix: WATER							
Anions and Nutrients							
Bromide (Br)	<0.10		0.10	mg/L	16-AUG-21		
Chloride (Cl)	<0.50		0.50	mg/L	16-AUG-21	120	
Fluoride (F)	0.033		0.020	mg/L	16-AUG-21	0.12	
Nitrate (as N)	<0.020		0.020	mg/L	16-AUG-21	3	
Nitrite (as N)	<0.010		0.010	mg/L	16-AUG-21	0.06	
Phosphorus (P)-Total	0.0500		0.0010	mg/L	18-AUG-21		*0.01
Sulfate (SO4)	0.50		0.30	mg/L	16-AUG-21		
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L	17-AUG-21		
Cyanide, Total	<0.0020		0.0020	mg/L	17-AUG-21		
Cyanide, Free	<0.0020		0.0020	mg/L	17-AUG-21	0.005	
Inorganic Parameters							
Acidity (as CaCO3)	4.0		2.0	mg/L	14-AUG-21		
Total Metals							
Aluminum (Al)-Total	0.820		0.0050	mg/L	13-AUG-21	*0.005	*0.015
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.02
Arsenic (As)-Total	0.00158		0.00010	mg/L	13-AUG-21	0.005	0.005
Barium (Ba)-Total	0.0117		0.00010	mg/L	13-AUG-21		
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.011
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	13-AUG-21		
Boron (B)-Total	<0.010		0.010	mg/L	13-AUG-21		0.2
Cadmium (Cd)-Total	0.0000281		0.0000050	mg/L	13-AUG-21	0.00004	0.0001
Calcium (Ca)-Total	20.1		0.050	mg/L	13-AUG-21		
Cesium (Cs)-Total	0.000073		0.000010	mg/L	13-AUG-21		
Chromium (Cr)-Total	0.00195		0.00050	mg/L	13-AUG-21	*0.001	
Cobalt (Co)-Total	0.00046		0.00010	mg/L	13-AUG-21		0.0009
Copper (Cu)-Total	0.00184		0.00050	mg/L	13-AUG-21	0.002	*0.001
Iron (Fe)-Total	1.36		0.010	mg/L	13-AUG-21	*0.3	*0.3
Lead (Pb)-Total	0.000565		0.000050	mg/L	13-AUG-21	0.001	0.001
Lithium (Li)-Total	0.0016		0.0010	mg/L	13-AUG-21		
Magnesium (Mg)-Total	4.69		0.0050	mg/L	13-AUG-21		
Manganese (Mn)-Total	0.0782		0.00050	mg/L	13-AUG-21		
Mercury (Hg)-Total	0.00268		0.00050	ug/L	26-AUG-21	0.026	0.2
Molybdenum (Mo)-Total	0.000107		0.000050	mg/L	13-AUG-21	0.073	0.04
Nickel (Ni)-Total	0.00151		0.00050	mg/L	13-AUG-21	0.025	0.025
Phosphorus (P)-Total	<0.050		0.050	mg/L	13-AUG-21		**0.01
Potassium (K)-Total	0.545		0.050	mg/L	13-AUG-21		
Rubidium (Rb)-Total	0.00235		0.00020	mg/L	13-AUG-21		
Selenium (Se)-Total	0.000149		0.000050	mg/L	13-AUG-21	0.001	0.1
Silicon (Si)-Total	3.20		0.10	mg/L	13-AUG-21		
Silver (Ag)-Total	<0.000050		0.000050	mg/L	13-AUG-21	0.0001	0.0001
Sodium (Na)-Total	1.84		0.050	mg/L	13-AUG-21		
Strontium (Sr)-Total	0.0405		0.0010	mg/L	13-AUG-21		
Sulfur (S)-Total	<0.50		0.50	mg/L	13-AUG-21		
Tellurium (Te)-Total	0.00025		0.00020	mg/L	13-AUG-21		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2626399-8 WBR-S-03							
Sampled By: TB/MG on 10-AUG-21 @ 10:00							
Matrix: WATER							
Total Metals							
Thallium (Tl)-Total	0.000012		0.000010	mg/L	13-AUG-21	0.0008	0.0003
Thorium (Th)-Total	0.00021		0.00010	mg/L	13-AUG-21		
Tin (Sn)-Total	<0.00010		0.00010	mg/L	13-AUG-21		
Titanium (Ti)-Total	0.0324		0.00030	mg/L	13-AUG-21		
Tungsten (W)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.03
Uranium (U)-Total	0.000093		0.000010	mg/L	13-AUG-21		0.005
Vanadium (V)-Total	0.00211		0.00050	mg/L	13-AUG-21		0.006
Zinc (Zn)-Total	0.0046		0.0030	mg/L	13-AUG-21	0.03	0.02
Zirconium (Zr)-Total	0.00105		0.00020	mg/L	13-AUG-21		0.004
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD			No Unit	16-AUG-21		
Aluminum (Al)-Dissolved	0.158		0.0010	mg/L	17-AUG-21	*0.005	*0.015
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.02
Arsenic (As)-Dissolved	0.00140		0.00010	mg/L	17-AUG-21	0.005	0.005
Barium (Ba)-Dissolved	0.00759		0.00010	mg/L	17-AUG-21		
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.011
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	17-AUG-21		
Boron (B)-Dissolved	<0.010		0.010	mg/L	17-AUG-21		0.2
Cadmium (Cd)-Dissolved	0.0000179		0.0000050	mg/L	17-AUG-21	0.00004	0.0001
Calcium (Ca)-Dissolved	19.6		0.050	mg/L	17-AUG-21		
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21		
Chromium (Cr)-Dissolved	0.00074		0.00010	mg/L	17-AUG-21	0.001	
Cobalt (Co)-Dissolved	0.00016		0.00010	mg/L	17-AUG-21		0.0009
Copper (Cu)-Dissolved	0.00140		0.00020	mg/L	17-AUG-21	0.002	*0.001
Iron (Fe)-Dissolved	0.667		0.010	mg/L	17-AUG-21	*0.3	*0.3
Lead (Pb)-Dissolved	0.000271		0.000050	mg/L	17-AUG-21	0.001	0.001
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	17-AUG-21		
Magnesium (Mg)-Dissolved	5.08		0.0050	mg/L	17-AUG-21		
Manganese (Mn)-Dissolved	0.0656		0.00010	mg/L	17-AUG-21		
Molybdenum (Mo)-Dissolved	0.000094		0.000050	mg/L	17-AUG-21	0.073	0.04
Nickel (Ni)-Dissolved	0.00082		0.00050	mg/L	17-AUG-21	0.025	0.025
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	17-AUG-21		**0.01
Potassium (K)-Dissolved	0.378		0.050	mg/L	17-AUG-21		
Rubidium (Rb)-Dissolved	0.00121		0.00020	mg/L	17-AUG-21		
Selenium (Se)-Dissolved	0.000099		0.000050	mg/L	17-AUG-21	0.001	0.1
Silicon (Si)-Dissolved	1.95		0.050	mg/L	17-AUG-21		
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21	0.0001	0.0001
Sodium (Na)-Dissolved	1.83		0.050	mg/L	17-AUG-21		
Strontium (Sr)-Dissolved	0.0399		0.00010	mg/L	17-AUG-21		
Sulfur (S)-Dissolved	0.60		0.50	mg/L	17-AUG-21		
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	17-AUG-21		
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21	0.0008	0.0003
Thorium (Th)-Dissolved	0.00015		0.00010	mg/L	17-AUG-21		
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		
Titanium (Ti)-Dissolved	0.00701		0.00030	mg/L	17-AUG-21		
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.03

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2626399-8 WBR-S-03							
Sampled By: TB/MG on 10-AUG-21 @ 10:00							
Matrix: WATER							
Dissolved Metals							
Uranium (U)-Dissolved	0.000071		0.000010	mg/L	17-AUG-21		0.005
Vanadium (V)-Dissolved	0.00086		0.00050	mg/L	17-AUG-21		0.006
Zinc (Zn)-Dissolved	0.0019		0.0010	mg/L	17-AUG-21	0.03	0.02
Zirconium (Zr)-Dissolved	0.00083		0.00020	mg/L	17-AUG-21		0.004
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000380		0.000020	ug/L	01-SEP-21		
L2626399-9 WBR-S-04							
Sampled By: TB/MG on 09-AUG-21 @ 14:30							
Matrix: WATER							
Physical Tests							
Conductivity	114		1.0	umhos/cm	13-AUG-21		
Hardness (as CaCO3)	66.7	HTC	0.50	mg/L	16-AUG-21		
pH	7.62		0.10	pH units	13-AUG-21	6.5-9.0	6.5-8.5
Total Suspended Solids	3.1		3.0	mg/L	14-AUG-21		
Total Dissolved Solids	132	DLDS	13	mg/L	13-AUG-21		
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	66.2		1.0	mg/L	13-AUG-21		
Ammonia, Total (as N)	0.034		0.010	mg/L	16-AUG-21		
Bromide (Br)	<0.10		0.10	mg/L	16-AUG-21		
Chloride (Cl)	<0.50		0.50	mg/L	16-AUG-21	120	
Fluoride (F)	0.032		0.020	mg/L	16-AUG-21	0.12	
Nitrate (as N)	<0.020		0.020	mg/L	16-AUG-21	3	
Nitrite (as N)	<0.010		0.010	mg/L	16-AUG-21	0.06	
Phosphorus (P)-Total	0.0439		0.0010	mg/L	18-AUG-21		*0.01
Sulfate (SO4)	0.46		0.30	mg/L	16-AUG-21		
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L	17-AUG-21		
Cyanide, Total	<0.0020		0.0020	mg/L	17-AUG-21		
Cyanide, Free	<0.0020		0.0020	mg/L	17-AUG-21	0.005	
Inorganic Parameters							
Acidity (as CaCO3)	4.2		2.0	mg/L	14-AUG-21		
Total Metals							
Aluminum (Al)-Total	0.773		0.0050	mg/L	13-AUG-21	*0.005	*0.015
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.02
Arsenic (As)-Total	0.00156		0.00010	mg/L	13-AUG-21	0.005	0.005
Barium (Ba)-Total	0.0107		0.00010	mg/L	13-AUG-21		
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.011
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	13-AUG-21		
Boron (B)-Total	<0.010		0.010	mg/L	13-AUG-21		0.2
Cadmium (Cd)-Total	0.0000214		0.0000050	mg/L	13-AUG-21	0.00004	0.0001
Calcium (Ca)-Total	19.2		0.050	mg/L	13-AUG-21		
Cesium (Cs)-Total	0.000070		0.000010	mg/L	13-AUG-21		
Chromium (Cr)-Total	0.00182		0.00050	mg/L	13-AUG-21	*0.001	
Cobalt (Co)-Total	0.00042		0.00010	mg/L	13-AUG-21		0.0009

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL) **#2: Ontario PWQO 1994 Guidelines**

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2626399-9 WBR-S-04							
Sampled By: TB/MG on 09-AUG-21 @ 14:30							
Matrix: WATER							
Total Metals							
Copper (Cu)-Total	0.00171		0.00050	mg/L	13-AUG-21	0.002	*0.001
Iron (Fe)-Total	1.31		0.010	mg/L	13-AUG-21	*0.3	*0.3
Lead (Pb)-Total	0.000522		0.000050	mg/L	13-AUG-21	0.001	0.001
Lithium (Li)-Total	0.0015		0.0010	mg/L	13-AUG-21		
Magnesium (Mg)-Total	4.53		0.0050	mg/L	13-AUG-21		
Manganese (Mn)-Total	0.0756		0.00050	mg/L	13-AUG-21		
Mercury (Hg)-Total	0.00206		0.00050	ug/L	26-AUG-21	0.026	0.2
Molybdenum (Mo)-Total	0.000113		0.000050	mg/L	13-AUG-21	0.073	0.04
Nickel (Ni)-Total	0.00147		0.00050	mg/L	13-AUG-21	0.025	0.025
Phosphorus (P)-Total	<0.050		0.050	mg/L	13-AUG-21		**0.01
Potassium (K)-Total	0.488		0.050	mg/L	13-AUG-21		
Rubidium (Rb)-Total	0.00208		0.00020	mg/L	13-AUG-21		
Selenium (Se)-Total	0.000127		0.000050	mg/L	13-AUG-21	0.001	0.1
Silicon (Si)-Total	3.18		0.10	mg/L	13-AUG-21		
Silver (Ag)-Total	<0.000050		0.000050	mg/L	13-AUG-21	0.0001	0.0001
Sodium (Na)-Total	1.75		0.050	mg/L	13-AUG-21		
Strontium (Sr)-Total	0.0387		0.0010	mg/L	13-AUG-21		
Sulfur (S)-Total	0.56		0.50	mg/L	13-AUG-21		
Tellurium (Te)-Total	0.00029		0.00020	mg/L	13-AUG-21		
Thallium (Tl)-Total	0.000011		0.000010	mg/L	13-AUG-21	0.0008	0.0003
Thorium (Th)-Total	0.00022		0.00010	mg/L	13-AUG-21		
Tin (Sn)-Total	<0.00010		0.00010	mg/L	13-AUG-21		
Titanium (Ti)-Total	0.0288		0.00030	mg/L	13-AUG-21		
Tungsten (W)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.03
Uranium (U)-Total	0.000092		0.000010	mg/L	13-AUG-21		0.005
Vanadium (V)-Total	0.00197		0.00050	mg/L	13-AUG-21		0.006
Zinc (Zn)-Total	0.0039		0.0030	mg/L	13-AUG-21	0.03	0.02
Zirconium (Zr)-Total	0.00126		0.00020	mg/L	16-AUG-21		0.004
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD			No Unit	16-AUG-21		
Aluminum (Al)-Dissolved	0.198		0.0010	mg/L	17-AUG-21	*0.005	*0.015
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.02
Arsenic (As)-Dissolved	0.00139		0.00010	mg/L	17-AUG-21	0.005	0.005
Barium (Ba)-Dissolved	0.00753		0.00010	mg/L	17-AUG-21		
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.011
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	17-AUG-21		
Boron (B)-Dissolved	<0.010		0.010	mg/L	17-AUG-21		0.2
Cadmium (Cd)-Dissolved	0.0000169		0.0000050	mg/L	17-AUG-21	0.00004	0.0001
Calcium (Ca)-Dissolved	20.2		0.050	mg/L	17-AUG-21		
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21		
Chromium (Cr)-Dissolved	0.00080		0.00010	mg/L	17-AUG-21	0.001	
Cobalt (Co)-Dissolved	0.00016		0.00010	mg/L	17-AUG-21		0.0009
Copper (Cu)-Dissolved	0.00144		0.00020	mg/L	17-AUG-21	0.002	*0.001
Iron (Fe)-Dissolved	0.682		0.010	mg/L	17-AUG-21	*0.3	*0.3
Lead (Pb)-Dissolved	0.000265		0.000050	mg/L	17-AUG-21	0.001	0.001
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	17-AUG-21		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping	Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2		
L2626399-9	WBR-S-04									
Sampled By:	TB/MG on 09-AUG-21 @ 14:30									
Matrix:	WATER									
Dissolved Metals										
	Magnesium (Mg)-Dissolved	4.88		0.0050	mg/L	17-AUG-21				
	Manganese (Mn)-Dissolved	0.0621		0.00010	mg/L	17-AUG-21				
	Molybdenum (Mo)-Dissolved	0.000099		0.000050	mg/L	17-AUG-21	0.073	0.04		
	Nickel (Ni)-Dissolved	0.00085		0.00050	mg/L	17-AUG-21	0.025	0.025		
	Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	17-AUG-21		**0.01		
	Potassium (K)-Dissolved	0.353		0.050	mg/L	17-AUG-21				
	Rubidium (Rb)-Dissolved	0.00118		0.00020	mg/L	17-AUG-21				
	Selenium (Se)-Dissolved	0.000161		0.000050	mg/L	17-AUG-21	0.001	0.1		
	Silicon (Si)-Dissolved	2.01		0.050	mg/L	17-AUG-21				
	Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21	0.0001	0.0001		
	Sodium (Na)-Dissolved	1.76		0.050	mg/L	17-AUG-21				
	Strontium (Sr)-Dissolved	0.0398		0.00010	mg/L	17-AUG-21				
	Sulfur (S)-Dissolved	0.70		0.50	mg/L	17-AUG-21				
	Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	17-AUG-21				
	Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21	0.0008	0.0003		
	Thorium (Th)-Dissolved	0.00016		0.00010	mg/L	17-AUG-21				
	Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21				
	Titanium (Ti)-Dissolved	0.00913		0.00030	mg/L	17-AUG-21				
	Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.03		
	Uranium (U)-Dissolved	0.000075		0.000010	mg/L	17-AUG-21		0.005		
	Vanadium (V)-Dissolved	0.00084		0.00050	mg/L	17-AUG-21		0.006		
	Zinc (Zn)-Dissolved	0.0033		0.0010	mg/L	17-AUG-21	0.03	0.02		
	Zirconium (Zr)-Dissolved	0.00086		0.00020	mg/L	17-AUG-21		0.004		
Speciated Metals										
	Methylmercury (as MeHg)-Total	0.000340		0.000020	ug/L	01-SEP-21				
L2626399-10	CNC-DUP-02									
Sampled By:	TB/MG on 11-AUG-21									
Matrix:	WATER									
Physical Tests										
	Conductivity	119		1.0	umhos/cm	14-AUG-21				
	Hardness (as CaCO3)	64.9	HTC	0.50	mg/L	16-AUG-21				
	pH	7.73	HTD	0.10	pH units	17-AUG-21	6.5-9.0	6.5-8.5		
	Total Suspended Solids	<3.0		3.0	mg/L	14-AUG-21				
	Total Dissolved Solids	95	DLDS	13	mg/L	13-AUG-21				
Anions and Nutrients										
	Alkalinity, Total (as CaCO3)	62.8		1.0	mg/L	17-AUG-21				
	Ammonia, Total (as N)	<0.010		0.010	mg/L	16-AUG-21				
	Bromide (Br)	<0.10		0.10	mg/L	16-AUG-21				
	Chloride (Cl)	<0.50		0.50	mg/L	16-AUG-21	120			
	Fluoride (F)	0.031		0.020	mg/L	16-AUG-21	0.12			
	Nitrate (as N)	<0.020		0.020	mg/L	16-AUG-21	3			
	Nitrite (as N)	<0.010		0.010	mg/L	16-AUG-21	0.06			
	Phosphorus (P)-Total	0.0147		0.0010	mg/L	18-AUG-21		*0.01		
	Sulfate (SO4)	0.33		0.30	mg/L	16-AUG-21				
Cyanides										

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL) **#2: Ontario PWQO 1994 Guidelines**

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2626399-10 CNC-DUP-02 Sampled By: TB/MG on 11-AUG-21 Matrix: WATER							
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L	17-AUG-21		
Cyanide, Total	<0.0020		0.0020	mg/L	17-AUG-21		
Cyanide, Free	<0.0020		0.0020	mg/L	17-AUG-21	0.005	
Inorganic Parameters							
Acidity (as CaCO3)	<2.0		2.0	mg/L	14-AUG-21		
Total Metals							
Aluminum (Al)-Total	0.0237		0.0050	mg/L	16-AUG-21	*0.005	*0.015
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.02
Arsenic (As)-Total	0.00061		0.00010	mg/L	16-AUG-21	0.005	0.005
Barium (Ba)-Total	0.00631		0.00010	mg/L	16-AUG-21		
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.011
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	13-AUG-21		
Boron (B)-Total	<0.010		0.010	mg/L	13-AUG-21		0.2
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	16-AUG-21	0.00004	0.0001
Calcium (Ca)-Total	18.6		0.050	mg/L	13-AUG-21		
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	13-AUG-21		
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	16-AUG-21	0.001	
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	16-AUG-21		0.0009
Copper (Cu)-Total	<0.00050		0.00050	mg/L	16-AUG-21	0.002	0.001
Iron (Fe)-Total	0.132		0.010	mg/L	16-AUG-21	0.3	0.3
Lead (Pb)-Total	<0.000050		0.000050	mg/L	13-AUG-21	0.001	0.001
Lithium (Li)-Total	<0.0010		0.0010	mg/L	13-AUG-21		
Magnesium (Mg)-Total	4.51		0.0050	mg/L	16-AUG-21		
Manganese (Mn)-Total	0.0234		0.00050	mg/L	16-AUG-21		
Mercury (Hg)-Total	0.00164		0.00050	ug/L	26-AUG-21	0.026	0.2
Molybdenum (Mo)-Total	0.000058		0.000050	mg/L	13-AUG-21	0.073	0.04
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	16-AUG-21	0.025	0.025
Phosphorus (P)-Total	<0.050		0.050	mg/L	16-AUG-21		**0.01
Potassium (K)-Total	0.435		0.050	mg/L	16-AUG-21		
Rubidium (Rb)-Total	0.00099		0.00020	mg/L	16-AUG-21		
Selenium (Se)-Total	0.000080		0.000050	mg/L	13-AUG-21	0.001	0.1
Silicon (Si)-Total	0.83		0.10	mg/L	13-AUG-21		
Silver (Ag)-Total	<0.000050		0.000050	mg/L	13-AUG-21	0.0001	0.0001
Sodium (Na)-Total	1.28		0.050	mg/L	16-AUG-21		
Strontium (Sr)-Total	0.0316		0.0010	mg/L	13-AUG-21		
Sulfur (S)-Total	<0.50		0.50	mg/L	13-AUG-21		
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	13-AUG-21		
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	13-AUG-21	0.0008	0.0003
Thorium (Th)-Total	<0.00010		0.00010	mg/L	13-AUG-21		
Tin (Sn)-Total	<0.00010		0.00010	mg/L	16-AUG-21		
Titanium (Ti)-Total	0.00069		0.00030	mg/L	16-AUG-21		
Tungsten (W)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.03
Uranium (U)-Total	0.000026		0.000010	mg/L	13-AUG-21		0.005
Vanadium (V)-Total	<0.00050		0.00050	mg/L	16-AUG-21		0.006
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	16-AUG-21	0.03	0.02
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	13-AUG-21		0.004

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2626399-10 CNC-DUP-02							
Sampled By: TB/MG on 11-AUG-21							
Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD			No Unit	16-AUG-21		
Aluminum (Al)-Dissolved	0.0139		0.0010	mg/L	17-AUG-21	*0.005	0.015
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.02
Arsenic (As)-Dissolved	0.00058		0.00010	mg/L	17-AUG-21	0.005	0.005
Barium (Ba)-Dissolved	0.00576		0.00010	mg/L	17-AUG-21		
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.011
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	17-AUG-21		
Boron (B)-Dissolved	<0.010		0.010	mg/L	17-AUG-21		0.2
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	17-AUG-21	0.00004	0.0001
Calcium (Ca)-Dissolved	18.5		0.050	mg/L	17-AUG-21		
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21		
Chromium (Cr)-Dissolved	0.00019		0.00010	mg/L	17-AUG-21	0.001	
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.0009
Copper (Cu)-Dissolved	0.00030		0.00020	mg/L	17-AUG-21	0.002	0.001
Iron (Fe)-Dissolved	0.102		0.010	mg/L	17-AUG-21	0.3	0.3
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	17-AUG-21	0.001	0.001
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	17-AUG-21		
Magnesium (Mg)-Dissolved	5.16		0.0050	mg/L	17-AUG-21		
Manganese (Mn)-Dissolved	0.00616		0.00010	mg/L	17-AUG-21		
Molybdenum (Mo)-Dissolved	0.000052		0.000050	mg/L	17-AUG-21	0.073	0.04
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	17-AUG-21	0.025	0.025
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	17-AUG-21		**0.01
Potassium (K)-Dissolved	0.430		0.050	mg/L	17-AUG-21		
Rubidium (Rb)-Dissolved	0.00099		0.00020	mg/L	17-AUG-21		
Selenium (Se)-Dissolved	0.000064		0.000050	mg/L	17-AUG-21	0.001	0.1
Silicon (Si)-Dissolved	0.792		0.050	mg/L	17-AUG-21		
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21	0.0001	0.0001
Sodium (Na)-Dissolved	1.32		0.050	mg/L	17-AUG-21		
Strontium (Sr)-Dissolved	0.0325		0.00010	mg/L	17-AUG-21		
Sulfur (S)-Dissolved	<0.50		0.50	mg/L	17-AUG-21		
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	17-AUG-21		
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21	0.0008	0.0003
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		
Titanium (Ti)-Dissolved	0.00045		0.00030	mg/L	17-AUG-21		
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.03
Uranium (U)-Dissolved	0.000025		0.000010	mg/L	17-AUG-21		0.005
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	17-AUG-21		0.006
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	17-AUG-21	0.03	0.02
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	17-AUG-21		0.004
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000120		0.000020	ug/L	01-SEP-21		
L2626399-11 CNC-DUP-01							
Sampled By: TB/MG on 11-AUG-21							
Matrix: WATER						#1	#2

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL) **#2: Ontario PWQO 1994 Guidelines**

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2626399-11 CNC-DUP-01							
Sampled By: TB/MG on 11-AUG-21							
Matrix: WATER							
Physical Tests							
Conductivity	111		1.0	umhos/cm	14-AUG-21		
Hardness (as CaCO3)	65.7	HTC	0.50	mg/L	16-AUG-21		
pH	7.85	HTD	0.10	pH units	16-AUG-21	6.5-9.0	6.5-8.5
Total Suspended Solids	3.0		3.0	mg/L	14-AUG-21		
Total Dissolved Solids	132	DLDS	13	mg/L	13-AUG-21		
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	59.0		1.0	mg/L	17-AUG-21		
Ammonia, Total (as N)	0.023		0.010	mg/L	16-AUG-21		
Bromide (Br)	<0.10		0.10	mg/L	16-AUG-21		
Chloride (Cl)	<0.50		0.50	mg/L	16-AUG-21	120	
Fluoride (F)	0.032		0.020	mg/L	16-AUG-21	0.12	
Nitrate (as N)	<0.020		0.020	mg/L	16-AUG-21	3	
Nitrite (as N)	<0.010		0.010	mg/L	16-AUG-21	0.06	
Phosphorus (P)-Total	0.0429		0.0010	mg/L	18-AUG-21		*0.01
Sulfate (SO4)	0.46		0.30	mg/L	16-AUG-21		
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L	17-AUG-21		
Cyanide, Total	<0.0020		0.0020	mg/L	17-AUG-21		
Cyanide, Free	<0.0020		0.0020	mg/L	17-AUG-21	0.005	
Inorganic Parameters							
Acidity (as CaCO3)	4.0		2.0	mg/L	14-AUG-21		
Total Metals							
Aluminum (Al)-Total	0.760		0.0050	mg/L	13-AUG-21	*0.005	*0.015
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.02
Arsenic (As)-Total	0.00157		0.00010	mg/L	13-AUG-21	0.005	0.005
Barium (Ba)-Total	0.0106		0.00010	mg/L	13-AUG-21		
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.011
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	13-AUG-21		
Boron (B)-Total	<0.010		0.010	mg/L	13-AUG-21		0.2
Cadmium (Cd)-Total	0.0000225		0.0000050	mg/L	13-AUG-21	0.00004	0.0001
Calcium (Ca)-Total	18.9		0.050	mg/L	13-AUG-21		
Cesium (Cs)-Total	0.000069		0.000010	mg/L	13-AUG-21		
Chromium (Cr)-Total	0.00178		0.00050	mg/L	13-AUG-21	*0.001	
Cobalt (Co)-Total	0.00040		0.00010	mg/L	13-AUG-21		0.0009
Copper (Cu)-Total	0.00167		0.00050	mg/L	13-AUG-21	0.002	*0.001
Iron (Fe)-Total	1.26		0.010	mg/L	13-AUG-21	*0.3	*0.3
Lead (Pb)-Total	0.000512		0.000050	mg/L	13-AUG-21	0.001	0.001
Lithium (Li)-Total	0.0015		0.0010	mg/L	13-AUG-21		
Magnesium (Mg)-Total	4.49		0.0050	mg/L	13-AUG-21		
Manganese (Mn)-Total	0.0733		0.00050	mg/L	13-AUG-21		
Mercury (Hg)-Total	0.00093		0.00050	ug/L	26-AUG-21	0.026	0.2
Molybdenum (Mo)-Total	0.000101		0.000050	mg/L	13-AUG-21	0.073	0.04
Nickel (Ni)-Total	0.00145		0.00050	mg/L	13-AUG-21	0.025	0.025
Phosphorus (P)-Total	<0.050		0.050	mg/L	13-AUG-21		**0.01
Potassium (K)-Total	0.483		0.050	mg/L	13-AUG-21		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL) **#2: Ontario PWQO 1994 Guidelines**

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2626399-11 CNC-DUP-01							
Sampled By: TB/MG on 11-AUG-21							
Matrix: WATER							
Total Metals							
Rubidium (Rb)-Total	0.00219		0.00020	mg/L	13-AUG-21		
Selenium (Se)-Total	0.000152		0.000050	mg/L	13-AUG-21	0.001	0.1
Silicon (Si)-Total	2.97		0.10	mg/L	13-AUG-21		
Silver (Ag)-Total	<0.000050		0.000050	mg/L	13-AUG-21	0.0001	0.0001
Sodium (Na)-Total	1.74		0.050	mg/L	13-AUG-21		
Strontium (Sr)-Total	0.0381		0.0010	mg/L	13-AUG-21		
Sulfur (S)-Total	<0.50		0.50	mg/L	13-AUG-21		
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	13-AUG-21		
Thallium (Tl)-Total	0.000011		0.000010	mg/L	13-AUG-21	0.0008	0.0003
Thorium (Th)-Total	0.00019		0.00010	mg/L	13-AUG-21		
Tin (Sn)-Total	<0.00010		0.00010	mg/L	13-AUG-21		
Titanium (Ti)-Total	0.0293		0.00030	mg/L	13-AUG-21		
Tungsten (W)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.03
Uranium (U)-Total	0.000087		0.000010	mg/L	13-AUG-21		0.005
Vanadium (V)-Total	0.00188		0.00050	mg/L	13-AUG-21		0.006
Zinc (Zn)-Total	0.0040		0.0030	mg/L	13-AUG-21	0.03	0.02
Zirconium (Zr)-Total	0.00106		0.00020	mg/L	16-AUG-21		0.004
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD			No Unit	16-AUG-21		
Aluminum (Al)-Dissolved	0.186		0.0010	mg/L	17-AUG-21	*0.005	*0.015
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.02
Arsenic (As)-Dissolved	0.00145		0.00010	mg/L	17-AUG-21	0.005	0.005
Barium (Ba)-Dissolved	0.00716		0.00010	mg/L	17-AUG-21		
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.011
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	17-AUG-21		
Boron (B)-Dissolved	<0.010		0.010	mg/L	17-AUG-21		0.2
Cadmium (Cd)-Dissolved	0.0000175		0.0000050	mg/L	17-AUG-21	0.00004	0.0001
Calcium (Ca)-Dissolved	19.9		0.050	mg/L	17-AUG-21		
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21		
Chromium (Cr)-Dissolved	0.00077		0.00010	mg/L	17-AUG-21	0.001	
Cobalt (Co)-Dissolved	0.00016		0.00010	mg/L	17-AUG-21		0.0009
Copper (Cu)-Dissolved	0.00146		0.00020	mg/L	17-AUG-21	0.002	*0.001
Iron (Fe)-Dissolved	0.668		0.010	mg/L	17-AUG-21	*0.3	*0.3
Lead (Pb)-Dissolved	0.000308		0.000050	mg/L	17-AUG-21	0.001	0.001
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	17-AUG-21		
Magnesium (Mg)-Dissolved	4.93		0.0050	mg/L	17-AUG-21		
Manganese (Mn)-Dissolved	0.0611		0.00010	mg/L	17-AUG-21		
Molybdenum (Mo)-Dissolved	0.000090		0.000050	mg/L	17-AUG-21	0.073	0.04
Nickel (Ni)-Dissolved	0.00085		0.00050	mg/L	17-AUG-21	0.025	0.025
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	17-AUG-21		**0.01
Potassium (K)-Dissolved	0.352		0.050	mg/L	17-AUG-21		
Rubidium (Rb)-Dissolved	0.00114		0.00020	mg/L	17-AUG-21		
Selenium (Se)-Dissolved	0.000134		0.000050	mg/L	17-AUG-21	0.001	0.1
Silicon (Si)-Dissolved	1.94		0.050	mg/L	17-AUG-21		
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21	0.0001	0.0001
Sodium (Na)-Dissolved	1.79		0.050	mg/L	17-AUG-21		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
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Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2		
L2626399-11 CNC-DUP-01 Sampled By: TB/MG on 11-AUG-21 Matrix: WATER									
Dissolved Metals									
Strontium (Sr)-Dissolved	0.0389		0.00010	mg/L	17-AUG-21				
Sulfur (S)-Dissolved	0.67		0.50	mg/L	17-AUG-21				
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	17-AUG-21				
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21	0.0008	0.0003		
Thorium (Th)-Dissolved	0.00016		0.00010	mg/L	17-AUG-21				
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21				
Titanium (Ti)-Dissolved	0.00835		0.00030	mg/L	17-AUG-21				
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.03		
Uranium (U)-Dissolved	0.000071		0.000010	mg/L	17-AUG-21		0.005		
Vanadium (V)-Dissolved	0.00083		0.00050	mg/L	17-AUG-21		0.006		
Zinc (Zn)-Dissolved	0.0052		0.0010	mg/L	17-AUG-21	0.03	0.02		
Zirconium (Zr)-Dissolved	0.00080		0.00020	mg/L	17-AUG-21		0.004		
Speciated Metals									
Methylmercury (as MeHg)-Total	0.000345		0.000020	ug/L	01-SEP-21				
L2626399-12 TRIP BLANK Sampled By: TB/MG on 11-AUG-21 Matrix: WATER						#1	#2		
Physical Tests									
Conductivity	1.2		1.0	umhos/cm	14-AUG-21				
Hardness (as CaCO3)	<0.50	HTC	0.50	mg/L	16-AUG-21				
pH	5.56	HTD	0.10	pH units	17-AUG-21	*6.5-9.0	*6.5-8.5		
Total Suspended Solids	<3.0		3.0	mg/L	14-AUG-21				
Total Dissolved Solids	<10		10	mg/L	13-AUG-21				
Anions and Nutrients									
Alkalinity, Total (as CaCO3)	<1.0		1.0	mg/L	17-AUG-21				
Ammonia, Total (as N)	0.012		0.010	mg/L	20-AUG-21				
Bromide (Br)	<0.10		0.10	mg/L	16-AUG-21				
Chloride (Cl)	<0.50		0.50	mg/L	16-AUG-21	120			
Fluoride (F)	0.067		0.020	mg/L	16-AUG-21	0.12			
Nitrate (as N)	<0.020		0.020	mg/L	16-AUG-21	3			
Nitrite (as N)	<0.010		0.010	mg/L	16-AUG-21	0.06			
Phosphorus (P)-Total	<0.0010		0.0010	mg/L	18-AUG-21		0.01		
Sulfate (SO4)	<0.30		0.30	mg/L	16-AUG-21				
Cyanides									
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L	16-AUG-21				
Cyanide, Total	<0.0020		0.0020	mg/L	16-AUG-21				
Cyanide, Free	<0.0020		0.0020	mg/L	16-AUG-21	0.005			
Inorganic Parameters									
Acidity (as CaCO3)	<2.0		2.0	mg/L	14-AUG-21				
Total Metals									
Aluminum (Al)-Total	<0.0050		0.0050	mg/L	13-AUG-21	0.005	0.015		
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.02		
Arsenic (As)-Total	<0.00010		0.00010	mg/L	13-AUG-21	0.005	0.005		
Barium (Ba)-Total	<0.00010		0.00010	mg/L	13-AUG-21				
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.011		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL) **#2: Ontario PWQO 1994 Guidelines**

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2626399-12 TRIP BLANK Sampled By: TB/MG on 11-AUG-21 Matrix: WATER							
Total Metals							
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	13-AUG-21		
Boron (B)-Total	<0.010		0.010	mg/L	13-AUG-21		0.2
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	13-AUG-21	0.00004	0.0001
Calcium (Ca)-Total	<0.050		0.050	mg/L	13-AUG-21		
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	13-AUG-21		
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	13-AUG-21	0.001	
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.0009
Copper (Cu)-Total	<0.00050		0.00050	mg/L	13-AUG-21	0.002	0.001
Iron (Fe)-Total	<0.010		0.010	mg/L	13-AUG-21	0.3	0.3
Lead (Pb)-Total	<0.000050		0.000050	mg/L	13-AUG-21	0.001	0.001
Lithium (Li)-Total	<0.0010		0.0010	mg/L	13-AUG-21		
Magnesium (Mg)-Total	<0.0050		0.0050	mg/L	13-AUG-21		
Manganese (Mn)-Total	<0.00050		0.00050	mg/L	13-AUG-21		
Mercury (Hg)-Total	<0.00050		0.00050	ug/L	16-AUG-21	0.026	0.2
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L	13-AUG-21	0.073	0.04
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	13-AUG-21	0.025	0.025
Phosphorus (P)-Total	<0.050		0.050	mg/L	13-AUG-21		**0.01
Potassium (K)-Total	<0.050		0.050	mg/L	13-AUG-21		
Rubidium (Rb)-Total	<0.00020		0.00020	mg/L	13-AUG-21		
Selenium (Se)-Total	<0.000050		0.000050	mg/L	13-AUG-21	0.001	0.1
Silicon (Si)-Total	<0.10		0.10	mg/L	13-AUG-21		
Silver (Ag)-Total	<0.000050		0.000050	mg/L	13-AUG-21	0.0001	0.0001
Sodium (Na)-Total	0.084	RRV	0.050	mg/L	13-AUG-21		
Strontium (Sr)-Total	<0.0010		0.0010	mg/L	13-AUG-21		
Sulfur (S)-Total	<0.50		0.50	mg/L	13-AUG-21		
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	13-AUG-21		
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	13-AUG-21	0.0008	0.0003
Thorium (Th)-Total	<0.00010		0.00010	mg/L	13-AUG-21		
Tin (Sn)-Total	<0.00010		0.00010	mg/L	13-AUG-21		
Titanium (Ti)-Total	<0.00030		0.00030	mg/L	13-AUG-21		
Tungsten (W)-Total	<0.00010		0.00010	mg/L	13-AUG-21		0.03
Uranium (U)-Total	<0.000010		0.000010	mg/L	13-AUG-21		0.005
Vanadium (V)-Total	<0.00050		0.00050	mg/L	13-AUG-21		0.006
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	13-AUG-21	0.03	0.02
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	13-AUG-21		0.004
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD			No Unit	16-AUG-21		
Aluminum (Al)-Dissolved	<0.0010		0.0010	mg/L	17-AUG-21	0.005	0.015
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.02
Arsenic (As)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21	0.005	0.005
Barium (Ba)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.011
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	17-AUG-21		
Boron (B)-Dissolved	<0.010		0.010	mg/L	17-AUG-21		0.2
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	17-AUG-21	0.00004	0.0001

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL) **#2: Ontario PWQO 1994 Guidelines**

Sample Details Grouping / Analyte	Result	Qualifier	D.L.	Units	Analyzed	Guideline Limits #1	Guideline Limits #2
L2626399-12 TRIP BLANK Sampled By: TB/MG on 11-AUG-21 Matrix: WATER							
Dissolved Metals							
Calcium (Ca)-Dissolved	<0.050		0.050	mg/L	17-AUG-21		
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21		
Chromium (Cr)-Dissolved	0.00012		0.00010	mg/L	17-AUG-21	0.001	
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.0009
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	17-AUG-21	0.002	0.001
Iron (Fe)-Dissolved	<0.010		0.010	mg/L	17-AUG-21	0.3	0.3
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	17-AUG-21	0.001	0.001
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	17-AUG-21		
Magnesium (Mg)-Dissolved	<0.0050		0.0050	mg/L	17-AUG-21		
Manganese (Mn)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L	17-AUG-21	0.073	0.04
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	17-AUG-21	0.025	0.025
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	17-AUG-21		**0.01
Potassium (K)-Dissolved	<0.050		0.050	mg/L	17-AUG-21		
Rubidium (Rb)-Dissolved	<0.00020		0.00020	mg/L	17-AUG-21		
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L	17-AUG-21	0.001	0.1
Silicon (Si)-Dissolved	<0.050		0.050	mg/L	17-AUG-21		
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21	0.0001	0.0001
Sodium (Na)-Dissolved	<0.050		0.050	mg/L	17-AUG-21		
Strontium (Sr)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		
Sulfur (S)-Dissolved	<0.50		0.50	mg/L	17-AUG-21		
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	17-AUG-21		
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21	0.0008	0.0003
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	17-AUG-21		
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	17-AUG-21		0.03
Uranium (U)-Dissolved	<0.000010		0.000010	mg/L	17-AUG-21		0.005
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	17-AUG-21		0.006
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	17-AUG-21	0.03	0.02
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	17-AUG-21		0.004
Speciated Metals							
Methylmercury (as MeHg)-Total	<0.000020		0.000020	ug/L	17-AUG-21		

** Detection Limit for result exceeds Guideline Limit. Assessment against Guideline Limit cannot be made.
* Analytical result for this parameter exceeds Guideline Limit listed on this report. Guideline Limits applied:

Ontario PWQO (1994 + Federal CCME (JUN,2018) and Ontario R153 Guidelines (2011) = [Suite] - ON-PWQO+CCME-FAL-WATER

#1: Federal CCME Freshwater Aquatic Life (FAL)

#2: Ontario PWQO 1994 Guidelines

Reference Information

Sample Parameter Qualifier key listed:

Qualifier	Description
RRV	Reported Result Verified By Repeat Analysis
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
HTD	Hold time exceeded for re-analysis or dilution, but initial testing was conducted within hold time.
HTC	Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).
NR:PH8	No Result: No Acidity, pH Of Sample >8.3

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Method Reference***
ACIDITY-WT	Water	Acidity (as CaCO3)	APHA 2310 B - Potentiometric Titration
ALK-WT	Water	Alkalinity, Total (as CaCO3)	APHA 2320B

This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint.

BR-IC-N-WT	Water	Bromide in Water by IC	EPA 300.1 (mod)

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

CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)

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

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-FREE-CFA-WT	Water	Free Cyanide in water by CFA	ASTM 7237

This analysis is carried out using procedures adapted from ASTM Method 7237 "Free Cyanide with Flow Injection Analysis (FIA) Utilizing Gas Diffusion Separation and Amperometric Detection". Free cyanide is determined by in-line gas diffusion at pH 6 with final determination by colourimetric analysis.

CN-TOT-WT	Water	Cyanide, Total	ISO 14403-2

Total cyanide is determined by the combination of UV digestion and distillation. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

When using this method, high levels of thiocyanate in samples can cause false positives at ~1-2% of the thiocyanate concentration. For samples with detectable cyanide analyzed by this method, ALS recommends analysis for thiocyanate to check for this potential interference

CN-WAD-WT	Water	Cyanide, Weak Acid Diss	APHA 4500CN I-Weak acid Dist Colorimet

Weak acid dissociable cyanide (WAD) is determined by undergoing a distillation procedure. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

EC-SCREEN-WT	Water	Conductivity Screen (Internal Use Only)	APHA 2510

Qualitative analysis of conductivity where required during preparation of other tests - e.g. TDS, metals, etc.

EC-WT	Water	Conductivity	APHA 2510 B

Water samples can be measured directly by immersing the conductivity cell into the sample.

F-IC-N-WT	Water	Fluoride in Water by IC	EPA 300.1 (mod)

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

HARDNESS-CALC-WT	Water	Hardness	APHA 2340 B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-T-U-CVAF-VA	Water	Total Mercury in Water by CVAFS (Ultra)	EPA 1631 REV. E

This analysis is carried out using procedures adapted from Method 1631 Rev. E. by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to a purge and trap concentration step and final reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry.

MEHG-T-GCAF-VA	Water	Total Methylmercury in Water by GCAFS	EPA 1630

This method follows Method 1630 of the US EPA. Samples are distilled under an inert gas flow to isolate methylmercury and minimize matrix interferences. The distillate is analyzed by aqueous phase ethylation, purge and trap, desorption and GC separation. The separated species are then pyrolized to elemental Hg and quantified by cold vapour atomic flourescence spectroscopy. Results are reported "as MeHg".

Reference Information

MET-D-CCMS-WP	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020B (mod)

Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

MET-T-CCMS-WT	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F

Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.

NH3-F-WT	Water	Ammonia in Water by Fluorescence	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NO2-IC-WT	Water	Nitrite in Water by IC	EPA 300.1 (mod)

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

NO3-IC-WT	Water	Nitrate in Water by IC	EPA 300.1 (mod)

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

P-T-L-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS-L

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.

PH-WT	Water	pH	APHA 4500 H-Electrode

Water samples are analyzed directly by a calibrated pH meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days

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

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

SOLIDS-TDS-WT	Water	Total Dissolved Solids	APHA 2540C

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

SOLIDS-TSS-WT	Water	Suspended solids	APHA 2540 D-Gravimetric

A well-mixed sample is filtered through a weighed standard glass fibre filter and the residue retained is dried in an oven at 104–1°C for a minimum of four hours or until a constant weight is achieved.

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

Chain of Custody numbers:

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

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA	WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA		

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guideline limits are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

Quality Control Report

Workorder: L2626399 Report Date: 27-SEP-21

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ACIDITY-WT	**Water**							
Batch R5550197								
WG3597193-3 DUP		**L2626399-11**						
Acidity (as CaCO3)		4.0	3.2	J	mg/L	0.8	4	14-AUG-21
WG3597193-2 LCS								
Acidity (as CaCO3)			104.0		%		85-115	14-AUG-21
WG3597193-1 MB								
Acidity (as CaCO3)			<2.0		mg/L		2	14-AUG-21
ALK-WT	**Water**							
Batch R5550114								
WG3596878-4 DUP		**WG3596878-3**						
Alkalinity, Total (as CaCO3)		246	251		mg/L	1.9	20	13-AUG-21
WG3596878-2 LCS								
Alkalinity, Total (as CaCO3)			109.9		%		85-115	13-AUG-21
WG3596878-1 MB								
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	13-AUG-21
Batch R5554197								
WG3598471-4 DUP		**WG3598471-3**						
Alkalinity, Total (as CaCO3)		692	698		mg/L	0.9	20	17-AUG-21
WG3598471-2 LCS								
Alkalinity, Total (as CaCO3)			101.2		%		85-115	17-AUG-21
WG3598471-1 MB								
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	17-AUG-21
Batch R5555638								
WG3598473-4 DUP		**WG3598473-3**						
Alkalinity, Total (as CaCO3)		294	291		mg/L	0.8	20	17-AUG-21
WG3598473-2 LCS								
Alkalinity, Total (as CaCO3)			101.9		%		85-115	17-AUG-21
WG3598473-1 MB								
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	17-AUG-21
BR-IC-N-WT	**Water**							
Batch R5553200								
WG3598094-4 DUP		**WG3598094-3**						
Bromide (Br)		<0.10	<0.10	RPD-NA	mg/L	N/A	20	16-AUG-21
WG3598094-2 LCS								
Bromide (Br)			103.3		%		85-115	16-AUG-21
WG3598094-1 MB								
Bromide (Br)			<0.10		mg/L		0.1	16-AUG-21
WG3598094-5 MS		**WG3598094-3**						

Quality Control Report

Workorder: L2626399 Report Date: 27-SEP-21

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BR-IC-N-WT	**Water**							
Batch R5553200								
WG3598094-5 MS		**WG3598094-3**						
Bromide (Br)			94.3		%		75-125	16-AUG-21
CL-IC-N-WT	**Water**							
Batch R5553200								
WG3598094-4 DUP		**WG3598094-3**						
Chloride (Cl)		<0.50	<0.50	RPD-NA	mg/L	N/A	20	16-AUG-21
WG3598094-2 LCS								
Chloride (Cl)			101.3		%		90-110	16-AUG-21
WG3598094-1 MB								
Chloride (Cl)			<0.50		mg/L		0.5	16-AUG-21
WG3598094-5 MS		**WG3598094-3**						
Chloride (Cl)			102.6		%		75-125	16-AUG-21
CN-FREE-CFA-WT	**Water**							
Batch R5551836								
WG3597929-3 DUP		**WG3597929-5**						
Cyanide, Free		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	16-AUG-21
WG3597929-2 LCS								
Cyanide, Free			97.9		%		80-120	16-AUG-21
WG3597929-1 MB								
Cyanide, Free			<0.0020		mg/L		0.002	16-AUG-21
WG3597929-4 MS		**WG3597929-5**						
Cyanide, Free			105.9		%		75-125	16-AUG-21
Batch R5556478								
WG3598757-25 DUP		**WG3598757-23**						
Cyanide, Free		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	17-AUG-21
WG3598757-30 DUP		**WG3598757-28**						
Cyanide, Free		<0.20	<0.20	RPD-NA	mg/L	N/A	20	19-AUG-21
WG3598757-22 LCS								
Cyanide, Free			87.8		%		80-120	17-AUG-21
WG3598757-27 LCS								
Cyanide, Free			94.5		%		80-120	18-AUG-21
WG3598757-21 MB								
Cyanide, Free			<0.0020		mg/L		0.002	17-AUG-21
WG3598757-26 MB								
Cyanide, Free			<0.0020		mg/L		0.002	18-AUG-21
WG3598757-24 MS		**WG3598757-23**						
Cyanide, Free			97.6		%		75-125	17-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-FREE-CFA-WT	**Water**							
Batch R5556478								
WG3598757-29 MS		**WG3598757-28**						
Cyanide, Free			107.1		%		75-125	19-AUG-21
CN-TOT-WT	**Water**							
Batch R5551836								
WG3597929-3 DUP		**WG3597929-5**						
Cyanide, Total		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	16-AUG-21
WG3597929-2 LCS								
Cyanide, Total			101.4		%		80-120	16-AUG-21
WG3597929-1 MB								
Cyanide, Total			<0.0020		mg/L		0.002	16-AUG-21
WG3597929-4 MS		**WG3597929-5**						
Cyanide, Total			106.3		%		70-130	16-AUG-21
Batch R5556478								
WG3598757-25 DUP		**WG3598757-23**						
Cyanide, Total		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	17-AUG-21
WG3598757-30 DUP		**WG3598757-28**						
Cyanide, Total		<0.20	<0.20	RPD-NA	mg/L	N/A	20	19-AUG-21
WG3598757-22 LCS								
Cyanide, Total			97.6		%		80-120	17-AUG-21
WG3598757-27 LCS								
Cyanide, Total			96.6		%		80-120	18-AUG-21
WG3598757-21 MB								
Cyanide, Total			<0.0020		mg/L		0.002	17-AUG-21
WG3598757-26 MB								
Cyanide, Total			<0.0020		mg/L		0.002	18-AUG-21
WG3598757-24 MS		**WG3598757-23**						
Cyanide, Total			96.9		%		70-130	17-AUG-21
WG3598757-29 MS		**WG3598757-28**						
Cyanide, Total			95.4		%		70-130	19-AUG-21
CN-WAD-WT	**Water**							
Batch R5551836								
WG3597929-3 DUP		**WG3597929-5**						
Cyanide, Weak Acid Diss		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	16-AUG-21
WG3597929-2 LCS								
Cyanide, Weak Acid Diss			100.7		%		80-120	16-AUG-21
WG3597929-1 MB								
Cyanide, Weak Acid Diss			<0.0020		mg/L		0.002	16-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-WAD-WT	**Water**							
Batch R5551836								
WG3597929-4 MS		**WG3597929-5**						
Cyanide, Weak Acid Diss			107.6		%		75-125	16-AUG-21
Batch R5556478								
WG3598757-25 DUP		**WG3598757-23**						
Cyanide, Weak Acid Diss		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	17-AUG-21
WG3598757-30 DUP		**WG3598757-28**						
Cyanide, Weak Acid Diss		<0.20	<0.20	RPD-NA	mg/L	N/A	20	19-AUG-21
WG3598757-22 LCS								
Cyanide, Weak Acid Diss			95.1		%		80-120	17-AUG-21
WG3598757-27 LCS								
Cyanide, Weak Acid Diss			86.0		%		80-120	18-AUG-21
WG3598757-21 MB								
Cyanide, Weak Acid Diss			<0.0020		mg/L		0.002	17-AUG-21
WG3598757-26 MB								
Cyanide, Weak Acid Diss			<0.0020		mg/L		0.002	18-AUG-21
WG3598757-24 MS		**WG3598757-23**						
Cyanide, Weak Acid Diss			99.3		%		75-125	17-AUG-21
WG3598757-29 MS		**WG3598757-28**						
Cyanide, Weak Acid Diss			108.4		%		75-125	19-AUG-21
EC-WT	**Water**							
Batch R5550114								
WG3596878-4 DUP		**WG3596878-3**						
Conductivity		463	467		umhos/cm	0.9	10	13-AUG-21
WG3596878-2 LCS								
Conductivity			99.0		%		90-110	13-AUG-21
WG3596878-1 MB								
Conductivity			<2.0		umhos/cm		2	13-AUG-21
Batch R5550496								
WG3597269-4 DUP		**WG3597269-3**						
Conductivity		227	232		umhos/cm	2.2	10	14-AUG-21
WG3597269-2 LCS								
Conductivity			98.7		%		90-110	14-AUG-21
WG3597269-1 MB								
Conductivity			<1.0		umhos/cm		1	14-AUG-21
F-IC-N-WT	**Water**							

Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F-IC-N-WT	**Water**							
Batch R5553200								
WG3598094-4 DUP		**WG3598094-3**						
Fluoride (F)		<0.020	<0.020	RPD-NA	mg/L	N/A	20	16-AUG-21
WG3598094-2 LCS								
Fluoride (F)			103.8		%		90-110	16-AUG-21
WG3598094-1 MB								
Fluoride (F)			<0.020		mg/L		0.02	16-AUG-21
WG3598094-5 MS		**WG3598094-3**						
Fluoride (F)			103.9		%		75-125	16-AUG-21
HG-T-U-CVAF-VA	**Water**							
Batch R5553002								
WG3598324-3 DUP		**L2617704-12**						
Mercury (Hg)-Total		<0.00050	<0.00050	RPD-NA	ug/L	N/A	20	16-AUG-21
WG3598324-2 LCS								
Mercury (Hg)-Total			105.6		%		80-120	16-AUG-21
WG3598324-1 MB								
Mercury (Hg)-Total			<0.00050		ug/L		0.0005	16-AUG-21
Batch R5570905								
WG3606120-3 DUP		**L2627388-3**						
Mercury (Hg)-Total		0.00972	0.00990		ug/L	1.8	20	26-AUG-21
WG3606120-2 LCS								
Mercury (Hg)-Total			102.6		%		80-120	26-AUG-21
WG3606120-1 MB								
Mercury (Hg)-Total			<0.00050		ug/L		0.0005	26-AUG-21
WG3606120-4 MS		**L2626399-10**						
Mercury (Hg)-Total			91.2		%		70-130	26-AUG-21
Batch R5570940								
WG3606193-2 LCS								
Mercury (Hg)-Total			95.2		%		80-120	26-AUG-21
WG3606193-1 MB								
Mercury (Hg)-Total			<0.00050		ug/L		0.0005	26-AUG-21
MEHG-T-GCAF-VA	**Water**							
Batch R5552847								
WG3600051-2 DUP		**L2618230-18**						
Methylmercury (as MeHg)-Total		0.000023	0.000027		ug/L	14	20	17-AUG-21
WG3600051-3 LCS								
Methylmercury (as MeHg)-Total			86.2		%		70-130	17-AUG-21
WG3600051-1 MB								
							0.00002	

Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MEHG-T-GCAF-VA	**Water**							
Batch R5552847								
WG3600051-1 MB								
Methylmercury (as MeHg)-Total			<0.000020		ug/L		0.00002	17-AUG-21
WG3600051-4 MS		**L2618474-1**						
Methylmercury (as MeHg)-Total			80.9		%		70-130	17-AUG-21
Batch R5572443								
WG3609790-2 DUP		**L2626399-1**						
Methylmercury (as MeHg)-Total		0.000102	0.000106		ug/L	3.9	20	01-SEP-21
WG3609790-3 LCS								
Methylmercury (as MeHg)-Total			103.6		%		70-130	01-SEP-21
WG3609790-1 MB								
Methylmercury (as MeHg)-Total			<0.000020		ug/L		0.00002	01-SEP-21
WG3609790-4 MS		**L2631766-1**						
Methylmercury (as MeHg)-Total			90.9		%		70-130	01-SEP-21
MET-D-CCMS-WP	**Water**							
Batch R5557141								
WG3597631-4 DUP		**WG3597631-3**						
Aluminum (Al)-Dissolved		0.0025	0.0026		mg/L	3.1	20	17-AUG-21
Antimony (Sb)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	17-AUG-21
Arsenic (As)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	17-AUG-21
Barium (Ba)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	17-AUG-21
Beryllium (Be)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	17-AUG-21
Bismuth (Bi)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	17-AUG-21
Boron (B)-Dissolved		<0.010	<0.010	RPD-NA	mg/L	N/A	20	17-AUG-21
Cadmium (Cd)-Dissolved		<0.0000050	<0.000005C	RPD-NA	mg/L	N/A	20	17-AUG-21
Calcium (Ca)-Dissolved		<0.050	<0.050	RPD-NA	mg/L	N/A	20	17-AUG-21
Cesium (Cs)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	17-AUG-21
Chromium (Cr)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	17-AUG-21
Cobalt (Co)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	17-AUG-21
Copper (Cu)-Dissolved		<0.00020	0.00036	RPD-NA	mg/L	N/A	20	17-AUG-21
Iron (Fe)-Dissolved		<0.010	<0.010	RPD-NA	mg/L	N/A	20	17-AUG-21
Lead (Pb)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	17-AUG-21
Lithium (Li)-Dissolved		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	17-AUG-21
Magnesium (Mg)-Dissolved		<0.0050	0.0061	RPD-NA	mg/L	N/A	20	17-AUG-21
Manganese (Mn)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	17-AUG-21
Molybdenum (Mo)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	17-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5557141								
WG3597631-4 DUP		**WG3597631-3**						
Nickel (Ni)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	17-AUG-21
Phosphorus (P)-Dissolved		<0.030	<0.030	RPD-NA	mg/L	N/A	20	17-AUG-21
Potassium (K)-Dissolved		<0.050	<0.050	RPD-NA	mg/L	N/A	20	17-AUG-21
Rubidium (Rb)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	17-AUG-21
Selenium (Se)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	17-AUG-21
Silicon (Si)-Dissolved		<0.050	<0.050	RPD-NA	mg/L	N/A	20	17-AUG-21
Silver (Ag)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	17-AUG-21
Sodium (Na)-Dissolved		<0.050	<0.050	RPD-NA	mg/L	N/A	20	17-AUG-21
Strontium (Sr)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	17-AUG-21
Sulfur (S)-Dissolved		<0.50	<0.50	RPD-NA	mg/L	N/A	20	17-AUG-21
Tellurium (Te)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	17-AUG-21
Thallium (Tl)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	17-AUG-21
Thorium (Th)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	17-AUG-21
Tin (Sn)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	17-AUG-21
Titanium (Ti)-Dissolved		<0.00030	<0.00030	RPD-NA	mg/L	N/A	20	17-AUG-21
Tungsten (W)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	17-AUG-21
Uranium (U)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	17-AUG-21
Vanadium (V)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	17-AUG-21
Zinc (Zn)-Dissolved		0.0011	0.0011		mg/L	5.2	20	17-AUG-21
Zirconium (Zr)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	17-AUG-21
WG3597633-4 DUP		**WG3597633-3**						
Aluminum (Al)-Dissolved		0.0041	0.0041		mg/L	1.5	20	17-AUG-21
Antimony (Sb)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	17-AUG-21
Arsenic (As)-Dissolved		0.00093	0.00097		mg/L	3.4	20	17-AUG-21
Barium (Ba)-Dissolved		0.0365	0.0368		mg/L	0.8	20	17-AUG-21
Beryllium (Be)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	17-AUG-21
Bismuth (Bi)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	17-AUG-21
Boron (B)-Dissolved		0.099	0.100		mg/L	0.9	20	17-AUG-21
Cadmium (Cd)-Dissolved		0.0000079	0.0000070		mg/L	13	20	17-AUG-21
Calcium (Ca)-Dissolved		54.3	52.4		mg/L	3.6	20	17-AUG-21
Cesium (Cs)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	17-AUG-21
Chromium (Cr)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	17-AUG-21
Cobalt (Co)-Dissolved		0.00012	0.00012		mg/L	1.8	20	17-AUG-21

Quality Control Report

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Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5557141								
WG3597633-4 DUP		**WG3597633-3**						
Copper (Cu)-Dissolved		0.00067	0.00070		mg/L	3.9	20	17-AUG-21
Iron (Fe)-Dissolved		<0.010	<0.010	RPD-NA	mg/L	N/A	20	17-AUG-21
Lead (Pb)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	17-AUG-21
Lithium (Li)-Dissolved		0.0329	0.0329		mg/L	0.2	20	17-AUG-21
Magnesium (Mg)-Dissolved		52.1	52.5		mg/L	0.8	20	17-AUG-21
Manganese (Mn)-Dissolved		0.00855	0.00853		mg/L	0.2	20	17-AUG-21
Molybdenum (Mo)-Dissolved		0.00169	0.00170		mg/L	0.6	20	17-AUG-21
Nickel (Ni)-Dissolved		0.00118	0.00117		mg/L	0.5	20	17-AUG-21
Phosphorus (P)-Dissolved		<0.030	<0.030	RPD-NA	mg/L	N/A	20	17-AUG-21
Potassium (K)-Dissolved		4.68	4.77		mg/L	1.8	20	17-AUG-21
Rubidium (Rb)-Dissolved		0.00175	0.00179		mg/L	1.9	20	17-AUG-21
Selenium (Se)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	17-AUG-21
Silicon (Si)-Dissolved		6.49	6.50		mg/L	0.2	20	17-AUG-21
Silver (Ag)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	17-AUG-21
Sodium (Na)-Dissolved		29.8	29.7		mg/L	0.2	20	17-AUG-21
Strontium (Sr)-Dissolved		0.370	0.368		mg/L	0.6	20	17-AUG-21
Sulfur (S)-Dissolved		23.5	23.3		mg/L	0.8	20	17-AUG-21
Tellurium (Te)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	17-AUG-21
Thallium (Tl)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	17-AUG-21
Thorium (Th)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	17-AUG-21
Tin (Sn)-Dissolved		0.00277	0.00281		mg/L	1.4	20	17-AUG-21
Titanium (Ti)-Dissolved		<0.00030	<0.00030	RPD-NA	mg/L	N/A	20	17-AUG-21
Tungsten (W)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	17-AUG-21
Uranium (U)-Dissolved		0.00213	0.00216		mg/L	1.1	20	17-AUG-21
Vanadium (V)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	17-AUG-21
Zinc (Zn)-Dissolved		0.0017	0.0017		mg/L	3.3	20	17-AUG-21
Zirconium (Zr)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	17-AUG-21
WG3597631-2 LCS								
Aluminum (Al)-Dissolved			104.6		%		80-120	17-AUG-21
Antimony (Sb)-Dissolved			101.6		%		80-120	17-AUG-21
Arsenic (As)-Dissolved			103.9		%		80-120	17-AUG-21
Barium (Ba)-Dissolved			104.7		%		80-120	17-AUG-21
Beryllium (Be)-Dissolved			98.3		%		80-120	17-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5557141								
WG3597631-2 LCS								
Bismuth (Bi)-Dissolved			102.3		%		80-120	17-AUG-21
Boron (B)-Dissolved			91.5		%		80-120	17-AUG-21
Cadmium (Cd)-Dissolved			103.8		%		80-120	17-AUG-21
Calcium (Ca)-Dissolved			99.6		%		80-120	17-AUG-21
Cesium (Cs)-Dissolved			100.0		%		80-120	17-AUG-21
Chromium (Cr)-Dissolved			102.7		%		80-120	17-AUG-21
Cobalt (Co)-Dissolved			101.7		%		80-120	17-AUG-21
Copper (Cu)-Dissolved			103.2		%		80-120	17-AUG-21
Iron (Fe)-Dissolved			98.2		%		80-120	17-AUG-21
Lead (Pb)-Dissolved			104.4		%		80-120	17-AUG-21
Lithium (Li)-Dissolved			97.9		%		80-120	17-AUG-21
Magnesium (Mg)-Dissolved			113.4		%		80-120	17-AUG-21
Manganese (Mn)-Dissolved			104.2		%		80-120	17-AUG-21
Molybdenum (Mo)-Dissolved			103.6		%		80-120	17-AUG-21
Nickel (Ni)-Dissolved			101.3		%		80-120	17-AUG-21
Phosphorus (P)-Dissolved			101.0		%		80-120	17-AUG-21
Potassium (K)-Dissolved			105.7		%		80-120	17-AUG-21
Rubidium (Rb)-Dissolved			103.3		%		80-120	17-AUG-21
Selenium (Se)-Dissolved			103.9		%		80-120	17-AUG-21
Silicon (Si)-Dissolved			103.8		%		80-120	17-AUG-21
Silver (Ag)-Dissolved			99.1		%		80-120	17-AUG-21
Sodium (Na)-Dissolved			104.0		%		80-120	17-AUG-21
Strontium (Sr)-Dissolved			107.4		%		80-120	17-AUG-21
Sulfur (S)-Dissolved			100.9		%		80-120	17-AUG-21
Tellurium (Te)-Dissolved			97.0		%		80-120	17-AUG-21
Thallium (Tl)-Dissolved			101.2		%		80-120	17-AUG-21
Thorium (Th)-Dissolved			100.7		%		80-120	17-AUG-21
Tin (Sn)-Dissolved			95.4		%		80-120	17-AUG-21
Titanium (Ti)-Dissolved			100.7		%		80-120	17-AUG-21
Tungsten (W)-Dissolved			102.9		%		80-120	17-AUG-21
Uranium (U)-Dissolved			96.7		%		80-120	17-AUG-21
Vanadium (V)-Dissolved			103.5		%		80-120	17-AUG-21
Zinc (Zn)-Dissolved			103.3		%		80-120	17-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5557141								
WG3597631-2 LCS								
Zirconium (Zr)-Dissolved			94.4		%		80-120	17-AUG-21
WG3597633-2 LCS								
Aluminum (Al)-Dissolved			106.9		%		80-120	17-AUG-21
Antimony (Sb)-Dissolved			98.3		%		80-120	17-AUG-21
Arsenic (As)-Dissolved			104.6		%		80-120	17-AUG-21
Barium (Ba)-Dissolved			106.8		%		80-120	17-AUG-21
Beryllium (Be)-Dissolved			108.4		%		80-120	17-AUG-21
Bismuth (Bi)-Dissolved			99.9		%		80-120	17-AUG-21
Boron (B)-Dissolved			98.9		%		80-120	17-AUG-21
Cadmium (Cd)-Dissolved			102.9		%		80-120	17-AUG-21
Calcium (Ca)-Dissolved			103.1		%		80-120	17-AUG-21
Cesium (Cs)-Dissolved			103.4		%		80-120	17-AUG-21
Chromium (Cr)-Dissolved			104.6		%		80-120	17-AUG-21
Cobalt (Co)-Dissolved			102.4		%		80-120	17-AUG-21
Copper (Cu)-Dissolved			103.7		%		80-120	17-AUG-21
Iron (Fe)-Dissolved			97.7		%		80-120	17-AUG-21
Lead (Pb)-Dissolved			101.0		%		80-120	17-AUG-21
Lithium (Li)-Dissolved			109.2		%		80-120	17-AUG-21
Magnesium (Mg)-Dissolved			113.5		%		80-120	17-AUG-21
Manganese (Mn)-Dissolved			106.0		%		80-120	17-AUG-21
Molybdenum (Mo)-Dissolved			109.5		%		80-120	17-AUG-21
Nickel (Ni)-Dissolved			100.4		%		80-120	17-AUG-21
Phosphorus (P)-Dissolved			110.2		%		80-120	17-AUG-21
Potassium (K)-Dissolved			112.0		%		80-120	17-AUG-21
Rubidium (Rb)-Dissolved			105.4		%		80-120	17-AUG-21
Selenium (Se)-Dissolved			100.9		%		80-120	17-AUG-21
Silicon (Si)-Dissolved			110.7		%		80-120	17-AUG-21
Silver (Ag)-Dissolved			104.3		%		80-120	17-AUG-21
Sodium (Na)-Dissolved			107.4		%		80-120	17-AUG-21
Strontium (Sr)-Dissolved			110.0		%		80-120	17-AUG-21
Sulfur (S)-Dissolved			120.8	MES	%		80-120	17-AUG-21
Tellurium (Te)-Dissolved			103.7		%		80-120	17-AUG-21
Thallium (Tl)-Dissolved			97.5		%		80-120	17-AUG-21
Thorium (Th)-Dissolved			101.0		%		80-120	17-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5557141								
WG3597633-2 LCS								
Tin (Sn)-Dissolved			98.1		%		80-120	17-AUG-21
Titanium (Ti)-Dissolved			101.9		%		80-120	17-AUG-21
Tungsten (W)-Dissolved			102.6		%		80-120	17-AUG-21
Uranium (U)-Dissolved			97.3		%		80-120	17-AUG-21
Vanadium (V)-Dissolved			104.2		%		80-120	17-AUG-21
Zinc (Zn)-Dissolved			102.3		%		80-120	17-AUG-21
Zirconium (Zr)-Dissolved			100.4		%		80-120	17-AUG-21
WG3597631-1 MB								
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	17-AUG-21
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	17-AUG-21
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	17-AUG-21
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	17-AUG-21
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	17-AUG-21
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	17-AUG-21
Boron (B)-Dissolved			<0.010		mg/L		0.01	17-AUG-21
Cadmium (Cd)-Dissolved			<0.000005(		mg/L		0.000005	17-AUG-21
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	17-AUG-21
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	17-AUG-21
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	17-AUG-21
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	17-AUG-21
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	17-AUG-21
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	17-AUG-21
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	17-AUG-21
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	17-AUG-21
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	17-AUG-21
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	17-AUG-21
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	17-AUG-21
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	17-AUG-21
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	17-AUG-21
Potassium (K)-Dissolved			<0.050		mg/L		0.05	17-AUG-21
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	17-AUG-21
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	17-AUG-21
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	17-AUG-21
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	17-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5557141								
WG3597631-1 MB								
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	17-AUG-21
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	17-AUG-21
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	17-AUG-21
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	17-AUG-21
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	17-AUG-21
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	17-AUG-21
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	17-AUG-21
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	17-AUG-21
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	17-AUG-21
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	17-AUG-21
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	17-AUG-21
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	17-AUG-21
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	17-AUG-21
WG3597633-1 MB								
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	17-AUG-21
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	17-AUG-21
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	17-AUG-21
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	17-AUG-21
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	17-AUG-21
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	17-AUG-21
Boron (B)-Dissolved			<0.010		mg/L		0.01	17-AUG-21
Cadmium (Cd)-Dissolved			<0.000005C		mg/L		0.000005	17-AUG-21
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	17-AUG-21
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	17-AUG-21
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	17-AUG-21
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	17-AUG-21
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	17-AUG-21
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	17-AUG-21
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	17-AUG-21
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	17-AUG-21
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	17-AUG-21
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	17-AUG-21
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	17-AUG-21
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	17-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5557141								
WG3597633-1 MB								
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	17-AUG-21
Potassium (K)-Dissolved			<0.050		mg/L		0.05	17-AUG-21
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	17-AUG-21
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	17-AUG-21
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	17-AUG-21
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	17-AUG-21
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	17-AUG-21
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	17-AUG-21
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	17-AUG-21
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	17-AUG-21
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	17-AUG-21
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	17-AUG-21
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	17-AUG-21
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	17-AUG-21
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	17-AUG-21
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	17-AUG-21
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	17-AUG-21
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	17-AUG-21
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	17-AUG-21
WG3597631-5 MS		**WG3597631-3**						
Aluminum (Al)-Dissolved			94.7		%		70-130	17-AUG-21
Antimony (Sb)-Dissolved			95.0		%		70-130	17-AUG-21
Arsenic (As)-Dissolved			96.8		%		70-130	17-AUG-21
Barium (Ba)-Dissolved			96.9		%		70-130	17-AUG-21
Beryllium (Be)-Dissolved			94.4		%		70-130	17-AUG-21
Bismuth (Bi)-Dissolved			87.7		%		70-130	17-AUG-21
Boron (B)-Dissolved			86.7		%		70-130	17-AUG-21
Cadmium (Cd)-Dissolved			98.3		%		70-130	17-AUG-21
Calcium (Ca)-Dissolved			94.5		%		70-130	17-AUG-21
Cesium (Cs)-Dissolved			93.5		%		70-130	17-AUG-21
Chromium (Cr)-Dissolved			96.7		%		70-130	17-AUG-21
Cobalt (Co)-Dissolved			96.3		%		70-130	17-AUG-21
Copper (Cu)-Dissolved			95.7		%		70-130	17-AUG-21
Iron (Fe)-Dissolved			94.9		%		70-130	17-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5557141								
WG3597631-5 MS		**WG3597631-3**						
Lead (Pb)-Dissolved			95.3		%		70-130	17-AUG-21
Lithium (Li)-Dissolved			96.6		%		70-130	17-AUG-21
Magnesium (Mg)-Dissolved			97.3		%		70-130	17-AUG-21
Manganese (Mn)-Dissolved			96.1		%		70-130	17-AUG-21
Molybdenum (Mo)-Dissolved			96.1		%		70-130	17-AUG-21
Nickel (Ni)-Dissolved			96.9		%		70-130	17-AUG-21
Phosphorus (P)-Dissolved			95.9		%		70-130	17-AUG-21
Potassium (K)-Dissolved			99.0		%		70-130	17-AUG-21
Rubidium (Rb)-Dissolved			96.4		%		70-130	17-AUG-21
Selenium (Se)-Dissolved			97.3		%		70-130	17-AUG-21
Silicon (Si)-Dissolved			95.0		%		70-130	17-AUG-21
Silver (Ag)-Dissolved			93.7		%		70-130	17-AUG-21
Sodium (Na)-Dissolved			98.4		%		70-130	17-AUG-21
Strontium (Sr)-Dissolved			96.6		%		70-130	17-AUG-21
Sulfur (S)-Dissolved			96.7		%		70-130	17-AUG-21
Tellurium (Te)-Dissolved			92.0		%		70-130	17-AUG-21
Thallium (Tl)-Dissolved			94.9		%		70-130	17-AUG-21
Thorium (Th)-Dissolved			95.8		%		70-130	17-AUG-21
Tin (Sn)-Dissolved			89.5		%		70-130	17-AUG-21
Titanium (Ti)-Dissolved			95.6		%		70-130	17-AUG-21
Tungsten (W)-Dissolved			97.4		%		70-130	17-AUG-21
Uranium (U)-Dissolved			92.3		%		70-130	17-AUG-21
Vanadium (V)-Dissolved			95.7		%		70-130	17-AUG-21
Zinc (Zn)-Dissolved			97.6		%		70-130	17-AUG-21
Zirconium (Zr)-Dissolved			96.6		%		70-130	17-AUG-21
WG3597633-5 MS		**WG3597633-3**						
Aluminum (Al)-Dissolved			98.8		%		70-130	17-AUG-21
Antimony (Sb)-Dissolved			98.6		%		70-130	17-AUG-21
Arsenic (As)-Dissolved			98.9		%		70-130	17-AUG-21
Barium (Ba)-Dissolved			N/A	MS-B	%		-	17-AUG-21
Beryllium (Be)-Dissolved			100.6		%		70-130	17-AUG-21
Bismuth (Bi)-Dissolved			75.3		%		70-130	17-AUG-21
Boron (B)-Dissolved			86.6		%		70-130	17-AUG-21
Cadmium (Cd)-Dissolved			97.7		%		70-130	17-AUG-21

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5557141								
WG3597633-5 MS		**WG3597633-3**						
Calcium (Ca)-Dissolved			N/A	MS-B	%		-	17-AUG-21
Cesium (Cs)-Dissolved			96.9		%		70-130	17-AUG-21
Chromium (Cr)-Dissolved			94.8		%		70-130	17-AUG-21
Cobalt (Co)-Dissolved			90.5		%		70-130	17-AUG-21
Copper (Cu)-Dissolved			89.7		%		70-130	17-AUG-21
Iron (Fe)-Dissolved			94.4		%		70-130	17-AUG-21
Lead (Pb)-Dissolved			86.9		%		70-130	17-AUG-21
Lithium (Li)-Dissolved			106.7		%		70-130	17-AUG-21
Magnesium (Mg)-Dissolved			N/A	MS-B	%		-	17-AUG-21
Manganese (Mn)-Dissolved			92.9		%		70-130	17-AUG-21
Molybdenum (Mo)-Dissolved			103.9		%		70-130	17-AUG-21
Nickel (Ni)-Dissolved			88.5		%		70-130	17-AUG-21
Phosphorus (P)-Dissolved			104.7		%		70-130	17-AUG-21
Potassium (K)-Dissolved			N/A	MS-B	%		-	17-AUG-21
Rubidium (Rb)-Dissolved			95.6		%		70-130	17-AUG-21
Selenium (Se)-Dissolved			99.0		%		70-130	17-AUG-21
Silicon (Si)-Dissolved			107.0		%		70-130	17-AUG-21
Silver (Ag)-Dissolved			97.0		%		70-130	17-AUG-21
Sodium (Na)-Dissolved			N/A	MS-B	%		-	17-AUG-21
Strontium (Sr)-Dissolved			N/A	MS-B	%		-	17-AUG-21
Sulfur (S)-Dissolved			N/A	MS-B	%		-	17-AUG-21
Tellurium (Te)-Dissolved			92.7		%		70-130	17-AUG-21
Thallium (Tl)-Dissolved			86.5		%		70-130	17-AUG-21
Thorium (Th)-Dissolved			95.8		%		70-130	17-AUG-21
Tin (Sn)-Dissolved			93.0		%		70-130	17-AUG-21
Titanium (Ti)-Dissolved			99.5		%		70-130	17-AUG-21
Tungsten (W)-Dissolved			97.2		%		70-130	17-AUG-21
Uranium (U)-Dissolved			87.9		%		70-130	17-AUG-21
Vanadium (V)-Dissolved			97.8		%		70-130	17-AUG-21
Zinc (Zn)-Dissolved			91.7		%		70-130	17-AUG-21
Zirconium (Zr)-Dissolved			105.5		%		70-130	17-AUG-21
MET-T-CCMS-WT	**Water**							

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5549548								
WG3597034-4 DUP		**WG3597034-3**						
Aluminum (Al)-Total		0.0170	0.0172		mg/L	1.0	20	13-AUG-21
Antimony (Sb)-Total		0.00012	0.00012		mg/L	1.0	20	13-AUG-21
Arsenic (As)-Total		0.00014	0.00014		mg/L	1.1	20	13-AUG-21
Barium (Ba)-Total		0.0410	0.0418		mg/L	1.9	20	13-AUG-21
Beryllium (Be)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	13-AUG-21
Bismuth (Bi)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	13-AUG-21
Boron (B)-Total		0.266	0.271		mg/L	1.9	20	13-AUG-21
Cadmium (Cd)-Total		<0.0000050	<0.000005(	RPD-NA	mg/L	N/A	20	13-AUG-21
Calcium (Ca)-Total		159	162		mg/L	1.5	20	13-AUG-21
Chromium (Cr)-Total		<0.00050	0.00051	RPD-NA	mg/L	N/A	20	13-AUG-21
Cesium (Cs)-Total		0.000139	0.000135		mg/L	2.9	20	13-AUG-21
Cobalt (Co)-Total		0.00044	0.00044		mg/L	0.0	20	13-AUG-21
Copper (Cu)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	13-AUG-21
Iron (Fe)-Total		0.043	0.044		mg/L	2.0	20	13-AUG-21
Lead (Pb)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	13-AUG-21
Lithium (Li)-Total		0.0333	0.0327		mg/L	1.9	20	13-AUG-21
Magnesium (Mg)-Total		43.9	44.3		mg/L	0.9	20	13-AUG-21
Manganese (Mn)-Total		0.00738	0.00741		mg/L	0.3	20	13-AUG-21
Molybdenum (Mo)-Total		0.00389	0.00394		mg/L	1.2	20	13-AUG-21
Nickel (Ni)-Total		0.00362	0.00377		mg/L	4.0	20	13-AUG-21
Phosphorus (P)-Total		<0.050	<0.050	RPD-NA	mg/L	N/A	20	13-AUG-21
Potassium (K)-Total		16.4	16.5		mg/L	0.7	20	13-AUG-21
Rubidium (Rb)-Total		0.0168	0.0166		mg/L	1.1	20	13-AUG-21
Selenium (Se)-Total		0.000070	0.000080		mg/L	13	20	13-AUG-21
Silicon (Si)-Total		3.41	3.40		mg/L	0.4	20	13-AUG-21
Silver (Ag)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	13-AUG-21
Sodium (Na)-Total		72.0	72.6		mg/L	0.9	20	13-AUG-21
Strontium (Sr)-Total		6.41	6.44		mg/L	0.6	20	13-AUG-21
Sulfur (S)-Total		156	155		mg/L	1.1	20	13-AUG-21
Thallium (Tl)-Total		0.000102	0.000099		mg/L	2.2	20	13-AUG-21
Tellurium (Te)-Total		0.00087	0.00105		mg/L	18	20	13-AUG-21
Thorium (Th)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	13-AUG-21
Tin (Sn)-Total		<0.00010	<0.00010		mg/L			13-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5549548								
WG3597034-4 DUP		**WG3597034-3**						
Tin (Sn)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	13-AUG-21
Titanium (Ti)-Total		0.00041	0.00050	J	mg/L	0.00009	0.0006	13-AUG-21
Tungsten (W)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	13-AUG-21
Uranium (U)-Total		0.000911	0.000904		mg/L	0.7	20	13-AUG-21
Vanadium (V)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	13-AUG-21
Zinc (Zn)-Total		<0.0030	<0.0030	RPD-NA	mg/L	N/A	20	13-AUG-21
Zirconium (Zr)-Total		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	13-AUG-21
WG3597034-2 LCS								
Aluminum (Al)-Total			103.3		%		80-120	13-AUG-21
Antimony (Sb)-Total			100.1		%		80-120	13-AUG-21
Arsenic (As)-Total			99.7		%		80-120	13-AUG-21
Barium (Ba)-Total			100.8		%		80-120	13-AUG-21
Beryllium (Be)-Total			106.7		%		80-120	13-AUG-21
Bismuth (Bi)-Total			99.0		%		80-120	13-AUG-21
Boron (B)-Total			105.1		%		80-120	13-AUG-21
Cadmium (Cd)-Total			98.7		%		80-120	13-AUG-21
Calcium (Ca)-Total			102.0		%		80-120	13-AUG-21
Chromium (Cr)-Total			99.6		%		80-120	13-AUG-21
Cesium (Cs)-Total			98.8		%		80-120	13-AUG-21
Cobalt (Co)-Total			99.5		%		80-120	13-AUG-21
Copper (Cu)-Total			100.1		%		80-120	13-AUG-21
Iron (Fe)-Total			101.1		%		80-120	13-AUG-21
Lead (Pb)-Total			99.9		%		80-120	13-AUG-21
Lithium (Li)-Total			111.4		%		80-120	13-AUG-21
Magnesium (Mg)-Total			102.9		%		80-120	13-AUG-21
Manganese (Mn)-Total			99.2		%		80-120	13-AUG-21
Molybdenum (Mo)-Total			99.1		%		80-120	13-AUG-21
Nickel (Ni)-Total			99.6		%		80-120	13-AUG-21
Phosphorus (P)-Total			109.1		%		70-130	13-AUG-21
Potassium (K)-Total			102.0		%		80-120	13-AUG-21
Rubidium (Rb)-Total			98.6		%		80-120	13-AUG-21
Selenium (Se)-Total			98.1		%		80-120	13-AUG-21
Silicon (Si)-Total			104.8		%		60-140	13-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5549548								
WG3597034-2 LCS								
Silver (Ag)-Total			102.2		%		80-120	13-AUG-21
Sodium (Na)-Total			103.1		%		80-120	13-AUG-21
Strontium (Sr)-Total			101.3		%		80-120	13-AUG-21
Sulfur (S)-Total			106.0		%		80-120	13-AUG-21
Thallium (Tl)-Total			99.3		%		80-120	13-AUG-21
Tellurium (Te)-Total			98.5		%		80-120	13-AUG-21
Thorium (Th)-Total			97.5		%		80-120	13-AUG-21
Tin (Sn)-Total			99.3		%		80-120	13-AUG-21
Titanium (Ti)-Total			100.2		%		80-120	13-AUG-21
Tungsten (W)-Total			101.0		%		80-120	13-AUG-21
Uranium (U)-Total			105.2		%		80-120	13-AUG-21
Vanadium (V)-Total			100.8		%		80-120	13-AUG-21
Zinc (Zn)-Total			103.1		%		80-120	13-AUG-21
Zirconium (Zr)-Total			96.6		%		80-120	13-AUG-21
WG3597034-1 MB								
Aluminum (Al)-Total			<0.0050		mg/L		0.005	13-AUG-21
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	13-AUG-21
Arsenic (As)-Total			<0.00010		mg/L		0.0001	13-AUG-21
Barium (Ba)-Total			<0.00010		mg/L		0.0001	13-AUG-21
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	13-AUG-21
Bismuth (Bi)-Total			<0.000050		mg/L		0.00005	13-AUG-21
Boron (B)-Total			<0.010		mg/L		0.01	13-AUG-21
Cadmium (Cd)-Total			<0.000005(		mg/L		0.000005	13-AUG-21
Calcium (Ca)-Total			<0.050		mg/L		0.05	13-AUG-21
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	13-AUG-21
Cesium (Cs)-Total			<0.000010		mg/L		0.00001	13-AUG-21
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	13-AUG-21
Copper (Cu)-Total			<0.00050		mg/L		0.0005	13-AUG-21
Iron (Fe)-Total			<0.010		mg/L		0.01	13-AUG-21
Lead (Pb)-Total			<0.000050		mg/L		0.00005	13-AUG-21
Lithium (Li)-Total			<0.0010		mg/L		0.001	13-AUG-21
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	13-AUG-21
Manganese (Mn)-Total			<0.00050		mg/L		0.0005	13-AUG-21
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	13-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5549548								
WG3597034-1 MB								
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	13-AUG-21
Phosphorus (P)-Total			<0.050		mg/L		0.05	13-AUG-21
Potassium (K)-Total			<0.050		mg/L		0.05	13-AUG-21
Rubidium (Rb)-Total			<0.00020		mg/L		0.0002	13-AUG-21
Selenium (Se)-Total			<0.000050		mg/L		0.00005	13-AUG-21
Silicon (Si)-Total			<0.10		mg/L		0.1	13-AUG-21
Silver (Ag)-Total			<0.000050		mg/L		0.00005	13-AUG-21
Sodium (Na)-Total			<0.050		mg/L		0.05	13-AUG-21
Strontium (Sr)-Total			<0.0010		mg/L		0.001	13-AUG-21
Sulfur (S)-Total			<0.50		mg/L		0.5	13-AUG-21
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	13-AUG-21
Tellurium (Te)-Total			<0.00020		mg/L		0.0002	13-AUG-21
Thorium (Th)-Total			<0.00010		mg/L		0.0001	13-AUG-21
Tin (Sn)-Total			<0.00010		mg/L		0.0001	13-AUG-21
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	13-AUG-21
Tungsten (W)-Total			<0.00010		mg/L		0.0001	13-AUG-21
Uranium (U)-Total			<0.000010		mg/L		0.00001	13-AUG-21
Vanadium (V)-Total			<0.00050		mg/L		0.0005	13-AUG-21
Zinc (Zn)-Total			<0.0030		mg/L		0.003	13-AUG-21
Zirconium (Zr)-Total			<0.00020		mg/L		0.0002	13-AUG-21
WG3597034-5 MS		**WG3597034-6**						
Aluminum (Al)-Total			98.6		%		70-130	13-AUG-21
Antimony (Sb)-Total			97.4		%		70-130	13-AUG-21
Arsenic (As)-Total			100.9		%		70-130	13-AUG-21
Barium (Ba)-Total			N/A	MS-B	%		-	13-AUG-21
Beryllium (Be)-Total			98.8		%		70-130	13-AUG-21
Bismuth (Bi)-Total			86.4		%		70-130	13-AUG-21
Boron (B)-Total			N/A	MS-B	%		-	13-AUG-21
Cadmium (Cd)-Total			91.4		%		70-130	13-AUG-21
Calcium (Ca)-Total			N/A	MS-B	%		-	13-AUG-21
Chromium (Cr)-Total			97.7		%		70-130	13-AUG-21
Cesium (Cs)-Total			98.0		%		70-130	13-AUG-21
Cobalt (Co)-Total			97.3		%		70-130	13-AUG-21
Copper (Cu)-Total			91.9		%		70-130	13-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5549548								
WG3597034-5 MS		**WG3597034-6**						
Iron (Fe)-Total			95.8		%		70-130	13-AUG-21
Lead (Pb)-Total			88.2		%		70-130	13-AUG-21
Lithium (Li)-Total			N/A	MS-B	%		-	13-AUG-21
Magnesium (Mg)-Total			N/A	MS-B	%		-	13-AUG-21
Manganese (Mn)-Total			90.8		%		70-130	13-AUG-21
Molybdenum (Mo)-Total			99.6		%		70-130	13-AUG-21
Nickel (Ni)-Total			91.4		%		70-130	13-AUG-21
Phosphorus (P)-Total			117.5		%		70-130	13-AUG-21
Potassium (K)-Total			N/A	MS-B	%		-	13-AUG-21
Rubidium (Rb)-Total			N/A	MS-B	%		-	13-AUG-21
Selenium (Se)-Total			100.1		%		70-130	13-AUG-21
Silicon (Si)-Total			N/A	MS-B	%		-	13-AUG-21
Silver (Ag)-Total			93.3		%		70-130	13-AUG-21
Sodium (Na)-Total			N/A	MS-B	%		-	13-AUG-21
Strontium (Sr)-Total			N/A	MS-B	%		-	13-AUG-21
Sulfur (S)-Total			N/A	MS-B	%		-	13-AUG-21
Thallium (Tl)-Total			90.4		%		70-130	13-AUG-21
Tellurium (Te)-Total			86.7		%		70-130	13-AUG-21
Thorium (Th)-Total			93.5		%		70-130	13-AUG-21
Tin (Sn)-Total			96.1		%		70-130	13-AUG-21
Titanium (Ti)-Total			102.3		%		70-130	13-AUG-21
Tungsten (W)-Total			96.6		%		70-130	13-AUG-21
Uranium (U)-Total			N/A	MS-B	%		-	13-AUG-21
Vanadium (V)-Total			103.0		%		70-130	13-AUG-21
Zinc (Zn)-Total			86.6		%		70-130	13-AUG-21
Zirconium (Zr)-Total			99.9		%		70-130	13-AUG-21
NH3-COL-WP	**Water**							
Batch R5564662								
WG3602386-3 DUP		**L2625251-1**						
Ammonia, Total (as N)		<0.010	<0.010	RPD-NA	mg/L	N/A	20	20-AUG-21
WG3602386-2 LCS								
Ammonia, Total (as N)			96.0		%		85-115	20-AUG-21
WG3602386-1 MB								
Ammonia, Total (as N)			<0.010		mg/L		0.01	20-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NH3-COL-WP	**Water**							
Batch R5564662								
WG3602386-4 MS		**L2625251-1**						
Ammonia, Total (as N)			86.6		%		75-125	20-AUG-21
NH3-F-WT	**Water**							
Batch R5551398								
WG3596928-3 DUP		**L2626380-2**						
Ammonia, Total (as N)		0.014	0.014		mg/L	0.7	20	16-AUG-21
WG3597020-3 DUP		**WG3597020-5**						
Ammonia, Total (as N)		<0.010	<0.010	RPD-NA	mg/L	N/A	20	16-AUG-21
WG3597145-3 DUP		**L2626499-6**						
Ammonia, Total (as N)		0.034	0.034		mg/L	0.9	20	16-AUG-21
WG3596928-2 LCS								
Ammonia, Total (as N)			108.7		%		85-115	16-AUG-21
WG3597020-2 LCS								
Ammonia, Total (as N)			112.3		%		85-115	16-AUG-21
WG3597145-2 LCS								
Ammonia, Total (as N)			114.2		%		85-115	16-AUG-21
WG3596928-1 MB								
Ammonia, Total (as N)			<0.010		mg/L		0.01	16-AUG-21
WG3597020-1 MB								
Ammonia, Total (as N)			<0.010		mg/L		0.01	16-AUG-21
WG3597145-1 MB								
Ammonia, Total (as N)			<0.010		mg/L		0.01	16-AUG-21
WG3596928-4 MS		**L2626380-2**						
Ammonia, Total (as N)			107.0		%		75-125	16-AUG-21
WG3597020-4 MS		**WG3597020-5**						
Ammonia, Total (as N)			104.9		%		75-125	16-AUG-21
WG3597145-4 MS		**L2626499-6**						
Ammonia, Total (as N)			107.9		%		75-125	16-AUG-21
NO2-IC-WT	**Water**							
Batch R5553200								
WG3598094-4 DUP		**WG3598094-3**						
Nitrite (as N)		<0.010	<0.010	RPD-NA	mg/L	N/A	20	16-AUG-21
WG3598094-2 LCS								
Nitrite (as N)			101.7		%		90-110	16-AUG-21
WG3598094-1 MB								
Nitrite (as N)			<0.010		mg/L		0.01	16-AUG-21
WG3598094-5 MS		**WG3598094-3**						

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NO2-IC-WT	**Water**							
Batch R5553200								
WG3598094-5 MS		**WG3598094-3**						
Nitrite (as N)			102.8		%		75-125	16-AUG-21
NO3-IC-WT	**Water**							
Batch R5553200								
WG3598094-4 DUP		**WG3598094-3**						
Nitrate (as N)		<0.020	<0.020	RPD-NA	mg/L	N/A	20	16-AUG-21
WG3598094-2 LCS								
Nitrate (as N)			100.9		%		90-110	16-AUG-21
WG3598094-1 MB								
Nitrate (as N)			<0.020		mg/L		0.02	16-AUG-21
WG3598094-5 MS		**WG3598094-3**						
Nitrate (as N)			101.6		%		75-125	16-AUG-21
P-T-L-COL-WP	**Water**							
Batch R5557099								
WG3599354-3 DUP		**L2626055-1**						
Phosphorus (P)-Total		0.0018	0.0013	J	mg/L	0.0005	0.002	18-AUG-21
WG3599354-2 LCS								
Phosphorus (P)-Total			89.3		%		80-120	18-AUG-21
WG3599354-1 MB								
Phosphorus (P)-Total			<0.0010		mg/L		0.001	18-AUG-21
WG3599354-4 MS		**L2626055-2**						
Phosphorus (P)-Total			93.5		%		70-130	18-AUG-21
PH-WT	**Water**							
Batch R5550114								
WG3596878-4 DUP		**WG3596878-3**						
pH		8.33	8.33	J	pH units	0.00	0.2	13-AUG-21
WG3596878-2 LCS								
pH			6.99		pH units		6.9-7.1	13-AUG-21
Batch R5551418								
WG3597879-3 DUP		**WG3597879-2**						
pH		10.70	10.69	J	pH units	0.01	0.2	16-AUG-21
WG3597879-1 LCS								
pH			6.93		pH units		6.9-7.1	16-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH-WT	**Water**							
Batch R5554197								
WG3598471-4 DUP		**WG3598471-3**						
pH		7.47	7.49	J	pH units	0.02	0.2	17-AUG-21
WG3598471-2 LCS								
pH			7.00		pH units		6.9-7.1	17-AUG-21
SO4-IC-N-WT	**Water**							
Batch R5553200								
WG3598094-4 DUP		**WG3598094-3**						
Sulfate (SO4)		<0.30	<0.30	RPD-NA	mg/L	N/A	20	16-AUG-21
WG3598094-2 LCS								
Sulfate (SO4)			102.4		%		90-110	16-AUG-21
WG3598094-1 MB								
Sulfate (SO4)			<0.30		mg/L		0.3	16-AUG-21
WG3598094-5 MS		**WG3598094-3**						
Sulfate (SO4)			103.9		%		75-125	16-AUG-21
SOLIDS-TDS-WT	**Water**							
Batch R5550236								
WG3596885-3 DUP		**L2626088-2**						
Total Dissolved Solids		670	673		mg/L	0.4	20	13-AUG-21
WG3596885-2 LCS								
Total Dissolved Solids			99.6		%		85-115	13-AUG-21
WG3596885-1 MB								
Total Dissolved Solids			<10		mg/L		10	13-AUG-21
Batch R5553896								
WG3597355-3 DUP		**L2626399-4**						
Total Dissolved Solids		183	185		mg/L	1.1	20	17-AUG-21
WG3597355-2 LCS								
Total Dissolved Solids			87.2		%		85-115	17-AUG-21
WG3597355-1 MB								
Total Dissolved Solids			<10		mg/L		10	17-AUG-21
SOLIDS-TSS-WT	**Water**							
Batch R5550225								
WG3596883-3 DUP		**L2626088-2**						
Total Suspended Solids		<3.0	<3.0	RPD-NA	mg/L	N/A	20	14-AUG-21
WG3596883-2 LCS								
Total Suspended Solids			98.7		%		85-115	14-AUG-21
WG3596883-1 MB								
Total Suspended Solids			<3.0		mg/L		3	14-AUG-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SOLIDS-TSS-WT	**Water**							
Batch R5553917								
WG3597353-3 DUP		**L2626399-3**						
Total Suspended Solids		<3.0	<3.0	RPD-NA	mg/L	N/A	20	15-AUG-21
WG3597353-2 LCS								
Total Suspended Solids			96.2		%		85-115	15-AUG-21
WG3597353-1 MB								
Total Suspended Solids			<3.0		mg/L		3	15-AUG-21

Quality Control Report

Workorder: L2626399 Report Date: 27-SEP-21

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Legend:

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

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Quality Control Report

Workorder: L2626399 Report Date: 27-SEP-21

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
pH							
	1	11-AUG-21 10:30	17-AUG-21 00:00	4	6	days	EHT
	2	11-AUG-21 13:00	17-AUG-21 00:00	4	5	days	EHT
	3	11-AUG-21 15:45	17-AUG-21 00:00	4	5	days	EHT
	4	11-AUG-21 17:30	17-AUG-21 00:00	4	5	days	EHT
	5	11-AUG-21 16:45	17-AUG-21 00:00	4	5	days	EHT
	6	10-AUG-21 15:30	17-AUG-21 00:00	4	6	days	EHT
	7	10-AUG-21 16:30	17-AUG-21 00:00	4	6	days	EHT
	8	10-AUG-21 10:00	17-AUG-21 00:00	4	7	days	EHT
	10	11-AUG-21	17-AUG-21 00:00	4	6	days	EHT
	11	11-AUG-21	16-AUG-21 00:00	4	5	days	EHT
	12	11-AUG-21	17-AUG-21 00:00	4	6	days	EHT

Legend & Qualifier Definitions:

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

Notes*:
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2626399 were received on 13-AUG-21 09:00.

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

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

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

Thursday, September 16, 2021

Gayle Braun
ALS Environmental
60 Northland Rd, Unit 1
Waterloo Canada, ON N2V 2B8

Re: ALS Workorder: 2108319
Project Name:
Project Number: L2626399

Dear Braun:

Four water samples were received from ALS Environmental, on 8/16/2021. The samples were scheduled for the following analysis:

Radium-226

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,
<original signed by>

For

ALS Environmental
Katie M. OBrien
Project Manager

Accreditations: ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
California (CA)	2926
Colorado (CO)	CO01099
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
PJ-LA (DoD ELAP/ISO 170250)	95377
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO010992018-1
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	TN02976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280

40 CFR Part 136: All analyses for Clean Water Act samples are analyzed using the 40 CFR Part 136 specified method and include all the QC requirements.

2108319

Radium-226:
The samples were prepared and analyzed according to the current revision of SOP 783.

All remaining acceptance criteria were met.

ALS -- Fort Collins

Sample Number(s) Cross-Reference Table

OrderNum: 2108319
Client Name: ALS Environmental
Client Project Name:
Client Project Number: L2626399
Client PO Number: L2626399

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
L2626399-6	2108319-1		WATER	10-Aug-21	
L2626399-9	2108319-2		WATER	09-Aug-21	
L2626399-11	2108319-3		WATER	11-Aug-21	
L2626399-12	2108319-4		WATER	11-Aug-21	

ALS Environmental

L2626399

MISSISSAUGA

Subcontract Request Form

Subcontract To: 210839

ALS ENVIRONMENTAL - FORT COLLINS, COLORADO, USA
225 COMMERCE DRIVE
FORT COLLINS,CO 80524

NOTES: Please reference on final report and invoice: PO# *L2626399*
ALS requires QC data to be provided with your final results.

Please see enclosed 4 sample(s) in 4 Container(s)

	SAMPLE NUMBER	ANALYTICAL REQUIRED	DATE SAMPLED / DUE DATE	Priority Flag
1	**L2626399-6 WBR-S-01**	Ra226 by Alpha Spec, MDC=0.01 Bq/L (RA226-ALPHASPEC-FC 1)	**8/10/2021** 9/7/2021	
2	**L2626399-9 WBR-S-04**	Ra226 by Alpha Spec, MDC=0.01 Bq/L (RA226-ALPHASPEC-FC 1)	**8/9/2021** 9/7/2021	
3	**L2626399-11 CNC-DUP-01**	Ra226 by Alpha Spec, MDC=0.01 Bq/L (RA226-ALPHASPEC-FC 1)	**8/11/2021** 9/7/2021	
4	**L2626399-12 TRIP BLANK**	Ra226 by Alpha Spec, MDC=0.01 Bq/L (RA226-ALPHASPEC-FC 1)	**8/11/2021** 8/17/2021	

Subcontract Info Contact: Amanda Fazekas (905) 507-6910
Analysis and reporting info contact: Gayle Braun
5730 COOPERS AVENUE, UNIT #26
MISSISSAUGA,ON L4Z 2E9
Phone: (905) 507-6910 Email: gayle.braun@alsglobal.com

Please email confirmation of receipt to: **gayle.braun@alsglobal.com**

Shipped By: _____ Date Shipped: _____
Received By: <original signed by> Date Received: 8/16/2021 1509
Verified By: _____ Date Verified: _____
Temperature: _____
Sample Integrity Issues: _____

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: ALS CANADA Workorder No: 2108319

Project Manager: KMB Initials: AXK Date: 08/17/2021

		N/A	YES	NO
1.	Are airbills / shipping documents present and/or removable?		X	
	Tracking number: 3172022991			
2.	Are custody seals on **shipping** containers intact?	X		
3.	Are custody seals on **sample** containers intact?	X		
4.	Is there a COC (chain-of-custody) present?		X	
5.	Is the COC in agreement with samples received? (IDs, dates, times, # of samples, # of containers, matrix, requested analyses, etc.)		X	
6.	Are short-hold samples present?			X
7.	Are all samples within holding times for the requested analyses?		X	
8.	Were all sample containers received intact? (not broken or leaking)		X	
9.	Is there sufficient sample for the requested analyses?		X	
10.	Are samples in proper containers for requested analyses? (form 250, *Sample Handling Guidelines*)		X	
11.	Are all aqueous samples preserved correctly, if required? (excluding volatiles)		X	
12.	Are all samples requiring no headspace (VOC, GRO, RSK/MEE, radon) free of bubbles > 6 mm (1/4 inch) diameter? (i.e. size of green pea)	X		
13.	Were the samples shipped on ice?		X	
14.	Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #5	RAD ONLY		X

Cooler #:	1						
Temperature (°C):	23.4						
# of custody seals on cooler:	0						
External µR/hr reading:	11						
Background µR/hr reading:	13						

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? **YES** (If no, see Form 008.)

*** Please provide details here for NO responses to boxes above - for 2 thru 5 & 7 thru 12, notify PM & continue w/ login.**

Were unpreserved bottles pH checked? NA All client bottle ID's vs ALS lab ID's double-checked by: AK

If applicable, was the client contacted? **NA** Contact: _____ Date/Time: _____

Project Manager Signature / Date: _____<original signed by> 8/20/21

Form 201r30.xls
03/18/2021

*IR Gun #5, VWR SN 192272629

Client:	ALS Environmental	**Date:**	*16-Sep-21*
Project:	L2626399	**Work Order:**	2108319
Sample ID:	L2626399-6	**Lab ID:**	2108319-1
Legal Location:		**Matrix:**	WATER
Collection Date:	8/10/2021	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Radium-226 by Radon Emanation - Method 903.1		**SOP 783**			Prep Date: **8/20/2021**	PrepBy: **TRB**
Ra-226	-0.00039 (+/- 0.0021)	U	0.0047	BQ/l	NA	9/11/2021 15:42
Carr: BARIUM	*93.3*		*40-110*	*%REC*	DL = NA	9/11/2021 15:42

Client:	ALS Environmental	**Date:**	*16-Sep-21*
Project:	L2626399	**Work Order:**	2108319
Sample ID:	L2626399-9	**Lab ID:**	2108319-2
Legal Location:		**Matrix:**	WATER
Collection Date:	8/9/2021	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Radium-226 by Radon Emanation - Method 903.1		**SOP 783**			Prep Date: **8/20/2021**	PrepBy: **TRB**
Ra-226	-0.0011 (+/- 0.0025)	U	0.0055	BQ/l	NA	9/11/2021 15:42
Carr: BARIUM	*91.3*		*40-110*	*%REC*	DL = NA	9/11/2021 15:42

Client:	ALS Environmental	**Date:**	*16-Sep-21*
Project:	L2626399	**Work Order:**	2108319
Sample ID:	L2626399-11	**Lab ID:**	2108319-3
Legal Location:		**Matrix:**	WATER
Collection Date:	8/11/2021	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Radium-226 by Radon Emanation - Method 903.1		**SOP 783**			Prep Date: **8/20/2021**	PrepBy: **TRB**
Ra-226	-0.00033 (+/- 0.0018)	Y1,U	0.004	BQ/l	NA	9/11/2021 15:42
Carr: BARIUM	*102*	Y1	*40-110*	*%REC*	DL = NA	9/11/2021 15:42

Client:	ALS Environmental	**Date:**	*16-Sep-21*
Project:	L2626399	**Work Order:**	2108319
Sample ID:	L2626399-12	**Lab ID:**	2108319-4
Legal Location:		**Matrix:**	WATER
Collection Date:	8/11/2021	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Radium-226 by Radon Emanation - Method 903.1		**SOP 783**		Prep Date: **8/20/2021**		PrepBy: **TRB**
Ra-226	0.0012 (+/- 0.0026)	U	0.0048	BQ/l	NA	9/11/2021 15:42
Carr: BARIUM	*88.4*		*40-110*	*%REC*	DL = NA	9/11/2021 15:42

Client:	ALS Environmental	**Date:**	*16-Sep-21*
Project:	L2626399	**Work Order:**	2108319
Sample ID:	L2626399-12	**Lab ID:**	2108319-4
Legal Location:		**Matrix:**	WATER
Collection Date:	8/11/2021	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed

Explanation of Qualifiers

Radiochemistry:

- "Report Limit" is the MDC

U or ND - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.
# - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.
G - Sample density differs by more than 15% of LCS density.
D - DER is greater than Control Limit

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).

U or ND - Indicates that the compound was analyzed for but not detected.

E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.

M - Duplicate injection precision was not met.

N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.

Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.

* - Duplicate analysis (relative percent difference) not within control limits.

S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.

B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.

E - Analyte concentration exceeds the upper level of the calibration range.

J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).

A - A tentatively identified compound is a suspected aldol-condensation product.

X - The analyte was diluted below an accurate quantitation level.

* - The spike recovery is equal to or outside the control criteria used.

+ - The relative percent difference (RPD) equals or exceeds the control criteria.

G - A pattern resembling gasoline was detected in this sample.

D - A pattern resembling diesel was detected in this sample.

M - A pattern resembling motor oil was detected in this sample.

C - A pattern resembling crude oil was detected in this sample.

4 - A pattern resembling JP-4 was detected in this sample.

5 - A pattern resembling JP-5 was detected in this sample.

H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.

L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.

Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
- gasoline
- JP-8
- diesel
- mineral spirits
- motor oil
- Stoddard solvent
- bunker C

Batch ID: **RE210820-8-1** Instrument ID: **Alpha Scin** Method: **Radium-226 by Radon Emanation**

LCS Sample ID: **RE210820-8** Units: **BQ/l** Analysis Date: **9/11/2021 17:20**

Client ID: Run ID: **RE210820-8A** Prep Date: **8/20/2021** DF: **NA**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	DER Ref Value	DER	DER Limit	Qual
Ra-226	1.59 (+/- 0.396)	0.0151	1.731		91.8	67-120					P,Y1,M3
Carr: BARIUM	15300		15010		102	40-110					Y1

MB Sample ID: **RE210820-8** Units: **BQ/l** Analysis Date: **9/11/2021 16:46**

Client ID: Run ID: **RE210820-8A** Prep Date: **8/20/2021** DF: **NA**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	DER Ref Value	DER	DER Limit	Qual
Ra-226	-0.00036 (+/- 0.0018)	0.0039									Y1,U
Carr: BARIUM	15300		15010		102	40-110					Y1

The following samples were analyzed in this batch: 2108319-1 2108319-2 2108319-3 2108319-4

Chain of Custody

www.alsglobal.com

L2626399-COFC

COC Number: 20 -

Page of

Report To	Contact and company name below will appear on the final report
Company:	Wood E&IS
Contact:	Dale Klodnicki
Phone:	(647) 993-4243
	Company address below will appear on the final report
Street:	2020 Winston Park Dirve, Suite 600
City/Province:	Oakville, ON
Postal Code:	L6H 6X7
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Wood E&IS
Contact:	Dale Klodnicki

Project Information

ALS Account # / Quote #:	Q86725
Job #:	OMEMA2002
PO / AFE:	OMEMA2002.2021C.200.5120.573000
LSD:	

ALS Lab Work Order # (ALS use only): L2626399 AP

Reports / Recipients

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)

Merge QC/QCI Reports with COA ☑ YES ☐ NO ☐ N/A

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax	dale.klodnicki@woodplc.com
Email 2	trevor.baetz@woodplc.com
Email 3	michael.godard@woodplc.com

Invoice Recipients

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax	APInvoice.Canada@woodplc.com
Email 2	dale.klodnicki@woodplc.com

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Contact: Gayle Braun **Sampler:** TB / MG

Turnaround Time (TAT) Requested

☑ Routine [R] if received by 3pm M-F - no surcharges apply
☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.

Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests.

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

AFFIX ALS BARCODE LABEL HERE (ALS use only)

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	F/P: Dissolved Metals	Total Metals	Acidity, Alkalinity, Hardness, pH	Anions, Conductivity	Total & Free Cyanide	Cyanide WAD	Total Mercury by CVAFS (Ultra)	Total Mthylmercury by GCAFS	Ammonia, Total Phosphorus	Radium 226	Total Suspended Solids	Total Dissolved Solids	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	NDR-S-02	11-Aug-21	10:30	SW	8	R	R	R	R	R	R	R	R	R		R	R			
	NDR-TRIB-02	11-Aug-21	13:00	SW	8	R	R	R	R	R	R	R	R	R		R	R			
	NDR-TRIB-01	11-Aug-21	15:45	SW	8	R	R	R	R	R	R	R	R	R		R	R			
	NDR-GerLK	11-Aug-21	17:30	SW	8	R	R	R	R	R	R	R	R	R		R	R			
	NDR-MarLK	11-Aug-21	16:45	SW	8	R	R	R	R	R	R	R	R	R		R	R			
	WBR-S-01	10-Aug-21	15:30	SW	9	R	R	R	R	R	R	R	R	R	R	R	R			
	WBR-S-02	10-Aug-21	16:30	SW	8	R	R	R	R	R	R	R	R	R		R	R			
	WBR-S-03	10-Aug-21	10:00	SW	8	R	R	R	R	R	R	R	R	R		R	R			
	WBR-S-04	9-Aug-21	14:30	SW	9	R	R	R	R	R	R	R	R	R	R	R	R			
	CNC-DUP-02	-	-	SW	8	R	R	R	R	R	R	R	R	R		R	R			
	CNC-DUP-01	-	-	SW	9	R	R	R	R	R	R	R	R	R	R	R	R			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

[Combined] - Ontario PWQO+CCME-FAL-WATER

Federal CCME Canadian Environmental Quality Guidelines (JUL, 2012)

NDR-S-02 – Field Temp: 24.0 / pH: 6.62 | NDR-TRIB-02 – Field Temp: 13.93 / pH: 5.53
NDR-TRIB-01 – Field Temp: 21.65 / pH: 6.39 | NDR-Gerlk – Field Temp: 23.65 / pH: 7.90
NDR-MarLK – Field Temp: 23.68 / pH: 7.10 | WBR-S-01 – Field Temp: 20.9 / pH: 7.10

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☑ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				7.3			

SHIPMENT RELEASE (client use)

Released by: T. Baetz	Date: 12-Aug-21 // 15:15	Time:

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by: AP	Date: 13-AUG-21	Time: 9:00

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

AUG 2020 FRONT

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

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

Wood Environment & Infrastructure Solutions
ATTN: Dale Klodnicki
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7

Date Received: 26-OCT-21
Report Date: 18-NOV-21 17:41 (MT)
Version: FINAL

Client Phone: 905-568-2929

Certificate of Analysis

Lab Work Order #: L2655497

Project P.O. #: OMEMA2002.2021C.200.5120.573000
Job Reference: OMEMA2002
C of C Numbers:
Legal Site Desc:

<original signed by>

Gayle Braun
Senior Account Manager

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2655497-1 NDR-S-04 Sampled By: RD/MG on 21-OCT-21 @ 13:45 Matrix: WATER							
Physical Tests							
Conductivity	108		1.0	umhos/cm		28-OCT-21	R5632609
Hardness (as CaCO3)	54.5	HTC	0.50	mg/L		28-OCT-21	
pH	7.04		0.10	pH units		28-OCT-21	R5632609
Total Suspended Solids	<3.0		3.0	mg/L	27-OCT-21	28-OCT-21	R5631956
Total Dissolved Solids	122	DLDS	13	mg/L		27-OCT-21	R5631339
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	41.9		1.0	mg/L		28-OCT-21	R5632609
Ammonia, Total (as N)	0.045		0.010	mg/L		02-NOV-21	R5635207
Bromide (Br)	<0.10		0.10	mg/L		28-OCT-21	R5632492
Chloride (Cl)	6.09		0.50	mg/L		28-OCT-21	R5632492
Fluoride (F)	0.023		0.020	mg/L		28-OCT-21	R5632492
Nitrate (as N)	0.040		0.020	mg/L		28-OCT-21	R5632492
Nitrite (as N)	<0.010		0.010	mg/L		28-OCT-21	R5632492
Phosphorus (P)-Total	0.0265		0.0010	mg/L		10-NOV-21	R5639456
Sulfate (SO4)	0.89		0.30	mg/L		28-OCT-21	R5632492
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L		29-OCT-21	R5633500
Cyanide, Total	<0.0020		0.0020	mg/L		29-OCT-21	R5633500
Cyanide, Free	<0.0020		0.0020	mg/L		29-OCT-21	R5633500
Inorganic Parameters							
Acidity (as CaCO3)	5.3	HTD	2.0	mg/L		09-NOV-21	R5642018
Total Metals							
Aluminum (Al)-Total	0.243		0.0050	mg/L	26-OCT-21	27-OCT-21	R5629588
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Arsenic (As)-Total	0.00093		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Barium (Ba)-Total	0.00624		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Boron (B)-Total	<0.010		0.010	mg/L	26-OCT-21	27-OCT-21	R5629588
Cadmium (Cd)-Total	0.0000108		0.0000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Calcium (Ca)-Total	15.0		0.050	mg/L	26-OCT-21	27-OCT-21	R5629588
Cesium (Cs)-Total	0.000013		0.000010	mg/L	26-OCT-21	27-OCT-21	R5629588
Chromium (Cr)-Total	0.00071		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Cobalt (Co)-Total	0.00017		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Copper (Cu)-Total	0.00093		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Iron (Fe)-Total	0.644		0.010	mg/L	26-OCT-21	27-OCT-21	R5629588
Lead (Pb)-Total	0.000182		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Lithium (Li)-Total	<0.0010		0.0010	mg/L	26-OCT-21	27-OCT-21	R5629588
Magnesium (Mg)-Total	4.13		0.0050	mg/L	26-OCT-21	27-OCT-21	R5629588
Manganese (Mn)-Total	0.0497		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Mercury (Hg)-Total	0.00209		0.00050	ug/L		17-NOV-21	R5652727
Molybdenum (Mo)-Total	0.000055		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2655497-1 NDR-S-04 Sampled By: RD/MG on 21-OCT-21 @ 13:45 Matrix: WATER							
Total Metals							
Nickel (Ni)-Total	0.00077		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Phosphorus (P)-Total	<0.050		0.050	mg/L	26-OCT-21	27-OCT-21	R5629588
Potassium (K)-Total	0.356		0.050	mg/L	26-OCT-21	27-OCT-21	R5629588
Rubidium (Rb)-Total	0.00129		0.00020	mg/L	26-OCT-21	27-OCT-21	R5629588
Selenium (Se)-Total	0.000148		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Silicon (Si)-Total	2.61		0.10	mg/L	26-OCT-21	27-OCT-21	R5629588
Silver (Ag)-Total	<0.000050		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Sodium (Na)-Total	4.07		0.050	mg/L	26-OCT-21	27-OCT-21	R5629588
Strontium (Sr)-Total	0.0284		0.0010	mg/L	26-OCT-21	27-OCT-21	R5629588
Sulfur (S)-Total	<0.50		0.50	mg/L	26-OCT-21	27-OCT-21	R5629588
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	26-OCT-21	27-OCT-21	R5629588
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	26-OCT-21	27-OCT-21	R5629588
Thorium (Th)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Tin (Sn)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Titanium (Ti)-Total	0.00767		0.00030	mg/L	26-OCT-21	27-OCT-21	R5629588
Tungsten (W)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Uranium (U)-Total	0.000033		0.000010	mg/L	26-OCT-21	27-OCT-21	R5629588
Vanadium (V)-Total	0.00064		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Zinc (Zn)-Total	0.0035		0.0030	mg/L	26-OCT-21	27-OCT-21	R5629588
Zirconium (Zr)-Total	0.00028		0.00020	mg/L	26-OCT-21	27-OCT-21	R5629588
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					29-OCT-21	R5632675
Aluminum (Al)-Dissolved	0.149		0.0010	mg/L	29-OCT-21	29-OCT-21	R5633788
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Arsenic (As)-Dissolved	0.00097		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Barium (Ba)-Dissolved	0.00590		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Boron (B)-Dissolved	<0.010		0.010	mg/L	29-OCT-21	29-OCT-21	R5633788
Cadmium (Cd)-Dissolved	0.0000126		0.0000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Calcium (Ca)-Dissolved	15.5		0.050	mg/L	29-OCT-21	29-OCT-21	R5633788
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	29-OCT-21	29-OCT-21	R5633788
Chromium (Cr)-Dissolved	0.00051		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Cobalt (Co)-Dissolved	0.00011		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Copper (Cu)-Dissolved	0.00081		0.00020	mg/L	29-OCT-21	29-OCT-21	R5633788
Iron (Fe)-Dissolved	0.496		0.010	mg/L	29-OCT-21	29-OCT-21	R5633788
Lead (Pb)-Dissolved	0.000104		0.000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	29-OCT-21	29-OCT-21	R5633788
Magnesium (Mg)-Dissolved	4.30		0.0050	mg/L	29-OCT-21	29-OCT-21	R5633788
Manganese (Mn)-Dissolved	0.0419		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L	29-OCT-21	29-OCT-21	R5633788

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2655497-1 NDR-S-04 Sampled By: RD/MG on 21-OCT-21 @ 13:45 Matrix: WATER							
Dissolved Metals							
Nickel (Ni)-Dissolved	0.00062		0.00050	mg/L	29-OCT-21	29-OCT-21	R5633788
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	29-OCT-21	29-OCT-21	R5633788
Potassium (K)-Dissolved	0.350		0.050	mg/L	29-OCT-21	29-OCT-21	R5633788
Rubidium (Rb)-Dissolved	0.00116		0.00020	mg/L	29-OCT-21	29-OCT-21	R5633788
Selenium (Se)-Dissolved	0.000126		0.000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Silicon (Si)-Dissolved	2.47		0.050	mg/L	29-OCT-21	29-OCT-21	R5633788
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	29-OCT-21	29-OCT-21	R5633788
Sodium (Na)-Dissolved	4.34		0.050	mg/L	29-OCT-21	29-OCT-21	R5633788
Strontium (Sr)-Dissolved	0.0295		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Sulfur (S)-Dissolved	0.71		0.50	mg/L	29-OCT-21	29-OCT-21	R5633788
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	29-OCT-21	29-OCT-21	R5633788
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	29-OCT-21	29-OCT-21	R5633788
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Titanium (Ti)-Dissolved	0.00365		0.00030	mg/L	29-OCT-21	29-OCT-21	R5633788
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Uranium (U)-Dissolved	0.000026		0.000010	mg/L	29-OCT-21	29-OCT-21	R5633788
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	29-OCT-21	29-OCT-21	R5633788
Zinc (Zn)-Dissolved	0.0032		0.0010	mg/L	29-OCT-21	29-OCT-21	R5633788
Zirconium (Zr)-Dissolved	0.00034		0.00020	mg/L	29-OCT-21	29-OCT-21	R5633788
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000311		0.000020	ug/L	29-OCT-21	31-OCT-21	R5633769
L2655497-2 NDR-S-02 Sampled By: RD/MG on 22-OCT-21 @ 11:45 Matrix: WATER							
Physical Tests							
Conductivity	105		1.0	umhos/cm		27-OCT-21	R5630962
Hardness (as CaCO3)	53.4	HTC	0.50	mg/L		28-OCT-21	
pH	6.88	PEHT	0.10	pH units		27-OCT-21	R5630962
Total Suspended Solids	<3.0		3.0	mg/L	28-OCT-21	29-OCT-21	R5632741
Total Dissolved Solids	160	DLDS	13	mg/L		28-OCT-21	R5632703
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	39.1		1.0	mg/L		27-OCT-21	R5630962
Ammonia, Total (as N)	0.022		0.010	mg/L		02-NOV-21	R5635207
Bromide (Br)	<0.10		0.10	mg/L		28-OCT-21	R5632492
Chloride (Cl)	8.16		0.50	mg/L		28-OCT-21	R5632492
Fluoride (F)	0.021		0.020	mg/L		28-OCT-21	R5632492
Nitrate (as N)	0.049		0.020	mg/L		28-OCT-21	R5632492
Nitrite (as N)	<0.010		0.010	mg/L		28-OCT-21	R5632492
Phosphorus (P)-Total	0.0292		0.0010	mg/L		10-NOV-21	R5639456
Sulfate (SO4)	1.03		0.30	mg/L		28-OCT-21	R5632492
Cyanides							

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2655497-2 NDR-S-02 Sampled By: RD/MG on 22-OCT-21 @ 11:45 Matrix: WATER							
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L		29-OCT-21	R5633500
Cyanide, Total	0.0021		0.0020	mg/L		29-OCT-21	R5633500
Cyanide, Free	<0.0020		0.0020	mg/L		29-OCT-21	R5633500
Inorganic Parameters							
Acidity (as CaCO3)	6.0	HTD	2.0	mg/L		09-NOV-21	R5642018
Total Metals							
Aluminum (Al)-Total	0.243		0.0050	mg/L	26-OCT-21	27-OCT-21	R5629588
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Arsenic (As)-Total	0.00112		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Barium (Ba)-Total	0.00684		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Boron (B)-Total	<0.010		0.010	mg/L	26-OCT-21	27-OCT-21	R5629588
Cadmium (Cd)-Total	0.0000214		0.0000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Calcium (Ca)-Total	14.7		0.050	mg/L	26-OCT-21	27-OCT-21	R5629588
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	26-OCT-21	27-OCT-21	R5629588
Chromium (Cr)-Total	0.00076		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Cobalt (Co)-Total	0.00021		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Copper (Cu)-Total	0.00116		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Iron (Fe)-Total	0.732		0.010	mg/L	26-OCT-21	27-OCT-21	R5629588
Lead (Pb)-Total	0.000222		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Lithium (Li)-Total	<0.0010		0.0010	mg/L	26-OCT-21	27-OCT-21	R5629588
Magnesium (Mg)-Total	4.05		0.0050	mg/L	26-OCT-21	27-OCT-21	R5629588
Manganese (Mn)-Total	0.0569		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Mercury (Hg)-Total	0.00337		0.00050	ug/L		17-NOV-21	R5652727
Molybdenum (Mo)-Total	0.000057		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Nickel (Ni)-Total	0.00083		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Phosphorus (P)-Total	<0.050		0.050	mg/L	26-OCT-21	27-OCT-21	R5629588
Potassium (K)-Total	0.278		0.050	mg/L	26-OCT-21	27-OCT-21	R5629588
Rubidium (Rb)-Total	0.00102		0.00020	mg/L	26-OCT-21	27-OCT-21	R5629588
Selenium (Se)-Total	0.000182		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Silicon (Si)-Total	2.58		0.10	mg/L	26-OCT-21	27-OCT-21	R5629588
Silver (Ag)-Total	<0.000050		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Sodium (Na)-Total	4.89		0.050	mg/L	26-OCT-21	27-OCT-21	R5629588
Strontium (Sr)-Total	0.0280		0.0010	mg/L	26-OCT-21	27-OCT-21	R5629588
Sulfur (S)-Total	0.55		0.50	mg/L	26-OCT-21	27-OCT-21	R5629588
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	26-OCT-21	27-OCT-21	R5629588
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	26-OCT-21	27-OCT-21	R5629588
Thorium (Th)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Tin (Sn)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Titanium (Ti)-Total	0.00657		0.00030	mg/L	26-OCT-21	27-OCT-21	R5629588

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2655497-2 NDR-S-02 Sampled By: RD/MG on 22-OCT-21 @ 11:45 Matrix: WATER							
Total Metals							
Tungsten (W)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Uranium (U)-Total	0.000038		0.000010	mg/L	26-OCT-21	27-OCT-21	R5629588
Vanadium (V)-Total	0.00064		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Zinc (Zn)-Total	0.0062		0.0030	mg/L	26-OCT-21	27-OCT-21	R5629588
Zirconium (Zr)-Total	0.00031		0.00020	mg/L	26-OCT-21	27-OCT-21	R5629588
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					29-OCT-21	R5632675
Aluminum (Al)-Dissolved	0.203		0.0010	mg/L	29-OCT-21	29-OCT-21	R5633788
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Arsenic (As)-Dissolved	0.00113		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Barium (Ba)-Dissolved	0.00675		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Boron (B)-Dissolved	<0.010		0.010	mg/L	29-OCT-21	29-OCT-21	R5633788
Cadmium (Cd)-Dissolved	0.0000186		0.0000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Calcium (Ca)-Dissolved	15.1		0.050	mg/L	29-OCT-21	29-OCT-21	R5633788
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	29-OCT-21	29-OCT-21	R5633788
Chromium (Cr)-Dissolved	0.00062		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Cobalt (Co)-Dissolved	0.00017		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Copper (Cu)-Dissolved	0.00108		0.00020	mg/L	29-OCT-21	29-OCT-21	R5633788
Iron (Fe)-Dissolved	0.652		0.010	mg/L	29-OCT-21	29-OCT-21	R5633788
Lead (Pb)-Dissolved	0.000159		0.000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	29-OCT-21	29-OCT-21	R5633788
Magnesium (Mg)-Dissolved	4.13		0.0050	mg/L	29-OCT-21	29-OCT-21	R5633788
Manganese (Mn)-Dissolved	0.0503		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Molybdenum (Mo)-Dissolved	0.000059		0.000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Nickel (Ni)-Dissolved	0.00076		0.00050	mg/L	29-OCT-21	29-OCT-21	R5633788
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	29-OCT-21	29-OCT-21	R5633788
Potassium (K)-Dissolved	0.287		0.050	mg/L	29-OCT-21	29-OCT-21	R5633788
Rubidium (Rb)-Dissolved	0.00097		0.00020	mg/L	29-OCT-21	29-OCT-21	R5633788
Selenium (Se)-Dissolved	0.000169		0.000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Silicon (Si)-Dissolved	2.56		0.050	mg/L	29-OCT-21	29-OCT-21	R5633788
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	29-OCT-21	29-OCT-21	R5633788
Sodium (Na)-Dissolved	5.05		0.050	mg/L	29-OCT-21	29-OCT-21	R5633788
Strontium (Sr)-Dissolved	0.0296		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Sulfur (S)-Dissolved	0.86		0.50	mg/L	29-OCT-21	29-OCT-21	R5633788
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	29-OCT-21	29-OCT-21	R5633788
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	29-OCT-21	29-OCT-21	R5633788
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Titanium (Ti)-Dissolved	0.00430		0.00030	mg/L	29-OCT-21	29-OCT-21	R5633788

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2655497-2 NDR-S-02 Sampled By: RD/MG on 22-OCT-21 @ 11:45 Matrix: WATER							
Dissolved Metals							
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Uranium (U)-Dissolved	0.000028		0.000010	mg/L	29-OCT-21	29-OCT-21	R5633788
Vanadium (V)-Dissolved	0.00052		0.00050	mg/L	29-OCT-21	29-OCT-21	R5633788
Zinc (Zn)-Dissolved	0.0060		0.0010	mg/L	29-OCT-21	29-OCT-21	R5633788
Zirconium (Zr)-Dissolved	0.00038		0.00020	mg/L	29-OCT-21	29-OCT-21	R5633788
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000355		0.000020	ug/L	29-OCT-21	31-OCT-21	R5633769
L2655497-3 NDR-S-01 Sampled By: RD/MG on 23-OCT-21 @ 12:15 Matrix: WATER							
Physical Tests							
Conductivity	57.2		1.0	umhos/cm		27-OCT-21	R5630977
Hardness (as CaCO3)	41.1	HTC	0.50	mg/L		27-OCT-21	
pH	6.58		0.10	pH units		27-OCT-21	R5630977
Total Suspended Solids	<3.0		3.0	mg/L	29-OCT-21	30-OCT-21	R5633177
Total Dissolved Solids	150	DLDS	13	mg/L		29-OCT-21	R5633092
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	24.4		1.0	mg/L		27-OCT-21	R5630977
Ammonia, Total (as N)	0.020		0.010	mg/L		02-NOV-21	R5635207
Bromide (Br)	<0.10		0.10	mg/L		28-OCT-21	R5632492
Chloride (Cl)	<0.50		0.50	mg/L		28-OCT-21	R5632492
Fluoride (F)	<0.020		0.020	mg/L		28-OCT-21	R5632492
Nitrate (as N)	0.023		0.020	mg/L		28-OCT-21	R5632492
Nitrite (as N)	<0.010		0.010	mg/L		28-OCT-21	R5632492
Phosphorus (P)-Total	0.0243		0.0010	mg/L		10-NOV-21	R5639456
Sulfate (SO4)	1.45		0.30	mg/L		28-OCT-21	R5632492
Cyanides							
Cyanide, Weak Acid Diss	0.0022		0.0020	mg/L		29-OCT-21	R5633500
Cyanide, Total	0.0022		0.0020	mg/L		29-OCT-21	R5633500
Cyanide, Free	<0.0020		0.0020	mg/L		29-OCT-21	R5633500
Inorganic Parameters							
Acidity (as CaCO3)	9.8		2.0	mg/L		29-OCT-21	R5634867
Total Metals							
Aluminum (Al)-Total	0.303		0.0050	mg/L	26-OCT-21	27-OCT-21	R5629588
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Arsenic (As)-Total	0.00122		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Barium (Ba)-Total	0.00565		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Boron (B)-Total	<0.010		0.010	mg/L	26-OCT-21	27-OCT-21	R5629588
Cadmium (Cd)-Total	0.0000275		0.0000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Calcium (Ca)-Total	11.7		0.050	mg/L	26-OCT-21	27-OCT-21	R5629588

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2655497-3 NDR-S-01 Sampled By: RD/MG on 23-OCT-21 @ 12:15 Matrix: WATER							
Total Metals							
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	26-OCT-21	27-OCT-21	R5629588
Chromium (Cr)-Total	0.00084		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Cobalt (Co)-Total	0.00014		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Copper (Cu)-Total	0.00155		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Iron (Fe)-Total	0.669		0.010	mg/L	26-OCT-21	27-OCT-21	R5629588
Lead (Pb)-Total	0.000243		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Lithium (Li)-Total	<0.0010		0.0010	mg/L	26-OCT-21	27-OCT-21	R5629588
Magnesium (Mg)-Total	2.91		0.0050	mg/L	26-OCT-21	27-OCT-21	R5629588
Manganese (Mn)-Total	0.0157		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Mercury (Hg)-Total	0.00402		0.00050	ug/L		17-NOV-21	R5652727
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Nickel (Ni)-Total	0.00100		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Phosphorus (P)-Total	<0.050		0.050	mg/L	26-OCT-21	27-OCT-21	R5629588
Potassium (K)-Total	0.090		0.050	mg/L	26-OCT-21	27-OCT-21	R5629588
Rubidium (Rb)-Total	0.00051		0.00020	mg/L	26-OCT-21	27-OCT-21	R5629588
Selenium (Se)-Total	0.000204		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Silicon (Si)-Total	2.39		0.10	mg/L	26-OCT-21	27-OCT-21	R5629588
Silver (Ag)-Total	<0.000050		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Sodium (Na)-Total	0.726		0.050	mg/L	26-OCT-21	27-OCT-21	R5629588
Strontium (Sr)-Total	0.0230		0.0010	mg/L	26-OCT-21	27-OCT-21	R5629588
Sulfur (S)-Total	0.83		0.50	mg/L	26-OCT-21	27-OCT-21	R5629588
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	26-OCT-21	27-OCT-21	R5629588
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	26-OCT-21	27-OCT-21	R5629588
Thorium (Th)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Tin (Sn)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Titanium (Ti)-Total	0.00601		0.00030	mg/L	26-OCT-21	27-OCT-21	R5629588
Tungsten (W)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Uranium (U)-Total	0.000026		0.000010	mg/L	26-OCT-21	27-OCT-21	R5629588
Vanadium (V)-Total	0.00071		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Zinc (Zn)-Total	0.0082		0.0030	mg/L	26-OCT-21	27-OCT-21	R5629588
Zirconium (Zr)-Total	0.00037		0.00020	mg/L	26-OCT-21	27-OCT-21	R5629588
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					29-OCT-21	R5632675
Aluminum (Al)-Dissolved	0.312		0.0010	mg/L	29-OCT-21	29-OCT-21	R5633788
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Arsenic (As)-Dissolved	0.00126		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Barium (Ba)-Dissolved	0.00595		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Boron (B)-Dissolved	<0.010		0.010	mg/L	29-OCT-21	29-OCT-21	R5633788
Cadmium (Cd)-Dissolved	0.0000256		0.0000050	mg/L	29-OCT-21	29-OCT-21	R5633788

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2655497-3 NDR-S-01 Sampled By: RD/MG on 23-OCT-21 @ 12:15 Matrix: WATER							
Dissolved Metals							
Calcium (Ca)-Dissolved	12.1		0.050	mg/L	29-OCT-21	29-OCT-21	R5633788
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	29-OCT-21	29-OCT-21	R5633788
Chromium (Cr)-Dissolved	0.00086		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Cobalt (Co)-Dissolved	0.00013		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Copper (Cu)-Dissolved	0.00151		0.00020	mg/L	29-OCT-21	29-OCT-21	R5633788
Iron (Fe)-Dissolved	0.656		0.010	mg/L	29-OCT-21	29-OCT-21	R5633788
Lead (Pb)-Dissolved	0.000226		0.000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	29-OCT-21	29-OCT-21	R5633788
Magnesium (Mg)-Dissolved	3.10		0.0050	mg/L	29-OCT-21	29-OCT-21	R5633788
Manganese (Mn)-Dissolved	0.0149		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Nickel (Ni)-Dissolved	0.00102		0.00050	mg/L	29-OCT-21	29-OCT-21	R5633788
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	29-OCT-21	29-OCT-21	R5633788
Potassium (K)-Dissolved	0.102		0.050	mg/L	29-OCT-21	29-OCT-21	R5633788
Rubidium (Rb)-Dissolved	0.00051		0.00020	mg/L	29-OCT-21	29-OCT-21	R5633788
Selenium (Se)-Dissolved	0.000230		0.000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Silicon (Si)-Dissolved	2.44		0.050	mg/L	29-OCT-21	29-OCT-21	R5633788
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	29-OCT-21	29-OCT-21	R5633788
Sodium (Na)-Dissolved	0.780		0.050	mg/L	29-OCT-21	29-OCT-21	R5633788
Strontium (Sr)-Dissolved	0.0218		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Sulfur (S)-Dissolved	1.09		0.50	mg/L	29-OCT-21	29-OCT-21	R5633788
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	29-OCT-21	29-OCT-21	R5633788
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	29-OCT-21	29-OCT-21	R5633788
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Titanium (Ti)-Dissolved	0.00611		0.00030	mg/L	29-OCT-21	29-OCT-21	R5633788
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Uranium (U)-Dissolved	0.000022		0.000010	mg/L	29-OCT-21	29-OCT-21	R5633788
Vanadium (V)-Dissolved	0.00070		0.00050	mg/L	29-OCT-21	29-OCT-21	R5633788
Zinc (Zn)-Dissolved	0.0087		0.0010	mg/L	29-OCT-21	29-OCT-21	R5633788
Zirconium (Zr)-Dissolved	0.00053		0.00020	mg/L	29-OCT-21	29-OCT-21	R5633788
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000498		0.000020	ug/L	29-OCT-21	31-OCT-21	R5633769
L2655497-4 WBR-S-04 Sampled By: RD/MG on 24-OCT-21 @ 14:10 Matrix: WATER							
Physical Tests							
Conductivity	55.2		1.0	umhos/cm		27-OCT-21	R5630999
Hardness (as CaCO3)	39.2	HTC	0.50	mg/L		28-OCT-21	
pH	6.91		0.10	pH units		27-OCT-21	R5630999
Total Suspended Solids	4.2		3.0	mg/L	29-OCT-21	30-OCT-21	R5633177
Total Dissolved Solids	129	DLDS	13	mg/L		29-OCT-21	R5633092

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2655497-4 WBR-S-04 Sampled By: RD/MG on 24-OCT-21 @ 14:10 Matrix: WATER							
Physical Tests							
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	25.6		1.0	mg/L		27-OCT-21	R5630999
Ammonia, Total (as N)	0.019		0.010	mg/L		02-NOV-21	R5635207
Bromide (Br)	<0.10		0.10	mg/L		28-OCT-21	R5632492
Chloride (Cl)	<0.50		0.50	mg/L		28-OCT-21	R5632492
Fluoride (F)	<0.020		0.020	mg/L		28-OCT-21	R5632492
Nitrate (as N)	0.046		0.020	mg/L		28-OCT-21	R5632492
Nitrite (as N)	<0.010		0.010	mg/L		28-OCT-21	R5632492
Phosphorus (P)-Total	0.0290		0.0010	mg/L		10-NOV-21	R5639456
Sulfate (SO4)	0.78		0.30	mg/L		28-OCT-21	R5632492
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L		29-OCT-21	R5633500
Cyanide, Total	<0.0020		0.0020	mg/L		29-OCT-21	R5633500
Cyanide, Free	<0.0020		0.0020	mg/L		29-OCT-21	R5633500
Inorganic Parameters							
Acidity (as CaCO3)	6.6	HTD	2.0	mg/L		09-NOV-21	R5642018
Total Metals							
Aluminum (Al)-Total	0.661		0.0050	mg/L	26-OCT-21	27-OCT-21	R5629588
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Arsenic (As)-Total	0.00135		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Barium (Ba)-Total	0.00906		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Boron (B)-Total	<0.010		0.010	mg/L	26-OCT-21	27-OCT-21	R5629588
Cadmium (Cd)-Total	0.0000438		0.0000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Calcium (Ca)-Total	10.9		0.050	mg/L	26-OCT-21	27-OCT-21	R5629588
Cesium (Cs)-Total	0.000040		0.000010	mg/L	26-OCT-21	27-OCT-21	R5629588
Chromium (Cr)-Total	0.00157		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Cobalt (Co)-Total	0.00037		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Copper (Cu)-Total	0.00211		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Iron (Fe)-Total	1.16		0.010	mg/L	26-OCT-21	27-OCT-21	R5629588
Lead (Pb)-Total	0.000465		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Lithium (Li)-Total	<0.0010		0.0010	mg/L	26-OCT-21	27-OCT-21	R5629588
Magnesium (Mg)-Total	2.89		0.0050	mg/L	26-OCT-21	27-OCT-21	R5629588
Manganese (Mn)-Total	0.0669		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Mercury (Hg)-Total	0.00203		0.00050	ug/L		17-NOV-21	R5652727
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Nickel (Ni)-Total	0.00144		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Phosphorus (P)-Total	<0.050		0.050	mg/L	26-OCT-21	27-OCT-21	R5629588
Potassium (K)-Total	0.274		0.050	mg/L	26-OCT-21	27-OCT-21	R5629588
Rubidium (Rb)-Total	0.00135		0.00020	mg/L	26-OCT-21	27-OCT-21	R5629588
Selenium (Se)-Total	0.000187		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2655497-4 WBR-S-04 Sampled By: RD/MG on 24-OCT-21 @ 14:10 Matrix: WATER							
Total Metals							
Silicon (Si)-Total	2.83		0.10	mg/L	26-OCT-21	27-OCT-21	R5629588
Silver (Ag)-Total	<0.000050		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Sodium (Na)-Total	1.08		0.050	mg/L	26-OCT-21	27-OCT-21	R5629588
Strontium (Sr)-Total	0.0245		0.0010	mg/L	26-OCT-21	27-OCT-21	R5629588
Sulfur (S)-Total	<0.50		0.50	mg/L	26-OCT-21	27-OCT-21	R5629588
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	26-OCT-21	27-OCT-21	R5629588
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	26-OCT-21	27-OCT-21	R5629588
Thorium (Th)-Total	0.00013		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Tin (Sn)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Titanium (Ti)-Total	0.0216		0.00030	mg/L	26-OCT-21	27-OCT-21	R5629588
Tungsten (W)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Uranium (U)-Total	0.000061		0.000010	mg/L	26-OCT-21	27-OCT-21	R5629588
Vanadium (V)-Total	0.00135		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Zinc (Zn)-Total	0.0080		0.0030	mg/L	26-OCT-21	27-OCT-21	R5629588
Zirconium (Zr)-Total	0.00070		0.00020	mg/L	26-OCT-21	27-OCT-21	R5629588
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					29-OCT-21	R5632675
Aluminum (Al)-Dissolved	0.362		0.0010	mg/L	29-OCT-21	29-OCT-21	R5633788
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Arsenic (As)-Dissolved	0.00135		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Barium (Ba)-Dissolved	0.00729		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Boron (B)-Dissolved	<0.010		0.010	mg/L	29-OCT-21	29-OCT-21	R5633788
Cadmium (Cd)-Dissolved	0.0000383		0.0000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Calcium (Ca)-Dissolved	11.2		0.050	mg/L	29-OCT-21	29-OCT-21	R5633788
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	29-OCT-21	29-OCT-21	R5633788
Chromium (Cr)-Dissolved	0.00093		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Cobalt (Co)-Dissolved	0.00016		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Copper (Cu)-Dissolved	0.00193		0.00020	mg/L	29-OCT-21	29-OCT-21	R5633788
Iron (Fe)-Dissolved	0.807		0.010	mg/L	29-OCT-21	29-OCT-21	R5633788
Lead (Pb)-Dissolved	0.000303		0.000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	29-OCT-21	29-OCT-21	R5633788
Magnesium (Mg)-Dissolved	2.94		0.0050	mg/L	29-OCT-21	29-OCT-21	R5633788
Manganese (Mn)-Dissolved	0.0457		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Nickel (Ni)-Dissolved	0.00095		0.00050	mg/L	29-OCT-21	29-OCT-21	R5633788
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	29-OCT-21	29-OCT-21	R5633788
Potassium (K)-Dissolved	0.207		0.050	mg/L	29-OCT-21	29-OCT-21	R5633788
Rubidium (Rb)-Dissolved	0.00068		0.00020	mg/L	29-OCT-21	29-OCT-21	R5633788
Selenium (Se)-Dissolved	0.000197		0.000050	mg/L	29-OCT-21	29-OCT-21	R5633788

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2655497-4 WBR-S-04 Sampled By: RD/MG on 24-OCT-21 @ 14:10 Matrix: WATER							
Dissolved Metals							
Silicon (Si)-Dissolved	2.24		0.050	mg/L	29-OCT-21	29-OCT-21	R5633788
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	29-OCT-21	29-OCT-21	R5633788
Sodium (Na)-Dissolved	1.11		0.050	mg/L	29-OCT-21	29-OCT-21	R5633788
Strontium (Sr)-Dissolved	0.0242		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Sulfur (S)-Dissolved	0.64		0.50	mg/L	29-OCT-21	29-OCT-21	R5633788
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	29-OCT-21	29-OCT-21	R5633788
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	29-OCT-21	29-OCT-21	R5633788
Thorium (Th)-Dissolved	0.00011		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Titanium (Ti)-Dissolved	0.00963		0.00030	mg/L	29-OCT-21	29-OCT-21	R5633788
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Uranium (U)-Dissolved	0.000047		0.000010	mg/L	29-OCT-21	29-OCT-21	R5633788
Vanadium (V)-Dissolved	0.00078		0.00050	mg/L	29-OCT-21	29-OCT-21	R5633788
Zinc (Zn)-Dissolved	0.0099		0.0010	mg/L	29-OCT-21	29-OCT-21	R5633788
Zirconium (Zr)-Dissolved	0.00066		0.00020	mg/L	29-OCT-21	29-OCT-21	R5633788
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000296		0.000020	ug/L	29-OCT-21	31-OCT-21	R5633769
L2655497-5 WBR-S-03 Sampled By: RD/MG on 24-OCT-21 @ 16:40 Matrix: WATER							
Physical Tests							
Conductivity	55.7		1.0	umhos/cm		27-OCT-21	R5630999
Hardness (as CaCO3)	40.7	HTC	0.50	mg/L		28-OCT-21	
pH	6.90		0.10	pH units		27-OCT-21	R5630999
Total Suspended Solids	<3.0		3.0	mg/L	29-OCT-21	30-OCT-21	R5633177
Total Dissolved Solids	132	DLDS	13	mg/L		29-OCT-21	R5633092
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	26.8		1.0	mg/L		27-OCT-21	R5630999
Ammonia, Total (as N)	0.018		0.010	mg/L		02-NOV-21	R5635207
Bromide (Br)	<0.10		0.10	mg/L		28-OCT-21	R5632492
Chloride (Cl)	<0.50		0.50	mg/L		28-OCT-21	R5632492
Fluoride (F)	<0.020		0.020	mg/L		28-OCT-21	R5632492
Nitrate (as N)	0.058		0.020	mg/L		28-OCT-21	R5632492
Nitrite (as N)	<0.010		0.010	mg/L		28-OCT-21	R5632492
Phosphorus (P)-Total	0.0301		0.0010	mg/L		10-NOV-21	R5639456
Sulfate (SO4)	0.83		0.30	mg/L		28-OCT-21	R5632492
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L		29-OCT-21	R5633500
Cyanide, Total	<0.0020		0.0020	mg/L		29-OCT-21	R5633500
Cyanide, Free	<0.0020		0.0020	mg/L		29-OCT-21	R5633500
Inorganic Parameters							
Acidity (as CaCO3)	6.7	HTD	2.0	mg/L		09-NOV-21	R5642018

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2655497-5 WBR-S-03 Sampled By: RD/MG on 24-OCT-21 @ 16:40 Matrix: WATER							
Inorganic Parameters							
Total Metals							
Aluminum (Al)-Total	0.713		0.0050	mg/L	26-OCT-21	27-OCT-21	R5629588
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Arsenic (As)-Total	0.00141		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Barium (Ba)-Total	0.00925		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Boron (B)-Total	<0.010		0.010	mg/L	26-OCT-21	27-OCT-21	R5629588
Cadmium (Cd)-Total	0.0000400		0.0000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Calcium (Ca)-Total	11.3		0.050	mg/L	26-OCT-21	27-OCT-21	R5629588
Cesium (Cs)-Total	0.000041		0.000010	mg/L	26-OCT-21	27-OCT-21	R5629588
Chromium (Cr)-Total	0.00157		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Cobalt (Co)-Total	0.00033		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Copper (Cu)-Total	0.00228		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Iron (Fe)-Total	1.19		0.010	mg/L	26-OCT-21	27-OCT-21	R5629588
Lead (Pb)-Total	0.000464		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Lithium (Li)-Total	<0.0010		0.0010	mg/L	26-OCT-21	27-OCT-21	R5629588
Magnesium (Mg)-Total	3.03		0.0050	mg/L	26-OCT-21	27-OCT-21	R5629588
Manganese (Mn)-Total	0.0536		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Mercury (Hg)-Total	0.00286		0.00050	ug/L		17-NOV-21	R5652727
Molybdenum (Mo)-Total	0.000057		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Nickel (Ni)-Total	0.00148		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Phosphorus (P)-Total	<0.050		0.050	mg/L	26-OCT-21	27-OCT-21	R5629588
Potassium (K)-Total	0.295		0.050	mg/L	26-OCT-21	27-OCT-21	R5629588
Rubidium (Rb)-Total	0.00148		0.00020	mg/L	26-OCT-21	27-OCT-21	R5629588
Selenium (Se)-Total	0.000218		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Silicon (Si)-Total	2.95		0.10	mg/L	26-OCT-21	27-OCT-21	R5629588
Silver (Ag)-Total	<0.000050		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Sodium (Na)-Total	1.20		0.050	mg/L	26-OCT-21	27-OCT-21	R5629588
Strontium (Sr)-Total	0.0254		0.0010	mg/L	26-OCT-21	27-OCT-21	R5629588
Sulfur (S)-Total	<0.50		0.50	mg/L	26-OCT-21	27-OCT-21	R5629588
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	26-OCT-21	27-OCT-21	R5629588
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	26-OCT-21	27-OCT-21	R5629588
Thorium (Th)-Total	0.00015		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Tin (Sn)-Total	0.00017		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Titanium (Ti)-Total	0.0243		0.00030	mg/L	26-OCT-21	27-OCT-21	R5629588
Tungsten (W)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Uranium (U)-Total	0.000065		0.000010	mg/L	26-OCT-21	27-OCT-21	R5629588
Vanadium (V)-Total	0.00146		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Zinc (Zn)-Total	0.0081		0.0030	mg/L	26-OCT-21	27-OCT-21	R5629588
Zirconium (Zr)-Total	0.00078		0.00020	mg/L	26-OCT-21	27-OCT-21	R5629588

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2655497-5 WBR-S-03 Sampled By: RD/MG on 24-OCT-21 @ 16:40 Matrix: WATER							
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					29-OCT-21	R5632675
Aluminum (Al)-Dissolved	0.378		0.0010	mg/L	29-OCT-21	29-OCT-21	R5633788
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Arsenic (As)-Dissolved	0.00141		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Barium (Ba)-Dissolved	0.00727		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Boron (B)-Dissolved	<0.010		0.010	mg/L	29-OCT-21	29-OCT-21	R5633788
Cadmium (Cd)-Dissolved	0.0000333		0.0000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Calcium (Ca)-Dissolved	11.5		0.050	mg/L	29-OCT-21	29-OCT-21	R5633788
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	29-OCT-21	29-OCT-21	R5633788
Chromium (Cr)-Dissolved	0.00090		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Cobalt (Co)-Dissolved	0.00017		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Copper (Cu)-Dissolved	0.00203		0.00020	mg/L	29-OCT-21	29-OCT-21	R5633788
Iron (Fe)-Dissolved	0.824		0.010	mg/L	29-OCT-21	29-OCT-21	R5633788
Lead (Pb)-Dissolved	0.000306		0.000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	29-OCT-21	29-OCT-21	R5633788
Magnesium (Mg)-Dissolved	2.98		0.0050	mg/L	29-OCT-21	29-OCT-21	R5633788
Manganese (Mn)-Dissolved	0.0436		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Molybdenum (Mo)-Dissolved	0.000054		0.000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Nickel (Ni)-Dissolved	0.00101		0.00050	mg/L	29-OCT-21	29-OCT-21	R5633788
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	29-OCT-21	29-OCT-21	R5633788
Potassium (K)-Dissolved	0.216		0.050	mg/L	29-OCT-21	29-OCT-21	R5633788
Rubidium (Rb)-Dissolved	0.00074		0.00020	mg/L	29-OCT-21	29-OCT-21	R5633788
Selenium (Se)-Dissolved	0.000203		0.000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Silicon (Si)-Dissolved	2.29		0.050	mg/L	29-OCT-21	29-OCT-21	R5633788
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	29-OCT-21	29-OCT-21	R5633788
Sodium (Na)-Dissolved	1.14		0.050	mg/L	29-OCT-21	29-OCT-21	R5633788
Strontium (Sr)-Dissolved	0.0257		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Sulfur (S)-Dissolved	0.61		0.50	mg/L	29-OCT-21	29-OCT-21	R5633788
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	29-OCT-21	29-OCT-21	R5633788
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	29-OCT-21	29-OCT-21	R5633788
Thorium (Th)-Dissolved	0.00012		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Titanium (Ti)-Dissolved	0.00983		0.00030	mg/L	29-OCT-21	29-OCT-21	R5633788
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Uranium (U)-Dissolved	0.000055		0.000010	mg/L	29-OCT-21	29-OCT-21	R5633788
Vanadium (V)-Dissolved	0.00081		0.00050	mg/L	29-OCT-21	29-OCT-21	R5633788
Zinc (Zn)-Dissolved	0.0067		0.0010	mg/L	29-OCT-21	29-OCT-21	R5633788
Zirconium (Zr)-Dissolved	0.00070		0.00020	mg/L	29-OCT-21	29-OCT-21	R5633788
Speciated Metals							

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2655497-5 WBR-S-03 Sampled By: RD/MG on 24-OCT-21 @ 16:40 Matrix: WATER							
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000277		0.000020	ug/L	29-OCT-21	31-OCT-21	R5633769
L2655497-6 NDR-P-01 Sampled By: RD/MG on 24-OCT-21 @ 11:15 Matrix: WATER							
Physical Tests							
Conductivity	49.9		1.0	umhos/cm		27-OCT-21	R5629603
Hardness (as CaCO3)	34.4	HTC	0.50	mg/L		28-OCT-21	
pH	6.51		0.10	pH units		27-OCT-21	R5629603
Total Suspended Solids	<3.0		3.0	mg/L	29-OCT-21	30-OCT-21	R5633177
Total Dissolved Solids	122	DLDS	13	mg/L		29-OCT-21	R5633092
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	20.0		1.0	mg/L		27-OCT-21	R5629603
Ammonia, Total (as N)	0.020		0.010	mg/L		02-NOV-21	R5635207
Bromide (Br)	<0.10		0.10	mg/L		28-OCT-21	R5632492
Chloride (Cl)	<0.50		0.50	mg/L		28-OCT-21	R5632492
Fluoride (F)	<0.020		0.020	mg/L		28-OCT-21	R5632492
Nitrate (as N)	<0.020		0.020	mg/L		28-OCT-21	R5632492
Nitrite (as N)	<0.010		0.010	mg/L		28-OCT-21	R5632492
Phosphorus (P)-Total	0.0196		0.0010	mg/L		10-NOV-21	R5639456
Sulfate (SO4)	<0.30		0.30	mg/L		28-OCT-21	R5632492
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L		29-OCT-21	R5633500
Cyanide, Total	<0.0020		0.0020	mg/L		29-OCT-21	R5633500
Cyanide, Free	<0.0020		0.0020	mg/L		29-OCT-21	R5633500
Inorganic Parameters							
Acidity (as CaCO3)	8.7	HTD	2.0	mg/L		09-NOV-21	R5642018
Total Metals							
Aluminum (Al)-Total	0.201		0.0050	mg/L	26-OCT-21	27-OCT-21	R5629588
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Arsenic (As)-Total	0.00118		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Barium (Ba)-Total	0.00331		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Boron (B)-Total	<0.010		0.010	mg/L	26-OCT-21	27-OCT-21	R5629588
Cadmium (Cd)-Total	0.0000183		0.0000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Calcium (Ca)-Total	9.16		0.050	mg/L	26-OCT-21	27-OCT-21	R5629588
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	26-OCT-21	27-OCT-21	R5629588
Chromium (Cr)-Total	0.00061		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Cobalt (Co)-Total	0.00014		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Copper (Cu)-Total	0.00070		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Iron (Fe)-Total	0.631		0.010	mg/L	26-OCT-21	27-OCT-21	R5629588
Lead (Pb)-Total	0.000160		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2655497-6 NDR-P-01 Sampled By: RD/MG on 24-OCT-21 @ 11:15 Matrix: WATER							
Total Metals							
Lithium (Li)-Total	<0.0010		0.0010	mg/L	26-OCT-21	27-OCT-21	R5629588
Magnesium (Mg)-Total	2.79		0.0050	mg/L	26-OCT-21	27-OCT-21	R5629588
Manganese (Mn)-Total	0.0160		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Mercury (Hg)-Total	0.00076		0.00050	ug/L		17-NOV-21	R5652727
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Nickel (Ni)-Total	0.00056		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Phosphorus (P)-Total	<0.050		0.050	mg/L	26-OCT-21	27-OCT-21	R5629588
Potassium (K)-Total	0.089		0.050	mg/L	26-OCT-21	27-OCT-21	R5629588
Rubidium (Rb)-Total	0.00055		0.00020	mg/L	26-OCT-21	27-OCT-21	R5629588
Selenium (Se)-Total	0.000147		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Silicon (Si)-Total	1.58		0.10	mg/L	26-OCT-21	27-OCT-21	R5629588
Silver (Ag)-Total	<0.000050		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Sodium (Na)-Total	0.655		0.050	mg/L	26-OCT-21	27-OCT-21	R5629588
Strontium (Sr)-Total	0.0152		0.0010	mg/L	26-OCT-21	27-OCT-21	R5629588
Sulfur (S)-Total	<0.50		0.50	mg/L	26-OCT-21	27-OCT-21	R5629588
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	26-OCT-21	27-OCT-21	R5629588
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	26-OCT-21	27-OCT-21	R5629588
Thorium (Th)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Tin (Sn)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Titanium (Ti)-Total	0.00296		0.00030	mg/L	26-OCT-21	27-OCT-21	R5629588
Tungsten (W)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Uranium (U)-Total	0.000012		0.000010	mg/L	26-OCT-21	27-OCT-21	R5629588
Vanadium (V)-Total	<0.00050		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Zinc (Zn)-Total	0.0077		0.0030	mg/L	26-OCT-21	27-OCT-21	R5629588
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	26-OCT-21	27-OCT-21	R5629588
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					29-OCT-21	R5632675
Aluminum (Al)-Dissolved	0.205		0.0010	mg/L	29-OCT-21	29-OCT-21	R5633788
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Arsenic (As)-Dissolved	0.00112		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Barium (Ba)-Dissolved	0.00337		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Boron (B)-Dissolved	<0.010		0.010	mg/L	29-OCT-21	29-OCT-21	R5633788
Cadmium (Cd)-Dissolved	0.0000109		0.0000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Calcium (Ca)-Dissolved	9.90		0.050	mg/L	29-OCT-21	29-OCT-21	R5633788
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	29-OCT-21	29-OCT-21	R5633788
Chromium (Cr)-Dissolved	0.00061		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Cobalt (Co)-Dissolved	0.00013		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Copper (Cu)-Dissolved	0.00049		0.00020	mg/L	29-OCT-21	29-OCT-21	R5633788
Iron (Fe)-Dissolved	0.618		0.010	mg/L	29-OCT-21	29-OCT-21	R5633788

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2655497-6 NDR-P-01 Sampled By: RD/MG on 24-OCT-21 @ 11:15 Matrix: WATER							
Dissolved Metals							
Lead (Pb)-Dissolved	0.000137		0.000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	29-OCT-21	29-OCT-21	R5633788
Magnesium (Mg)-Dissolved	3.08		0.0050	mg/L	29-OCT-21	29-OCT-21	R5633788
Manganese (Mn)-Dissolved	0.0139		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	29-OCT-21	29-OCT-21	R5633788
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	29-OCT-21	29-OCT-21	R5633788
Potassium (K)-Dissolved	0.103		0.050	mg/L	29-OCT-21	29-OCT-21	R5633788
Rubidium (Rb)-Dissolved	0.00053		0.00020	mg/L	29-OCT-21	29-OCT-21	R5633788
Selenium (Se)-Dissolved	0.000201		0.000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Silicon (Si)-Dissolved	1.64		0.050	mg/L	29-OCT-21	29-OCT-21	R5633788
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	29-OCT-21	29-OCT-21	R5633788
Sodium (Na)-Dissolved	0.709		0.050	mg/L	29-OCT-21	29-OCT-21	R5633788
Strontium (Sr)-Dissolved	0.0155		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Sulfur (S)-Dissolved	<0.50		0.50	mg/L	29-OCT-21	29-OCT-21	R5633788
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	29-OCT-21	29-OCT-21	R5633788
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	29-OCT-21	29-OCT-21	R5633788
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Titanium (Ti)-Dissolved	0.00267		0.00030	mg/L	29-OCT-21	29-OCT-21	R5633788
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Uranium (U)-Dissolved	0.000011		0.000010	mg/L	29-OCT-21	29-OCT-21	R5633788
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	29-OCT-21	29-OCT-21	R5633788
Zinc (Zn)-Dissolved	0.0077		0.0010	mg/L	29-OCT-21	29-OCT-21	R5633788
Zirconium (Zr)-Dissolved	0.00022		0.00020	mg/L	29-OCT-21	29-OCT-21	R5633788
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000133		0.000020	ug/L	29-OCT-21	31-OCT-21	R5633769
L2655497-7 CNC-DUP-02 Sampled By: RD/MG on 24-OCT-21 Matrix: WATER							
Physical Tests							
Conductivity	50.6		1.0	umhos/cm		27-OCT-21	R5630999
Hardness (as CaCO3)	34.5	HTC	0.50	mg/L		28-OCT-21	
pH	6.51		0.10	pH units		27-OCT-21	R5630999
Total Suspended Solids	<3.0		3.0	mg/L	29-OCT-21	30-OCT-21	R5633177
Total Dissolved Solids	118	DLDS	13	mg/L		29-OCT-21	R5633092
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	21.7		1.0	mg/L		27-OCT-21	R5630999
Ammonia, Total (as N)	0.023		0.010	mg/L		02-NOV-21	R5635207
Bromide (Br)	<0.10		0.10	mg/L		28-OCT-21	R5632492
Chloride (Cl)	<0.50		0.50	mg/L		28-OCT-21	R5632492
Fluoride (F)	<0.020		0.020	mg/L		28-OCT-21	R5632492

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2655497-7 CNC-DUP-02 Sampled By: RD/MG on 24-OCT-21 Matrix: WATER							
Anions and Nutrients							
Nitrate (as N)	<0.020		0.020	mg/L		28-OCT-21	R5632492
Nitrite (as N)	<0.010		0.010	mg/L		28-OCT-21	R5632492
Phosphorus (P)-Total	0.0189		0.0010	mg/L		10-NOV-21	R5639456
Sulfate (SO4)	<0.30		0.30	mg/L		28-OCT-21	R5632492
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L		29-OCT-21	R5633500
Cyanide, Total	<0.0020		0.0020	mg/L		29-OCT-21	R5633500
Cyanide, Free	<0.0020		0.0020	mg/L		29-OCT-21	R5633500
Inorganic Parameters							
Acidity (as CaCO3)	8.2	HTD	2.0	mg/L		09-NOV-21	R5642018
Total Metals							
Aluminum (Al)-Total	0.198		0.0050	mg/L	26-OCT-21	27-OCT-21	R5629588
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Arsenic (As)-Total	0.00112		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Barium (Ba)-Total	0.00324		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Boron (B)-Total	<0.010		0.010	mg/L	26-OCT-21	27-OCT-21	R5629588
Cadmium (Cd)-Total	0.0000160		0.0000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Calcium (Ca)-Total	9.32		0.050	mg/L	26-OCT-21	27-OCT-21	R5629588
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	26-OCT-21	27-OCT-21	R5629588
Chromium (Cr)-Total	0.00063		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Cobalt (Co)-Total	0.00012		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Copper (Cu)-Total	0.00060		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Iron (Fe)-Total	0.629		0.010	mg/L	26-OCT-21	27-OCT-21	R5629588
Lead (Pb)-Total	0.000175		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Lithium (Li)-Total	<0.0010		0.0010	mg/L	26-OCT-21	27-OCT-21	R5629588
Magnesium (Mg)-Total	2.74		0.0050	mg/L	26-OCT-21	27-OCT-21	R5629588
Manganese (Mn)-Total	0.0160		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Mercury (Hg)-Total	0.00078		0.00050	ug/L		17-NOV-21	R5652727
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Phosphorus (P)-Total	<0.050		0.050	mg/L	26-OCT-21	27-OCT-21	R5629588
Potassium (K)-Total	0.093		0.050	mg/L	26-OCT-21	27-OCT-21	R5629588
Rubidium (Rb)-Total	0.00050		0.00020	mg/L	26-OCT-21	27-OCT-21	R5629588
Selenium (Se)-Total	0.000161		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Silicon (Si)-Total	1.57		0.10	mg/L	26-OCT-21	27-OCT-21	R5629588
Silver (Ag)-Total	<0.000050		0.000050	mg/L	26-OCT-21	27-OCT-21	R5629588
Sodium (Na)-Total	0.653		0.050	mg/L	26-OCT-21	27-OCT-21	R5629588
Strontium (Sr)-Total	0.0147		0.0010	mg/L	26-OCT-21	27-OCT-21	R5629588
Sulfur (S)-Total	<0.50		0.50	mg/L	26-OCT-21	27-OCT-21	R5629588
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	26-OCT-21	27-OCT-21	R5629588

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2655497-7 CNC-DUP-02 Sampled By: RD/MG on 24-OCT-21 Matrix: WATER							
Total Metals							
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	26-OCT-21	27-OCT-21	R5629588
Thorium (Th)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Tin (Sn)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Titanium (Ti)-Total	0.00294		0.00030	mg/L	26-OCT-21	27-OCT-21	R5629588
Tungsten (W)-Total	<0.00010		0.00010	mg/L	26-OCT-21	27-OCT-21	R5629588
Uranium (U)-Total	0.000012		0.000010	mg/L	26-OCT-21	27-OCT-21	R5629588
Vanadium (V)-Total	<0.00050		0.00050	mg/L	26-OCT-21	27-OCT-21	R5629588
Zinc (Zn)-Total	0.0075		0.0030	mg/L	26-OCT-21	27-OCT-21	R5629588
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	26-OCT-21	27-OCT-21	R5629588
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					29-OCT-21	R5632675
Aluminum (Al)-Dissolved	0.206		0.0010	mg/L	29-OCT-21	29-OCT-21	R5633788
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Arsenic (As)-Dissolved	0.00112		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Barium (Ba)-Dissolved	0.00336		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Boron (B)-Dissolved	<0.010		0.010	mg/L	29-OCT-21	29-OCT-21	R5633788
Cadmium (Cd)-Dissolved	0.0000139		0.0000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Calcium (Ca)-Dissolved	9.91		0.050	mg/L	29-OCT-21	29-OCT-21	R5633788
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	29-OCT-21	29-OCT-21	R5633788
Chromium (Cr)-Dissolved	0.00057		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Cobalt (Co)-Dissolved	0.00012		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Copper (Cu)-Dissolved	0.00046		0.00020	mg/L	29-OCT-21	29-OCT-21	R5633788
Iron (Fe)-Dissolved	0.619		0.010	mg/L	29-OCT-21	29-OCT-21	R5633788
Lead (Pb)-Dissolved	0.000130		0.000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	29-OCT-21	29-OCT-21	R5633788
Magnesium (Mg)-Dissolved	2.94		0.0050	mg/L	29-OCT-21	29-OCT-21	R5633788
Manganese (Mn)-Dissolved	0.0140		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	29-OCT-21	29-OCT-21	R5633788
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	29-OCT-21	29-OCT-21	R5633788
Potassium (K)-Dissolved	0.101		0.050	mg/L	29-OCT-21	29-OCT-21	R5633788
Rubidium (Rb)-Dissolved	0.00054		0.00020	mg/L	29-OCT-21	29-OCT-21	R5633788
Selenium (Se)-Dissolved	0.000157		0.000050	mg/L	29-OCT-21	29-OCT-21	R5633788
Silicon (Si)-Dissolved	1.62		0.050	mg/L	29-OCT-21	29-OCT-21	R5633788
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	29-OCT-21	29-OCT-21	R5633788
Sodium (Na)-Dissolved	0.692		0.050	mg/L	29-OCT-21	29-OCT-21	R5633788
Strontium (Sr)-Dissolved	0.0157		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Sulfur (S)-Dissolved	<0.50		0.50	mg/L	29-OCT-21	29-OCT-21	R5633788
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	29-OCT-21	29-OCT-21	R5633788

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2655497-7 CNC-DUP-02 Sampled By: RD/MG on 24-OCT-21 Matrix: WATER							
Dissolved Metals							
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	29-OCT-21	29-OCT-21	R5633788
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Titanium (Ti)-Dissolved	0.00264		0.00030	mg/L	29-OCT-21	29-OCT-21	R5633788
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	29-OCT-21	29-OCT-21	R5633788
Uranium (U)-Dissolved	0.000011		0.000010	mg/L	29-OCT-21	29-OCT-21	R5633788
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	29-OCT-21	29-OCT-21	R5633788
Zinc (Zn)-Dissolved	0.0078		0.0010	mg/L	29-OCT-21	29-OCT-21	R5633788
Zirconium (Zr)-Dissolved	0.00022		0.00020	mg/L	29-OCT-21	29-OCT-21	R5633788
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000137		0.000020	ug/L	29-OCT-21	31-OCT-21	R5633769

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

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L2655497-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L2655497-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Magnesium (Mg)-Dissolved	MS-B	L2655497-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L2655497-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L2655497-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Aluminum (Al)-Total	MS-B	L2655497-1, -2
Matrix Spike	Aluminum (Al)-Total	MS-B	L2655497-4, -5, -6, -7
Matrix Spike	Barium (Ba)-Total	MS-B	L2655497-3
Matrix Spike	Calcium (Ca)-Total	MS-B	L2655497-1, -2
Matrix Spike	Calcium (Ca)-Total	MS-B	L2655497-3
Matrix Spike	Calcium (Ca)-Total	MS-B	L2655497-4, -5, -6, -7
Matrix Spike	Iron (Fe)-Total	MS-B	L2655497-1, -2
Matrix Spike	Iron (Fe)-Total	MS-B	L2655497-3
Matrix Spike	Iron (Fe)-Total	MS-B	L2655497-4, -5, -6, -7
Matrix Spike	Magnesium (Mg)-Total	MS-B	L2655497-1, -2
Matrix Spike	Magnesium (Mg)-Total	MS-B	L2655497-3
Matrix Spike	Magnesium (Mg)-Total	MS-B	L2655497-4, -5, -6, -7
Matrix Spike	Manganese (Mn)-Total	MS-B	L2655497-1, -2
Matrix Spike	Manganese (Mn)-Total	MS-B	L2655497-3
Matrix Spike	Manganese (Mn)-Total	MS-B	L2655497-4, -5, -6, -7
Matrix Spike	Potassium (K)-Total	MS-B	L2655497-3
Matrix Spike	Rubidium (Rb)-Total	MS-B	L2655497-3
Matrix Spike	Silicon (Si)-Total	MS-B	L2655497-1, -2
Matrix Spike	Silicon (Si)-Total	MS-B	L2655497-3
Matrix Spike	Silicon (Si)-Total	MS-B	L2655497-4, -5, -6, -7
Matrix Spike	Sodium (Na)-Total	MS-B	L2655497-1, -2
Matrix Spike	Sodium (Na)-Total	MS-B	L2655497-3
Matrix Spike	Strontium (Sr)-Total	MS-B	L2655497-1, -2
Matrix Spike	Strontium (Sr)-Total	MS-B	L2655497-3
Matrix Spike	Strontium (Sr)-Total	MS-B	L2655497-4, -5, -6, -7
Matrix Spike	Sulfur (S)-Total	MS-B	L2655497-3
Matrix Spike	Titanium (Ti)-Total	MS-B	L2655497-4, -5, -6, -7
Matrix Spike	Uranium (U)-Total	MS-B	L2655497-3
Matrix Spike	Phosphorus (P)-Total	MS-B	L2655497-1, -2, -3, -4, -5, -6, -7

Sample Parameter Qualifier key listed:

Qualifier	Description
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
HTC	Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).
HTD	Hold time exceeded for re-analysis or dilution, but initial testing was conducted within hold time.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
PEHT	Parameter Exceeded Recommended Holding Time Prior to Analysis

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ACIDITY-WT	Water	Acidity (as CaCO3)	APHA 2310 B - Potentiometric Titration
ALK-WT	Water	Alkalinity, Total (as CaCO3)	APHA 2320B

This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint.

BR-IC-N-WT	Water	Bromide in Water by IC	EPA 300.1 (mod)

Reference Information

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

CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)

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

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-FREE-CFA-WT	Water	Free Cyanide in water by CFA	ASTM 7237

This analysis is carried out using procedures adapted from ASTM Method 7237 "Free Cyanide with Flow Injection Analysis (FIA) Utilizing Gas Diffusion Separation and Amperometric Detection". Free cyanide is determined by in-line gas diffusion at pH 6 with final determination by colourimetric analysis.

CN-TOT-WT	Water	Cyanide, Total	ISO 14403-2

Total cyanide is determined by the combination of UV digestion and distillation. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

When using this method, high levels of thiocyanate in samples can cause false positives at ~1-2% of the thiocyanate concentration. For samples with detectable cyanide analyzed by this method, ALS recommends analysis for thiocyanate to check for this potential interference

CN-WAD-WT	Water	Cyanide, Weak Acid Diss	APHA 4500CN I-Weak acid Dist Colorimet

Weak acid dissociable cyanide (WAD) is determined by undergoing a distillation procedure. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

EC-SCREEN-WT	Water	Conductivity Screen (Internal Use Only)	APHA 2510

Qualitative analysis of conductivity where required during preparation of other tests - e.g. TDS, metals, etc.

EC-WT	Water	Conductivity	APHA 2510 B

Water samples can be measured directly by immersing the conductivity cell into the sample.

F-IC-N-WT	Water	Fluoride in Water by IC	EPA 300.1 (mod)

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

HARDNESS-CALC-WT	Water	Hardness	APHA 2340 B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-T-U-CVAF-VA	Water	Total Mercury in Water by CVAFS (Ultra)	EPA 1631 REV. E

This analysis is carried out using procedures adapted from Method 1631 Rev. E. by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to a purge and trap concentration step and final reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry.

MEHG-T-GCAF-VA	Water	Total Methylmercury in Water by GCAFS	EPA 1630 (mod)

This method follows Method 1630 of the US EPA. Samples are distilled under an inert gas flow to isolate methylmercury and minimize matrix interferences. The distillate is analyzed by aqueous phase ethylation, purge and trap, desorption and GC separation. The separated species are then pyrolized to elemental Hg and quantified by cold vapour atomic flourescence spectroscopy. Results are reported "as MeHg".

MET-D-CCMS-WP	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020B (mod)

Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

MET-T-CCMS-WT	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F

Reference Information

Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.

NO2-IC-WT	Water	Nitrite in Water by IC	EPA 300.1 (mod)

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

NO3-IC-WT	Water	Nitrate in Water by IC	EPA 300.1 (mod)

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

P-T-L-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS-L

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.

PH-WT	Water	pH	APHA 4500 H-Electrode

Water samples are analyzed directly by a calibrated pH meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days

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

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

SOLIDS-TDS-WT	Water	Total Dissolved Solids	APHA 2540C

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

SOLIDS-TSS-WT	Water	Suspended solids	APHA 2540 D-Gravimetric

A well-mixed sample is filtered through a weighed standard glass fibre filter and the residue retained is dried in an oven at 104–1°C for a minimum of four hours or until a constant weight is achieved.

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

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

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2655497 Report Date: 18-NOV-21

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ACIDITY-WT	**Water**							
Batch R5634867								
WG3646701-3 DUP		**L2655749-62**						
Acidity (as CaCO3)		14.2	14.6		mg/L	3.2	20	29-OCT-21
WG3646701-2 LCS								
Acidity (as CaCO3)			114.2		%		85-115	29-OCT-21
WG3646701-1 MB								
Acidity (as CaCO3)			<2.0		mg/L		2	29-OCT-21
Batch R5642018								
WG3650505-3 DUP		**L2655497-7**						
Acidity (as CaCO3)		8.2	8.4		mg/L	1.4	20	09-NOV-21
WG3650505-2 LCS								
Acidity (as CaCO3)			111.0		%		85-115	09-NOV-21
WG3650505-1 MB								
Acidity (as CaCO3)			<2.0		mg/L		2	09-NOV-21
ALK-WT	**Water**							
Batch R5629603								
WG3646554-4 DUP		**WG3646554-3**						
Alkalinity, Total (as CaCO3)		72.1	77.5		mg/L	7.2	20	27-OCT-21
WG3646554-2 LCS								
Alkalinity, Total (as CaCO3)			110.7		%		85-115	27-OCT-21
WG3646554-1 MB								
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	27-OCT-21
Batch R5630962								
WG3646552-4 DUP		**WG3646552-3**						
Alkalinity, Total (as CaCO3)		705	709		mg/L	0.6	20	27-OCT-21
WG3646552-2 LCS								
Alkalinity, Total (as CaCO3)			104.5		%		85-115	27-OCT-21
WG3646552-1 MB								
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	27-OCT-21
Batch R5630977								
WG3646553-4 DUP		**WG3646553-3**						
Alkalinity, Total (as CaCO3)		280	279		mg/L	0.4	20	27-OCT-21
WG3646553-2 LCS								
Alkalinity, Total (as CaCO3)			89.7		%		85-115	27-OCT-21
WG3646553-1 MB								
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	27-OCT-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ALK-WT	**Water**							
Batch R5630999								
WG3646555-4 DUP		**WG3646555-3**						
Alkalinity, Total (as CaCO3)		127	123		mg/L	2.5	20	27-OCT-21
WG3646555-2 LCS								
Alkalinity, Total (as CaCO3)			110.7		%		85-115	27-OCT-21
WG3646555-1 MB								
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	27-OCT-21
Batch R5632609								
WG3648006-4 DUP		**WG3648006-3**						
Alkalinity, Total (as CaCO3)		67.2	62.9		mg/L	6.6	20	28-OCT-21
WG3648006-2 LCS								
Alkalinity, Total (as CaCO3)			94.4		%		85-115	28-OCT-21
WG3648006-1 MB								
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	28-OCT-21
BR-IC-N-WT	**Water**							
Batch R5632492								
WG3647872-9 DUP		**L2655497-1**						
Bromide (Br)		<0.10	<0.10	RPD-NA	mg/L	N/A	20	28-OCT-21
WG3647872-7 LCS								
Bromide (Br)			98.4		%		85-115	28-OCT-21
WG3647872-6 MB								
Bromide (Br)			<0.10		mg/L		0.1	28-OCT-21
WG3647872-10 MS		**L2655497-1**						
Bromide (Br)			100.8		%		75-125	28-OCT-21
CL-IC-N-WT	**Water**							
Batch R5632492								
WG3647872-9 DUP		**L2655497-1**						
Chloride (Cl)		6.09	6.08		mg/L	0.0	20	28-OCT-21
WG3647872-7 LCS								
Chloride (Cl)			100.1		%		90-110	28-OCT-21
WG3647872-6 MB								
Chloride (Cl)			<0.50		mg/L		0.5	28-OCT-21
WG3647872-10 MS		**L2655497-1**						
Chloride (Cl)			101.5		%		75-125	28-OCT-21
CN-FREE-CFA-WT	**Water**							

Quality Control Report

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160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-FREE-CFA-WT	**Water**							
Batch R5633500								
WG3648574-14 DUP		**WG3648574-13**						
Cyanide, Free		<0.010	<0.010	RPD-NA	mg/L	N/A	20	29-OCT-21
WG3648574-19 DUP		**WG3648574-18**						
Cyanide, Free		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	29-OCT-21
WG3648574-12 LCS								
Cyanide, Free			94.4		%		80-120	29-OCT-21
WG3648574-17 LCS								
Cyanide, Free			98.3		%		80-120	29-OCT-21
WG3648574-11 MB								
Cyanide, Free			<0.0020		mg/L		0.002	29-OCT-21
WG3648574-16 MB								
Cyanide, Free			<0.0020		mg/L		0.002	29-OCT-21
WG3648574-15 MS		**WG3648574-13**						
Cyanide, Free			107.7		%		75-125	29-OCT-21
WG3648574-20 MS		**WG3648574-18**						
Cyanide, Free			111.1		%		75-125	29-OCT-21
CN-TOT-WT	**Water**							
Batch R5633500								
WG3648574-14 DUP		**WG3648574-13**						
Cyanide, Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	29-OCT-21
WG3648574-19 DUP		**WG3648574-18**						
Cyanide, Total		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	29-OCT-21
WG3648574-12 LCS								
Cyanide, Total			96.5		%		80-120	29-OCT-21
WG3648574-17 LCS								
Cyanide, Total			97.7		%		80-120	29-OCT-21
WG3648574-11 MB								
Cyanide, Total			<0.0020		mg/L		0.002	29-OCT-21
WG3648574-16 MB								
Cyanide, Total			<0.0020		mg/L		0.002	29-OCT-21
WG3648574-15 MS		**WG3648574-13**						
Cyanide, Total			108.7		%		70-130	29-OCT-21
WG3648574-20 MS		**WG3648574-18**						
Cyanide, Total			102.7		%		70-130	29-OCT-21
CN-WAD-WT	**Water**							

Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-WAD-WT	**Water**							
Batch R5633500								
WG3648574-14 DUP		**WG3648574-13**						
Cyanide, Weak Acid Diss		<0.010	<0.010	RPD-NA	mg/L	N/A	20	29-OCT-21
WG3648574-19 DUP		**WG3648574-18**						
Cyanide, Weak Acid Diss		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	29-OCT-21
WG3648574-12 LCS								
Cyanide, Weak Acid Diss			101.1		%		80-120	29-OCT-21
WG3648574-17 LCS								
Cyanide, Weak Acid Diss			102.1		%		80-120	29-OCT-21
WG3648574-11 MB								
Cyanide, Weak Acid Diss			<0.0020		mg/L		0.002	29-OCT-21
WG3648574-16 MB								
Cyanide, Weak Acid Diss			<0.0020		mg/L		0.002	29-OCT-21
WG3648574-15 MS		**WG3648574-13**						
Cyanide, Weak Acid Diss			110.4		%		75-125	29-OCT-21
WG3648574-20 MS		**WG3648574-18**						
Cyanide, Weak Acid Diss			108.8		%		75-125	29-OCT-21
EC-WT	**Water**							
Batch R5629603								
WG3646554-4 DUP		**WG3646554-3**						
Conductivity		2160	2190		umhos/cm	1.4	10	27-OCT-21
WG3646554-2 LCS								
Conductivity			99.2		%		90-110	27-OCT-21
WG3646554-1 MB								
Conductivity			<2.0		umhos/cm		2	27-OCT-21
Batch R5630962								
WG3646552-4 DUP		**WG3646552-3**						
Conductivity		2190	2190		umhos/cm	0.0	10	27-OCT-21
WG3646552-2 LCS								
Conductivity			98.9		%		90-110	27-OCT-21
WG3646552-1 MB								
Conductivity			<1.0		umhos/cm		1	27-OCT-21
Batch R5630977								
WG3646553-4 DUP		**WG3646553-3**						
Conductivity		1690	1690		umhos/cm	0.1	10	27-OCT-21
WG3646553-2 LCS								
Conductivity			99.6		%		90-110	27-OCT-21
WG3646553-1 MB								
Conductivity			<1.0		umhos/cm		1	27-OCT-21

Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
EC-WT	**Water**							
Batch R5630999								
WG3646555-4 DUP		**WG3646555-3**						
Conductivity		640	634		umhos/cm	0.9	10	27-OCT-21
WG3646555-2 LCS								
Conductivity			99.2		%		90-110	27-OCT-21
WG3646555-1 MB								
Conductivity			<1.0		umhos/cm		1	27-OCT-21
Batch R5632609								
WG3648006-4 DUP		**WG3648006-3**						
Conductivity		180	183		umhos/cm	1.5	10	28-OCT-21
WG3648006-2 LCS								
Conductivity			99.8		%		90-110	28-OCT-21
WG3648006-1 MB								
Conductivity			<2.0		umhos/cm		2	28-OCT-21
F-IC-N-WT	**Water**							
Batch R5632492								
WG3647872-9 DUP		**L2655497-1**						
Fluoride (F)		0.023	0.023		mg/L	0.4	20	28-OCT-21
WG3647872-7 LCS								
Fluoride (F)			102.3		%		90-110	28-OCT-21
WG3647872-6 MB								
Fluoride (F)			<0.020		mg/L		0.02	28-OCT-21
WG3647872-10 MS		**L2655497-1**						
Fluoride (F)			101.7		%		75-125	28-OCT-21
HG-T-U-CVAF-VA	**Water**							
Batch R5652727								
WG3660510-3 DUP		**L2655497-6**						
Mercury (Hg)-Total		0.00076	0.00075	RPD-NA	ug/L	N/A	20	17-NOV-21
WG3660510-2 LCS								
Mercury (Hg)-Total			111.9		%		80-120	17-NOV-21
WG3660510-1 MB								
Mercury (Hg)-Total			<0.00050		ug/L		0.0005	17-NOV-21
WG3660510-4 MS		**L2657480-4**						
Mercury (Hg)-Total			96.5		%		70-130	17-NOV-21
MEHG-T-GCAF-VA	**Water**							

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MEHG-T-GCAF-VA	**Water**							
Batch R5633769								
WG3649782-2 DUP		**L2655497-1**						
Methylmercury (as MeHg)-Total		0.000311	0.000310		ug/L	0.3	20	31-OCT-21
WG3649782-3 LCS								
Methylmercury (as MeHg)-Total			82.4		%		70-130	31-OCT-21
WG3649782-1 MB								
Methylmercury (as MeHg)-Total			<0.000020		ug/L		0.00002	31-OCT-21
WG3649782-4 MS		**L2655298-1**						
Methylmercury (as MeHg)-Total			92.1		%		70-130	31-OCT-21
MET-D-CCMS-WP	**Water**							
Batch R5633788								
WG3648080-4 DUP		**WG3648080-3**						
Aluminum (Al)-Dissolved		0.0032	0.0043	J	mg/L	0.0012	0.002	29-OCT-21
Antimony (Sb)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	29-OCT-21
Arsenic (As)-Dissolved		0.00208	0.00210		mg/L	0.6	20	29-OCT-21
Barium (Ba)-Dissolved		0.0460	0.0457		mg/L	0.7	20	29-OCT-21
Beryllium (Be)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	29-OCT-21
Bismuth (Bi)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	29-OCT-21
Boron (B)-Dissolved		0.054	0.054		mg/L	0.6	20	29-OCT-21
Cadmium (Cd)-Dissolved		<0.0000050	<0.000005(	RPD-NA	mg/L	N/A	20	29-OCT-21
Calcium (Ca)-Dissolved		38.8	37.7		mg/L	2.9	20	29-OCT-21
Cesium (Cs)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	29-OCT-21
Chromium (Cr)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	29-OCT-21
Cobalt (Co)-Dissolved		0.00012	0.00012		mg/L	1.3	20	29-OCT-21
Copper (Cu)-Dissolved		0.00069	0.00066		mg/L	4.8	20	29-OCT-21
Iron (Fe)-Dissolved		0.019	0.024	J	mg/L	0.005	0.02	29-OCT-21
Lead (Pb)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	29-OCT-21
Lithium (Li)-Dissolved		0.0112	0.0109		mg/L	2.7	20	29-OCT-21
Magnesium (Mg)-Dissolved		30.5	30.8		mg/L	1.2	20	29-OCT-21
Manganese (Mn)-Dissolved		0.00121	0.00168	G	mg/L	32	20	29-OCT-21
Molybdenum (Mo)-Dissolved		0.000671	0.000653		mg/L	2.7	20	29-OCT-21
Nickel (Ni)-Dissolved		0.00111	0.00108		mg/L	2.9	20	29-OCT-21
Phosphorus (P)-Dissolved		<0.030	<0.030	RPD-NA	mg/L	N/A	20	29-OCT-21
Potassium (K)-Dissolved		3.10	3.08		mg/L	0.4	20	29-OCT-21
Rubidium (Rb)-Dissolved		0.00218	0.00220		mg/L	0.7	20	29-OCT-21
Selenium (Se)-Dissolved		0.000146	0.000165		mg/L	12	20	29-OCT-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5633788								
WG3648080-4 DUP		**WG3648080-3**						
Silicon (Si)-Dissolved		1.17	1.11		mg/L	5.0	20	29-OCT-21
Silver (Ag)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	29-OCT-21
Sodium (Na)-Dissolved		10.5	10.5		mg/L	0.5	20	29-OCT-21
Strontium (Sr)-Dissolved		0.148	0.146		mg/L	1.5	20	29-OCT-21
Sulfur (S)-Dissolved		3.79	3.72		mg/L	1.9	20	29-OCT-21
Tellurium (Te)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	29-OCT-21
Thallium (Tl)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	29-OCT-21
Thorium (Th)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	29-OCT-21
Tin (Sn)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	29-OCT-21
Titanium (Ti)-Dissolved		0.00049	0.00083	J	mg/L	0.00034	0.0006	29-OCT-21
Tungsten (W)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	29-OCT-21
Uranium (U)-Dissolved		0.000385	0.000386		mg/L	0.4	20	29-OCT-21
Vanadium (V)-Dissolved		0.00051	0.00051		mg/L	0.5	20	29-OCT-21
Zinc (Zn)-Dissolved		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	29-OCT-21
Zirconium (Zr)-Dissolved		<0.00020	0.00021	RPD-NA	mg/L	N/A	20	29-OCT-21
WG3648080-2 LCS								
Aluminum (Al)-Dissolved			107.6		%		80-120	29-OCT-21
Antimony (Sb)-Dissolved			106.6		%		80-120	29-OCT-21
Arsenic (As)-Dissolved			106.4		%		80-120	29-OCT-21
Barium (Ba)-Dissolved			105.4		%		80-120	29-OCT-21
Beryllium (Be)-Dissolved			104.2		%		80-120	29-OCT-21
Bismuth (Bi)-Dissolved			99.1		%		80-120	29-OCT-21
Boron (B)-Dissolved			102.8		%		80-120	29-OCT-21
Cadmium (Cd)-Dissolved			105.7		%		80-120	29-OCT-21
Calcium (Ca)-Dissolved			101.9		%		80-120	29-OCT-21
Cesium (Cs)-Dissolved			104.1		%		80-120	29-OCT-21
Chromium (Cr)-Dissolved			105.5		%		80-120	29-OCT-21
Cobalt (Co)-Dissolved			103.6		%		80-120	29-OCT-21
Copper (Cu)-Dissolved			103.4		%		80-120	29-OCT-21
Iron (Fe)-Dissolved			101.0		%		80-120	29-OCT-21
Lead (Pb)-Dissolved			99.7		%		80-120	29-OCT-21
Lithium (Li)-Dissolved			107.8		%		80-120	29-OCT-21
Magnesium (Mg)-Dissolved			119.8		%		80-120	29-OCT-21

Quality Control Report

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Mississauga ON L4Z 3K7
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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5633788								
WG3648080-2 LCS								
Manganese (Mn)-Dissolved			106.0		%		80-120	29-OCT-21
Molybdenum (Mo)-Dissolved			107.3		%		80-120	29-OCT-21
Nickel (Ni)-Dissolved			104.8		%		80-120	29-OCT-21
Phosphorus (P)-Dissolved			109.3		%		80-120	29-OCT-21
Potassium (K)-Dissolved			102.9		%		80-120	29-OCT-21
Rubidium (Rb)-Dissolved			101.7		%		80-120	29-OCT-21
Selenium (Se)-Dissolved			104.3		%		80-120	29-OCT-21
Silicon (Si)-Dissolved			110.0		%		80-120	29-OCT-21
Silver (Ag)-Dissolved			105.6		%		80-120	29-OCT-21
Sodium (Na)-Dissolved			111.7		%		80-120	29-OCT-21
Strontium (Sr)-Dissolved			106.0		%		80-120	29-OCT-21
Sulfur (S)-Dissolved			108.5		%		80-120	29-OCT-21
Tellurium (Te)-Dissolved			104.7		%		80-120	29-OCT-21
Thallium (Tl)-Dissolved			103.0		%		80-120	29-OCT-21
Thorium (Th)-Dissolved			89.2		%		80-120	29-OCT-21
Tin (Sn)-Dissolved			105.0		%		80-120	29-OCT-21
Titanium (Ti)-Dissolved			103.8		%		80-120	29-OCT-21
Tungsten (W)-Dissolved			103.8		%		80-120	29-OCT-21
Uranium (U)-Dissolved			89.1		%		80-120	29-OCT-21
Vanadium (V)-Dissolved			105.7		%		80-120	29-OCT-21
Zinc (Zn)-Dissolved			107.3		%		80-120	29-OCT-21
Zirconium (Zr)-Dissolved			98.2		%		80-120	29-OCT-21
WG3648080-1 MB								
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	29-OCT-21
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	29-OCT-21
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	29-OCT-21
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	29-OCT-21
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	29-OCT-21
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	29-OCT-21
Boron (B)-Dissolved			<0.010		mg/L		0.01	29-OCT-21
Cadmium (Cd)-Dissolved			<0.000005(		mg/L		0.000005	29-OCT-21
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	29-OCT-21
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	29-OCT-21
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	29-OCT-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5633788								
WG3648080-1 MB								
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	29-OCT-21
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	29-OCT-21
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	29-OCT-21
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	29-OCT-21
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	29-OCT-21
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	29-OCT-21
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	29-OCT-21
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	29-OCT-21
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	29-OCT-21
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	29-OCT-21
Potassium (K)-Dissolved			<0.050		mg/L		0.05	29-OCT-21
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	29-OCT-21
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	29-OCT-21
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	29-OCT-21
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	29-OCT-21
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	29-OCT-21
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	29-OCT-21
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	29-OCT-21
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	29-OCT-21
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	29-OCT-21
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	29-OCT-21
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	29-OCT-21
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	29-OCT-21
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	29-OCT-21
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	29-OCT-21
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	29-OCT-21
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	29-OCT-21
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	29-OCT-21
WG3648080-5 MS		**WG3648080-3**						
Aluminum (Al)-Dissolved			100.4		%		70-130	29-OCT-21
Antimony (Sb)-Dissolved			103.8		%		70-130	29-OCT-21
Arsenic (As)-Dissolved			102.7		%		70-130	29-OCT-21
Barium (Ba)-Dissolved			N/A	MS-B	%		-	29-OCT-21
Beryllium (Be)-Dissolved			96.6		%		70-130	29-OCT-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5633788								
WG3648080-5 MS		**WG3648080-3**						
Bismuth (Bi)-Dissolved			82.9		%		70-130	29-OCT-21
Boron (B)-Dissolved			82.7		%		70-130	29-OCT-21
Cadmium (Cd)-Dissolved			100.0		%		70-130	29-OCT-21
Calcium (Ca)-Dissolved			N/A	MS-B	%		-	29-OCT-21
Cesium (Cs)-Dissolved			99.6		%		70-130	29-OCT-21
Chromium (Cr)-Dissolved			97.7		%		70-130	29-OCT-21
Cobalt (Co)-Dissolved			96.4		%		70-130	29-OCT-21
Copper (Cu)-Dissolved			92.0		%		70-130	29-OCT-21
Iron (Fe)-Dissolved			97.4		%		70-130	29-OCT-21
Lead (Pb)-Dissolved			89.0		%		70-130	29-OCT-21
Lithium (Li)-Dissolved			95.1		%		70-130	29-OCT-21
Magnesium (Mg)-Dissolved			N/A	MS-B	%		-	29-OCT-21
Manganese (Mn)-Dissolved			99.3		%		70-130	29-OCT-21
Molybdenum (Mo)-Dissolved			99.96		%		70-130	29-OCT-21
Nickel (Ni)-Dissolved			94.0		%		70-130	29-OCT-21
Phosphorus (P)-Dissolved			106.8		%		70-130	29-OCT-21
Potassium (K)-Dissolved			98.6		%		70-130	29-OCT-21
Rubidium (Rb)-Dissolved			97.8		%		70-130	29-OCT-21
Selenium (Se)-Dissolved			107.1		%		70-130	29-OCT-21
Silicon (Si)-Dissolved			97.0		%		70-130	29-OCT-21
Silver (Ag)-Dissolved			97.8		%		70-130	29-OCT-21
Sodium (Na)-Dissolved			N/A	MS-B	%		-	29-OCT-21
Strontium (Sr)-Dissolved			N/A	MS-B	%		-	29-OCT-21
Sulfur (S)-Dissolved			99.6		%		70-130	29-OCT-21
Tellurium (Te)-Dissolved			102.0		%		70-130	29-OCT-21
Thallium (Tl)-Dissolved			88.6		%		70-130	29-OCT-21
Thorium (Th)-Dissolved			85.7		%		70-130	29-OCT-21
Tin (Sn)-Dissolved			98.0		%		70-130	29-OCT-21
Titanium (Ti)-Dissolved			98.2		%		70-130	29-OCT-21
Tungsten (W)-Dissolved			98.7		%		70-130	29-OCT-21
Uranium (U)-Dissolved			82.5		%		70-130	29-OCT-21
Vanadium (V)-Dissolved			100.3		%		70-130	29-OCT-21
Zinc (Zn)-Dissolved			97.9		%		70-130	29-OCT-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5633788								
WG3648080-5 MS		**WG3648080-3**						
Zirconium (Zr)-Dissolved			100.8		%		70-130	29-OCT-21
MET-T-CCMS-WT	**Water**							
Batch R5629588								
WG3646230-4 DUP		**WG3646230-3**						
Aluminum (Al)-Total		0.243	0.243		mg/L	0.1	20	27-OCT-21
Antimony (Sb)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	27-OCT-21
Arsenic (As)-Total		0.00093	0.00096		mg/L	3.2	20	27-OCT-21
Barium (Ba)-Total		0.00624	0.00623		mg/L	0.2	20	27-OCT-21
Beryllium (Be)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	27-OCT-21
Bismuth (Bi)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	27-OCT-21
Boron (B)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	27-OCT-21
Cadmium (Cd)-Total		0.0000108	0.0000132	J	mg/L	0.0000024	0.00001	27-OCT-21
Calcium (Ca)-Total		15.0	14.4		mg/L	4.1	20	27-OCT-21
Chromium (Cr)-Total		0.00071	0.00078		mg/L	8.8	20	27-OCT-21
Cesium (Cs)-Total		0.000013	0.000011		mg/L	13	20	27-OCT-21
Cobalt (Co)-Total		0.00017	0.00019		mg/L	12	20	27-OCT-21
Copper (Cu)-Total		0.00093	0.00097		mg/L	3.2	20	27-OCT-21
Iron (Fe)-Total		0.644	0.638		mg/L	0.8	20	27-OCT-21
Lead (Pb)-Total		0.000182	0.000184		mg/L	1.4	20	27-OCT-21
Lithium (Li)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	27-OCT-21
Magnesium (Mg)-Total		4.13	4.38		mg/L	5.8	20	27-OCT-21
Manganese (Mn)-Total		0.0497	0.0507		mg/L	1.9	20	27-OCT-21
Molybdenum (Mo)-Total		0.000055	0.000063		mg/L	13	20	27-OCT-21
Nickel (Ni)-Total		0.00077	0.00078		mg/L	1.7	20	27-OCT-21
Phosphorus (P)-Total		<0.050	<0.050	RPD-NA	mg/L	N/A	20	27-OCT-21
Potassium (K)-Total		0.356	0.352		mg/L	1.3	20	27-OCT-21
Rubidium (Rb)-Total		0.00129	0.00124		mg/L	4.6	20	27-OCT-21
Selenium (Se)-Total		0.000148	0.000154		mg/L	4.4	20	27-OCT-21
Silicon (Si)-Total		2.61	2.54		mg/L	2.6	20	27-OCT-21
Silver (Ag)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	27-OCT-21
Sodium (Na)-Total		4.07	4.14		mg/L	1.9	20	27-OCT-21
Strontium (Sr)-Total		0.0284	0.0283		mg/L	0.5	20	27-OCT-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5629588								
WG3646230-4 DUP		**WG3646230-3**						
Sulfur (S)-Total		<0.50	<0.50	RPD-NA	mg/L	N/A	20	27-OCT-21
Thallium (Tl)-Total		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	27-OCT-21
Tellurium (Te)-Total		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	27-OCT-21
Thorium (Th)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	27-OCT-21
Tin (Sn)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	27-OCT-21
Titanium (Ti)-Total		0.00767	0.00750		mg/L	2.4	20	27-OCT-21
Tungsten (W)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	27-OCT-21
Uranium (U)-Total		0.000033	0.000033		mg/L	0.9	20	27-OCT-21
Vanadium (V)-Total		0.00064	0.00063		mg/L	2.0	20	27-OCT-21
Zinc (Zn)-Total		0.0035	0.0036		mg/L	3.2	20	27-OCT-21
Zirconium (Zr)-Total		0.00028	0.00031		mg/L	10	20	27-OCT-21
WG3646233-4 DUP		**WG3646233-3**						
Aluminum (Al)-Total		0.0554	0.0562		mg/L	1.4	20	27-OCT-21
Antimony (Sb)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	27-OCT-21
Arsenic (As)-Total		0.00046	0.00050		mg/L	8.0	20	27-OCT-21
Barium (Ba)-Total		0.00687	0.00702		mg/L	2.2	20	27-OCT-21
Beryllium (Be)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	27-OCT-21
Bismuth (Bi)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	27-OCT-21
Boron (B)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	27-OCT-21
Cadmium (Cd)-Total		<0.0000050	0.0000060	RPD-NA	mg/L	N/A	20	27-OCT-21
Calcium (Ca)-Total		7.95	7.78		mg/L	2.2	20	27-OCT-21
Chromium (Cr)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	27-OCT-21
Cesium (Cs)-Total		0.000019	0.000021		mg/L	9.2	20	27-OCT-21
Cobalt (Co)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	27-OCT-21
Copper (Cu)-Total		0.00223	0.00207		mg/L	7.7	20	27-OCT-21
Iron (Fe)-Total		0.250	0.262		mg/L	4.4	20	27-OCT-21
Lead (Pb)-Total		0.000170	0.000172		mg/L	1.1	20	27-OCT-21
Lithium (Li)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	27-OCT-21
Magnesium (Mg)-Total		1.39	1.42		mg/L	2.1	20	27-OCT-21
Manganese (Mn)-Total		0.0241	0.0245		mg/L	1.9	20	27-OCT-21
Molybdenum (Mo)-Total		0.000211	0.000231		mg/L	9.1	20	27-OCT-21
Nickel (Ni)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	27-OCT-21
Phosphorus (P)-Total		<0.050	<0.050	RPD-NA	mg/L	N/A	20	27-OCT-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5629588								
WG3646233-4 DUP		**WG3646233-3**						
Potassium (K)-Total		0.775	0.790		mg/L	2.0	20	27-OCT-21
Rubidium (Rb)-Total		0.00220	0.00243		mg/L	9.7	20	27-OCT-21
Selenium (Se)-Total		0.000119	0.000106		mg/L	11	20	27-OCT-21
Silicon (Si)-Total		1.60	1.64		mg/L	2.6	20	27-OCT-21
Silver (Ag)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	27-OCT-21
Sodium (Na)-Total		1.22	1.23		mg/L	1.1	20	27-OCT-21
Strontium (Sr)-Total		0.0178	0.0181		mg/L	1.6	20	27-OCT-21
Sulfur (S)-Total		0.64	0.64		mg/L	0.0	20	27-OCT-21
Thallium (Tl)-Total		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	27-OCT-21
Tellurium (Te)-Total		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	27-OCT-21
Thorium (Th)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	27-OCT-21
Tin (Sn)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	27-OCT-21
Titanium (Ti)-Total		0.00160	0.00165		mg/L	3.5	20	27-OCT-21
Tungsten (W)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	27-OCT-21
Uranium (U)-Total		0.000031	0.000032		mg/L	4.5	20	27-OCT-21
Vanadium (V)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	27-OCT-21
Zinc (Zn)-Total		<0.0030	<0.0030	RPD-NA	mg/L	N/A	20	27-OCT-21
Zirconium (Zr)-Total		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	27-OCT-21
WG3646235-4 DUP		**WG3646235-3**						
Aluminum (Al)-Total		0.661	0.661		mg/L	0.0	20	27-OCT-21
Antimony (Sb)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	27-OCT-21
Arsenic (As)-Total		0.00135	0.00136		mg/L	1.4	20	27-OCT-21
Barium (Ba)-Total		0.00906	0.00871		mg/L	3.9	20	27-OCT-21
Beryllium (Be)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	27-OCT-21
Bismuth (Bi)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	27-OCT-21
Boron (B)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	27-OCT-21
Cadmium (Cd)-Total		0.0000438	0.0000422		mg/L	3.7	20	27-OCT-21
Calcium (Ca)-Total		10.9	11.4		mg/L	4.3	20	27-OCT-21
Chromium (Cr)-Total		0.00157	0.00162		mg/L	3.2	20	27-OCT-21
Cesium (Cs)-Total		0.000040	0.000040		mg/L	0.2	20	27-OCT-21
Cobalt (Co)-Total		0.00037	0.00036		mg/L	1.0	20	27-OCT-21
Copper (Cu)-Total		0.00211	0.00211		mg/L	0.4	20	27-OCT-21
Iron (Fe)-Total		1.16	1.19		mg/L	2.4	20	27-OCT-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5629588								
WG3646235-4 DUP		**WG3646235-3**						
Lead (Pb)-Total		0.000465	0.000465		mg/L	0.0	20	27-OCT-21
Lithium (Li)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	27-OCT-21
Magnesium (Mg)-Total		2.89	2.82		mg/L	2.5	20	27-OCT-21
Manganese (Mn)-Total		0.0669	0.0677		mg/L	1.1	20	27-OCT-21
Molybdenum (Mo)-Total		<0.000050	0.000053	RPD-NA	mg/L	N/A	20	27-OCT-21
Nickel (Ni)-Total		0.00144	0.00145		mg/L	0.4	20	27-OCT-21
Phosphorus (P)-Total		<0.050	<0.050	RPD-NA	mg/L	N/A	20	27-OCT-21
Potassium (K)-Total		0.274	0.278		mg/L	1.4	20	27-OCT-21
Rubidium (Rb)-Total		0.00135	0.00138		mg/L	2.1	20	27-OCT-21
Selenium (Se)-Total		0.000187	0.000187		mg/L	0.3	20	27-OCT-21
Silicon (Si)-Total		2.83	2.81		mg/L	0.4	20	27-OCT-21
Silver (Ag)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	27-OCT-21
Sodium (Na)-Total		1.08	1.04		mg/L	4.3	20	27-OCT-21
Strontium (Sr)-Total		0.0245	0.0252		mg/L	2.8	20	27-OCT-21
Sulfur (S)-Total		<0.50	<0.50	RPD-NA	mg/L	N/A	20	27-OCT-21
Thallium (Tl)-Total		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	27-OCT-21
Tellurium (Te)-Total		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	27-OCT-21
Thorium (Th)-Total		0.00013	0.00013		mg/L	2.8	20	27-OCT-21
Tin (Sn)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	27-OCT-21
Titanium (Ti)-Total		0.0216	0.0232		mg/L	7.3	20	27-OCT-21
Tungsten (W)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	27-OCT-21
Uranium (U)-Total		0.000061	0.000061		mg/L	1.0	20	27-OCT-21
Vanadium (V)-Total		0.00135	0.00135		mg/L	0.1	20	27-OCT-21
Zinc (Zn)-Total		0.0080	0.0078		mg/L	2.5	20	27-OCT-21
Zirconium (Zr)-Total		0.00070	0.00073		mg/L	4.7	20	27-OCT-21
WG3646230-2 LCS								
Aluminum (Al)-Total			102.7		%		80-120	27-OCT-21
Antimony (Sb)-Total			103.7		%		80-120	27-OCT-21
Arsenic (As)-Total			104.3		%		80-120	27-OCT-21
Barium (Ba)-Total			104.8		%		80-120	27-OCT-21
Beryllium (Be)-Total			97.1		%		80-120	27-OCT-21
Bismuth (Bi)-Total			98.1		%		80-120	27-OCT-21
Boron (B)-Total			93.2		%		80-120	27-OCT-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5629588								
WG3646230-2 LCS								
Cadmium (Cd)-Total			104.3		%		80-120	27-OCT-21
Calcium (Ca)-Total			97.6		%		80-120	27-OCT-21
Chromium (Cr)-Total			103.9		%		80-120	27-OCT-21
Cesium (Cs)-Total			97.4		%		80-120	27-OCT-21
Cobalt (Co)-Total			104.3		%		80-120	27-OCT-21
Copper (Cu)-Total			102.5		%		80-120	27-OCT-21
Iron (Fe)-Total			103.6		%		80-120	27-OCT-21
Lead (Pb)-Total			100.4		%		80-120	27-OCT-21
Lithium (Li)-Total			90.2		%		80-120	27-OCT-21
Magnesium (Mg)-Total			106.1		%		80-120	27-OCT-21
Manganese (Mn)-Total			105.3		%		80-120	27-OCT-21
Molybdenum (Mo)-Total			100.6		%		80-120	27-OCT-21
Nickel (Ni)-Total			102.5		%		80-120	27-OCT-21
Phosphorus (P)-Total			101.7		%		70-130	27-OCT-21
Potassium (K)-Total			99.4		%		80-120	27-OCT-21
Rubidium (Rb)-Total			107.9		%		80-120	27-OCT-21
Selenium (Se)-Total			107.0		%		80-120	27-OCT-21
Silicon (Si)-Total			106.2		%		60-140	27-OCT-21
Silver (Ag)-Total			100.8		%		80-120	27-OCT-21
Sodium (Na)-Total			105.7		%		80-120	28-OCT-21
Strontium (Sr)-Total			103.0		%		80-120	27-OCT-21
Sulfur (S)-Total			98.4		%		80-120	27-OCT-21
Thallium (Tl)-Total			100.6		%		80-120	27-OCT-21
Tellurium (Te)-Total			99.5		%		80-120	27-OCT-21
Thorium (Th)-Total			100.1		%		80-120	27-OCT-21
Tin (Sn)-Total			101.7		%		80-120	27-OCT-21
Titanium (Ti)-Total			100.8		%		80-120	27-OCT-21
Tungsten (W)-Total			98.6		%		80-120	27-OCT-21
Uranium (U)-Total			101.1		%		80-120	27-OCT-21
Vanadium (V)-Total			104.0		%		80-120	27-OCT-21
Zinc (Zn)-Total			98.2		%		80-120	27-OCT-21
Zirconium (Zr)-Total			95.6		%		80-120	27-OCT-21
WG3646233-2 LCS								
Aluminum (Al)-Total			103.1		%		80-120	27-OCT-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5629588								
WG3646233-2 LCS								
Antimony (Sb)-Total			102.0		%		80-120	27-OCT-21
Arsenic (As)-Total			103.3		%		80-120	27-OCT-21
Barium (Ba)-Total			101.3		%		80-120	27-OCT-21
Beryllium (Be)-Total			100.4		%		80-120	27-OCT-21
Bismuth (Bi)-Total			99.4		%		80-120	27-OCT-21
Boron (B)-Total			95.6		%		80-120	27-OCT-21
Cadmium (Cd)-Total			102.6		%		80-120	27-OCT-21
Calcium (Ca)-Total			99.9		%		80-120	27-OCT-21
Chromium (Cr)-Total			101.7		%		80-120	27-OCT-21
Cesium (Cs)-Total			95.4		%		80-120	27-OCT-21
Cobalt (Co)-Total			101.2		%		80-120	27-OCT-21
Copper (Cu)-Total			101.0		%		80-120	27-OCT-21
Iron (Fe)-Total			99.9		%		80-120	27-OCT-21
Lead (Pb)-Total			98.0		%		80-120	27-OCT-21
Lithium (Li)-Total			97.5		%		80-120	27-OCT-21
Magnesium (Mg)-Total			107.9		%		80-120	27-OCT-21
Manganese (Mn)-Total			103.2		%		80-120	27-OCT-21
Molybdenum (Mo)-Total			99.1		%		80-120	27-OCT-21
Nickel (Ni)-Total			100.9		%		80-120	27-OCT-21
Phosphorus (P)-Total			109.2		%		70-130	27-OCT-21
Potassium (K)-Total			99.7		%		80-120	27-OCT-21
Rubidium (Rb)-Total			102.3		%		80-120	27-OCT-21
Selenium (Se)-Total			102.9		%		80-120	27-OCT-21
Silicon (Si)-Total			103.0		%		60-140	27-OCT-21
Silver (Ag)-Total			99.9		%		80-120	27-OCT-21
Sodium (Na)-Total			101.6		%		80-120	27-OCT-21
Strontium (Sr)-Total			101.3		%		80-120	27-OCT-21
Sulfur (S)-Total			93.8		%		80-120	27-OCT-21
Thallium (Tl)-Total			99.0		%		80-120	27-OCT-21
Tellurium (Te)-Total			99.5		%		80-120	27-OCT-21
Thorium (Th)-Total			97.4		%		80-120	27-OCT-21
Tin (Sn)-Total			98.9		%		80-120	27-OCT-21
Titanium (Ti)-Total			99.2		%		80-120	27-OCT-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5629588								
WG3646233-2 LCS								
Tungsten (W)-Total			96.2		%		80-120	27-OCT-21
Uranium (U)-Total			99.3		%		80-120	27-OCT-21
Vanadium (V)-Total			101.9		%		80-120	27-OCT-21
Zinc (Zn)-Total			95.2		%		80-120	27-OCT-21
Zirconium (Zr)-Total			95.6		%		80-120	27-OCT-21
WG3646235-2 LCS								
Aluminum (Al)-Total			104.5		%		80-120	27-OCT-21
Antimony (Sb)-Total			103.4		%		80-120	27-OCT-21
Arsenic (As)-Total			104.6		%		80-120	27-OCT-21
Barium (Ba)-Total			98.8		%		80-120	27-OCT-21
Beryllium (Be)-Total			99.1		%		80-120	27-OCT-21
Bismuth (Bi)-Total			97.5		%		80-120	27-OCT-21
Boron (B)-Total			96.1		%		80-120	27-OCT-21
Cadmium (Cd)-Total			100.5		%		80-120	27-OCT-21
Calcium (Ca)-Total			101.3		%		80-120	27-OCT-21
Chromium (Cr)-Total			102.3		%		80-120	27-OCT-21
Cesium (Cs)-Total			100.0		%		80-120	27-OCT-21
Cobalt (Co)-Total			103.4		%		80-120	27-OCT-21
Copper (Cu)-Total			102.4		%		80-120	27-OCT-21
Iron (Fe)-Total			103.2		%		80-120	27-OCT-21
Lead (Pb)-Total			100.5		%		80-120	27-OCT-21
Lithium (Li)-Total			95.2		%		80-120	27-OCT-21
Magnesium (Mg)-Total			109.2		%		80-120	27-OCT-21
Manganese (Mn)-Total			102.6		%		80-120	27-OCT-21
Molybdenum (Mo)-Total			101.9		%		80-120	27-OCT-21
Nickel (Ni)-Total			102.9		%		80-120	27-OCT-21
Phosphorus (P)-Total			106.5		%		70-130	27-OCT-21
Potassium (K)-Total			100.6		%		80-120	27-OCT-21
Rubidium (Rb)-Total			108.8		%		80-120	27-OCT-21
Selenium (Se)-Total			105.3		%		80-120	27-OCT-21
Silicon (Si)-Total			103.2		%		60-140	27-OCT-21
Silver (Ag)-Total			101.3		%		80-120	27-OCT-21
Sodium (Na)-Total			105.8		%		80-120	27-OCT-21
Strontium (Sr)-Total			103.9		%		80-120	27-OCT-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5629588								
WG3646235-2 LCS								
Sulfur (S)-Total			93.4		%		80-120	27-OCT-21
Thallium (Tl)-Total			99.4		%		80-120	27-OCT-21
Tellurium (Te)-Total			101.7		%		80-120	27-OCT-21
Thorium (Th)-Total			99.97		%		80-120	27-OCT-21
Tin (Sn)-Total			100.9		%		80-120	27-OCT-21
Titanium (Ti)-Total			99.5		%		80-120	27-OCT-21
Tungsten (W)-Total			96.6		%		80-120	27-OCT-21
Uranium (U)-Total			102.4		%		80-120	27-OCT-21
Vanadium (V)-Total			103.6		%		80-120	27-OCT-21
Zinc (Zn)-Total			100.2		%		80-120	27-OCT-21
Zirconium (Zr)-Total			97.0		%		80-120	27-OCT-21
WG3646230-1 MB								
Aluminum (Al)-Total			<0.0050		mg/L		0.005	27-OCT-21
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	27-OCT-21
Arsenic (As)-Total			<0.00010		mg/L		0.0001	27-OCT-21
Barium (Ba)-Total			<0.00010		mg/L		0.0001	27-OCT-21
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	27-OCT-21
Bismuth (Bi)-Total			<0.000050		mg/L		0.00005	27-OCT-21
Boron (B)-Total			<0.010		mg/L		0.01	27-OCT-21
Cadmium (Cd)-Total			<0.000005C		mg/L		0.000005	27-OCT-21
Calcium (Ca)-Total			<0.050		mg/L		0.05	27-OCT-21
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	27-OCT-21
Cesium (Cs)-Total			<0.000010		mg/L		0.00001	27-OCT-21
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	27-OCT-21
Copper (Cu)-Total			<0.00050		mg/L		0.0005	27-OCT-21
Iron (Fe)-Total			<0.010		mg/L		0.01	27-OCT-21
Lead (Pb)-Total			<0.000050		mg/L		0.00005	27-OCT-21
Lithium (Li)-Total			<0.0010		mg/L		0.001	27-OCT-21
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	27-OCT-21
Manganese (Mn)-Total			<0.00050		mg/L		0.0005	27-OCT-21
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	27-OCT-21
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	27-OCT-21
Phosphorus (P)-Total			<0.050		mg/L		0.05	27-OCT-21
Potassium (K)-Total			<0.050		mg/L		0.05	27-OCT-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5629588								
WG3646230-1 MB								
Rubidium (Rb)-Total			<0.00020		mg/L		0.0002	27-OCT-21
Selenium (Se)-Total			<0.000050		mg/L		0.00005	27-OCT-21
Silicon (Si)-Total			<0.10		mg/L		0.1	27-OCT-21
Silver (Ag)-Total			<0.000050		mg/L		0.00005	27-OCT-21
Sodium (Na)-Total			<0.050		mg/L		0.05	27-OCT-21
Strontium (Sr)-Total			<0.0010		mg/L		0.001	27-OCT-21
Sulfur (S)-Total			<0.50		mg/L		0.5	27-OCT-21
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	27-OCT-21
Tellurium (Te)-Total			<0.00020		mg/L		0.0002	27-OCT-21
Thorium (Th)-Total			<0.00010		mg/L		0.0001	27-OCT-21
Tin (Sn)-Total			<0.00010		mg/L		0.0001	27-OCT-21
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	27-OCT-21
Tungsten (W)-Total			<0.00010		mg/L		0.0001	27-OCT-21
Uranium (U)-Total			<0.000010		mg/L		0.00001	27-OCT-21
Vanadium (V)-Total			<0.00050		mg/L		0.0005	27-OCT-21
Zinc (Zn)-Total			<0.0030		mg/L		0.003	27-OCT-21
Zirconium (Zr)-Total			<0.00020		mg/L		0.0002	27-OCT-21
WG3646233-1 MB								
Aluminum (Al)-Total			<0.0050		mg/L		0.005	27-OCT-21
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	27-OCT-21
Arsenic (As)-Total			<0.00010		mg/L		0.0001	27-OCT-21
Barium (Ba)-Total			<0.00010		mg/L		0.0001	27-OCT-21
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	27-OCT-21
Bismuth (Bi)-Total			<0.000050		mg/L		0.00005	27-OCT-21
Boron (B)-Total			<0.010		mg/L		0.01	27-OCT-21
Cadmium (Cd)-Total			<0.000005(		mg/L		0.000005	27-OCT-21
Calcium (Ca)-Total			<0.050		mg/L		0.05	27-OCT-21
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	27-OCT-21
Cesium (Cs)-Total			<0.000010		mg/L		0.00001	27-OCT-21
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	27-OCT-21
Copper (Cu)-Total			<0.00050		mg/L		0.0005	27-OCT-21
Iron (Fe)-Total			<0.010		mg/L		0.01	27-OCT-21
Lead (Pb)-Total			<0.000050		mg/L		0.00005	27-OCT-21
Lithium (Li)-Total			<0.0010		mg/L		0.001	27-OCT-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5629588								
WG3646233-1 MB								
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	27-OCT-21
Manganese (Mn)-Total			<0.00050		mg/L		0.0005	27-OCT-21
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	27-OCT-21
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	27-OCT-21
Phosphorus (P)-Total			<0.050		mg/L		0.05	27-OCT-21
Potassium (K)-Total			<0.050		mg/L		0.05	27-OCT-21
Rubidium (Rb)-Total			<0.00020		mg/L		0.0002	27-OCT-21
Selenium (Se)-Total			<0.000050		mg/L		0.00005	27-OCT-21
Silicon (Si)-Total			<0.10		mg/L		0.1	27-OCT-21
Silver (Ag)-Total			<0.000050		mg/L		0.00005	27-OCT-21
Sodium (Na)-Total			<0.050		mg/L		0.05	27-OCT-21
Strontium (Sr)-Total			<0.0010		mg/L		0.001	27-OCT-21
Sulfur (S)-Total			<0.50		mg/L		0.5	27-OCT-21
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	27-OCT-21
Tellurium (Te)-Total			<0.00020		mg/L		0.0002	27-OCT-21
Thorium (Th)-Total			<0.00010		mg/L		0.0001	27-OCT-21
Tin (Sn)-Total			<0.00010		mg/L		0.0001	27-OCT-21
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	27-OCT-21
Tungsten (W)-Total			<0.00010		mg/L		0.0001	27-OCT-21
Uranium (U)-Total			<0.000010		mg/L		0.00001	27-OCT-21
Vanadium (V)-Total			<0.00050		mg/L		0.0005	27-OCT-21
Zinc (Zn)-Total			<0.0030		mg/L		0.003	27-OCT-21
Zirconium (Zr)-Total			<0.00020		mg/L		0.0002	27-OCT-21
WG3646235-1 MB								
Aluminum (Al)-Total			<0.0050		mg/L		0.005	27-OCT-21
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	27-OCT-21
Arsenic (As)-Total			<0.00010		mg/L		0.0001	27-OCT-21
Barium (Ba)-Total			<0.00010		mg/L		0.0001	27-OCT-21
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	27-OCT-21
Bismuth (Bi)-Total			<0.000050		mg/L		0.00005	27-OCT-21
Boron (B)-Total			<0.010		mg/L		0.01	27-OCT-21
Cadmium (Cd)-Total			<0.000005C		mg/L		0.000005	27-OCT-21
Calcium (Ca)-Total			<0.050		mg/L		0.05	27-OCT-21
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	27-OCT-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5629588								
WG3646235-1 MB								
Cesium (Cs)-Total			<0.000010		mg/L		0.00001	27-OCT-21
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	27-OCT-21
Copper (Cu)-Total			<0.00050		mg/L		0.0005	27-OCT-21
Iron (Fe)-Total			<0.010		mg/L		0.01	27-OCT-21
Lead (Pb)-Total			<0.000050		mg/L		0.00005	27-OCT-21
Lithium (Li)-Total			<0.0010		mg/L		0.001	27-OCT-21
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	27-OCT-21
Manganese (Mn)-Total			<0.00050		mg/L		0.0005	27-OCT-21
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	27-OCT-21
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	27-OCT-21
Phosphorus (P)-Total			<0.050		mg/L		0.05	27-OCT-21
Potassium (K)-Total			<0.050		mg/L		0.05	27-OCT-21
Rubidium (Rb)-Total			<0.00020		mg/L		0.0002	27-OCT-21
Selenium (Se)-Total			<0.000050		mg/L		0.00005	27-OCT-21
Silicon (Si)-Total			<0.10		mg/L		0.1	27-OCT-21
Silver (Ag)-Total			<0.000050		mg/L		0.00005	27-OCT-21
Sodium (Na)-Total			<0.050		mg/L		0.05	27-OCT-21
Strontium (Sr)-Total			<0.0010		mg/L		0.001	27-OCT-21
Sulfur (S)-Total			<0.50		mg/L		0.5	27-OCT-21
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	27-OCT-21
Tellurium (Te)-Total			<0.00020		mg/L		0.0002	27-OCT-21
Thorium (Th)-Total			<0.00010		mg/L		0.0001	27-OCT-21
Tin (Sn)-Total			<0.00010		mg/L		0.0001	27-OCT-21
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	27-OCT-21
Tungsten (W)-Total			<0.00010		mg/L		0.0001	27-OCT-21
Uranium (U)-Total			<0.000010		mg/L		0.00001	27-OCT-21
Vanadium (V)-Total			<0.00050		mg/L		0.0005	27-OCT-21
Zinc (Zn)-Total			<0.0030		mg/L		0.003	27-OCT-21
Zirconium (Zr)-Total			<0.00020		mg/L		0.0002	27-OCT-21
WG3646230-5 MS		**WG3646230-6**						
Aluminum (Al)-Total			N/A	MS-B	%		-	27-OCT-21
Antimony (Sb)-Total			103.0		%		70-130	27-OCT-21
Arsenic (As)-Total			105.2		%		70-130	27-OCT-21
Barium (Ba)-Total			98.2		%		70-130	27-OCT-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5629588								
WG3646230-5 MS		**WG3646230-6**						
Beryllium (Be)-Total			96.0		%		70-130	27-OCT-21
Bismuth (Bi)-Total			99.2		%		70-130	27-OCT-21
Boron (B)-Total			93.9		%		70-130	27-OCT-21
Cadmium (Cd)-Total			107.2		%		70-130	27-OCT-21
Calcium (Ca)-Total			N/A	MS-B	%		-	27-OCT-21
Chromium (Cr)-Total			105.3		%		70-130	27-OCT-21
Cesium (Cs)-Total			99.2		%		70-130	27-OCT-21
Cobalt (Co)-Total			106.6		%		70-130	27-OCT-21
Copper (Cu)-Total			105.2		%		70-130	27-OCT-21
Iron (Fe)-Total			N/A	MS-B	%		-	27-OCT-21
Lead (Pb)-Total			100.1		%		70-130	27-OCT-21
Lithium (Li)-Total			90.8		%		70-130	27-OCT-21
Magnesium (Mg)-Total			N/A	MS-B	%		-	27-OCT-21
Manganese (Mn)-Total			N/A	MS-B	%		-	27-OCT-21
Molybdenum (Mo)-Total			102.2		%		70-130	27-OCT-21
Nickel (Ni)-Total			104.8		%		70-130	27-OCT-21
Phosphorus (P)-Total			108.2		%		70-130	27-OCT-21
Potassium (K)-Total			99.3		%		70-130	27-OCT-21
Rubidium (Rb)-Total			105.9		%		70-130	27-OCT-21
Selenium (Se)-Total			110.1		%		70-130	27-OCT-21
Silicon (Si)-Total			N/A	MS-B	%		-	27-OCT-21
Silver (Ag)-Total			101.1		%		70-130	27-OCT-21
Sodium (Na)-Total			N/A	MS-B	%		-	27-OCT-21
Strontium (Sr)-Total			N/A	MS-B	%		-	27-OCT-21
Sulfur (S)-Total			103.9		%		70-130	27-OCT-21
Thallium (Tl)-Total			101.4		%		70-130	27-OCT-21
Tellurium (Te)-Total			101.7		%		70-130	27-OCT-21
Thorium (Th)-Total			95.4		%		70-130	27-OCT-21
Tin (Sn)-Total			101.7		%		70-130	27-OCT-21
Titanium (Ti)-Total			100.9		%		70-130	27-OCT-21
Tungsten (W)-Total			99.0		%		70-130	27-OCT-21
Uranium (U)-Total			103.3		%		70-130	27-OCT-21
Vanadium (V)-Total			105.8		%		70-130	27-OCT-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5629588								
WG3646230-5 MS		**WG3646230-6**						
Zinc (Zn)-Total			95.9		%		70-130	27-OCT-21
Zirconium (Zr)-Total			85.6		%		70-130	27-OCT-21
WG3646233-5 MS		**WG3646233-6**						
Aluminum (Al)-Total			101.5		%		70-130	27-OCT-21
Antimony (Sb)-Total			106.7		%		70-130	27-OCT-21
Arsenic (As)-Total			104.4		%		70-130	27-OCT-21
Barium (Ba)-Total			N/A	MS-B	%		-	27-OCT-21
Beryllium (Be)-Total			98.1		%		70-130	27-OCT-21
Bismuth (Bi)-Total			98.3		%		70-130	27-OCT-21
Boron (B)-Total			94.4		%		70-130	27-OCT-21
Cadmium (Cd)-Total			102.4		%		70-130	27-OCT-21
Calcium (Ca)-Total			N/A	MS-B	%		-	27-OCT-21
Chromium (Cr)-Total			91.8		%		70-130	27-OCT-21
Cesium (Cs)-Total			100.9		%		70-130	27-OCT-21
Cobalt (Co)-Total			103.2		%		70-130	27-OCT-21
Copper (Cu)-Total			98.8		%		70-130	27-OCT-21
Iron (Fe)-Total			N/A	MS-B	%		-	27-OCT-21
Lead (Pb)-Total			98.8		%		70-130	27-OCT-21
Lithium (Li)-Total			95.4		%		70-130	27-OCT-21
Magnesium (Mg)-Total			N/A	MS-B	%		-	27-OCT-21
Manganese (Mn)-Total			N/A	MS-B	%		-	27-OCT-21
Molybdenum (Mo)-Total			100.3		%		70-130	27-OCT-21
Nickel (Ni)-Total			100.2		%		70-130	27-OCT-21
Phosphorus (P)-Total			103.7		%		70-130	27-OCT-21
Potassium (K)-Total			N/A	MS-B	%		-	27-OCT-21
Rubidium (Rb)-Total			N/A	MS-B	%		-	27-OCT-21
Selenium (Se)-Total			108.0		%		70-130	27-OCT-21
Silicon (Si)-Total			N/A	MS-B	%		-	27-OCT-21
Silver (Ag)-Total			101.6		%		70-130	27-OCT-21
Sodium (Na)-Total			N/A	MS-B	%		-	27-OCT-21
Strontium (Sr)-Total			N/A	MS-B	%		-	27-OCT-21
Sulfur (S)-Total			N/A	MS-B	%		-	27-OCT-21
Thallium (Tl)-Total			100.2		%		70-130	27-OCT-21
Tellurium (Te)-Total			99.8		%		70-130	27-OCT-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5629588								
WG3646233-5 MS		**WG3646233-6**						
Thorium (Th)-Total			91.7		%		70-130	27-OCT-21
Tin (Sn)-Total			101.9		%		70-130	27-OCT-21
Titanium (Ti)-Total			96.5		%		70-130	27-OCT-21
Tungsten (W)-Total			98.7		%		70-130	27-OCT-21
Uranium (U)-Total			N/A	MS-B	%		-	27-OCT-21
Vanadium (V)-Total			103.0		%		70-130	27-OCT-21
Zinc (Zn)-Total			95.8		%		70-130	27-OCT-21
Zirconium (Zr)-Total			91.1		%		70-130	27-OCT-21
WG3646235-5 MS		**WG3646235-6**						
Aluminum (Al)-Total			N/A	MS-B	%		-	27-OCT-21
Antimony (Sb)-Total			103.4		%		70-130	27-OCT-21
Arsenic (As)-Total			104.0		%		70-130	27-OCT-21
Barium (Ba)-Total			98.5		%		70-130	27-OCT-21
Beryllium (Be)-Total			97.5		%		70-130	27-OCT-21
Bismuth (Bi)-Total			101.4		%		70-130	27-OCT-21
Boron (B)-Total			95.8		%		70-130	27-OCT-21
Cadmium (Cd)-Total			100.3		%		70-130	27-OCT-21
Calcium (Ca)-Total			N/A	MS-B	%		-	27-OCT-21
Chromium (Cr)-Total			102.6		%		70-130	27-OCT-21
Cesium (Cs)-Total			99.5		%		70-130	27-OCT-21
Cobalt (Co)-Total			104.6		%		70-130	27-OCT-21
Copper (Cu)-Total			103.8		%		70-130	27-OCT-21
Iron (Fe)-Total			N/A	MS-B	%		-	27-OCT-21
Lead (Pb)-Total			99.7		%		70-130	27-OCT-21
Lithium (Li)-Total			93.7		%		70-130	27-OCT-21
Magnesium (Mg)-Total			N/A	MS-B	%		-	27-OCT-21
Manganese (Mn)-Total			N/A	MS-B	%		-	27-OCT-21
Molybdenum (Mo)-Total			99.5		%		70-130	27-OCT-21
Nickel (Ni)-Total			103.3		%		70-130	27-OCT-21
Phosphorus (P)-Total			105.0		%		70-130	27-OCT-21
Potassium (K)-Total			101.6		%		70-130	27-OCT-21
Rubidium (Rb)-Total			105.5		%		70-130	27-OCT-21
Selenium (Se)-Total			107.3		%		70-130	27-OCT-21
Silicon (Si)-Total			N/A	MS-B	%		-	27-OCT-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5629588								
WG3646235-5 MS		**WG3646235-6**						
Silver (Ag)-Total			100.3		%		70-130	27-OCT-21
Sodium (Na)-Total			98.2		%		70-130	27-OCT-21
Strontium (Sr)-Total			N/A	MS-B	%		-	27-OCT-21
Sulfur (S)-Total			103.4		%		70-130	27-OCT-21
Thallium (Tl)-Total			102.7		%		70-130	27-OCT-21
Tellurium (Te)-Total			106.2		%		70-130	27-OCT-21
Thorium (Th)-Total			96.3		%		70-130	27-OCT-21
Tin (Sn)-Total			99.4		%		70-130	27-OCT-21
Titanium (Ti)-Total			N/A	MS-B	%		-	27-OCT-21
Tungsten (W)-Total			98.2		%		70-130	27-OCT-21
Uranium (U)-Total			101.4		%		70-130	27-OCT-21
Vanadium (V)-Total			103.9		%		70-130	27-OCT-21
Zinc (Zn)-Total			102.5		%		70-130	27-OCT-21
Zirconium (Zr)-Total			88.2		%		70-130	27-OCT-21
NH3-COL-WP	**Water**							
Batch R5635207								
WG3651404-3 DUP		**L2655799-4**						
Ammonia, Total (as N)		0.017	0.017		mg/L	2.3	20	02-NOV-21
WG3651404-2 LCS								
Ammonia, Total (as N)			101.6		%		85-115	02-NOV-21
WG3651404-1 MB								
Ammonia, Total (as N)			<0.010		mg/L		0.01	02-NOV-21
WG3651404-4 MS		**L2655799-4**						
Ammonia, Total (as N)			92.0		%		75-125	02-NOV-21
NO2-IC-WT	**Water**							
Batch R5632492								
WG3647872-9 DUP		**L2655497-1**						
Nitrite (as N)		<0.010	<0.010	RPD-NA	mg/L	N/A	20	28-OCT-21
WG3647872-7 LCS								
Nitrite (as N)			100.3		%		90-110	28-OCT-21
WG3647872-6 MB								
Nitrite (as N)			<0.010		mg/L		0.01	28-OCT-21
WG3647872-10 MS		**L2655497-1**						
Nitrite (as N)			102.5		%		75-125	28-OCT-21
NO3-IC-WT	**Water**							

Quality Control Report

Workorder: L2655497 Report Date: 18-NOV-21

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7

Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NO3-IC-WT	**Water**							
Batch R5632492								
WG3647872-9 DUP		**L2655497-1**						
Nitrate (as N)		0.040	0.040		mg/L	0.3	20	28-OCT-21
WG3647872-7 LCS								
Nitrate (as N)			99.8		%		90-110	28-OCT-21
WG3647872-6 MB								
Nitrate (as N)			<0.020		mg/L		0.02	28-OCT-21
WG3647872-10 MS		**L2655497-1**						
Nitrate (as N)			101.2		%		75-125	28-OCT-21
P-T-L-COL-WP	**Water**							
Batch R5639456								
WG3652509-3 DUP		**L2655497-1**						
Phosphorus (P)-Total		0.0265	0.0272		mg/L	2.5	20	10-NOV-21
WG3652509-2 LCS								
Phosphorus (P)-Total			85.7		%		80-120	10-NOV-21
WG3652509-1 MB								
Phosphorus (P)-Total			<0.0010		mg/L		0.001	10-NOV-21
WG3652509-4 MS		**L2655497-2**						
Phosphorus (P)-Total			N/A	MS-B	%		-	10-NOV-21
PH-WT	**Water**							
Batch R5629603								
WG3646554-4 DUP		**WG3646554-3**						
pH		8.45	8.42	J	pH units	0.03	0.2	27-OCT-21
WG3646554-2 LCS								
pH			7.00		pH units		6.9-7.1	27-OCT-21
Batch R5630962								
WG3646552-4 DUP		**WG3646552-3**						
pH		7.74	7.74	J	pH units	0.00	0.2	27-OCT-21
WG3646552-2 LCS								
pH			6.99		pH units		6.9-7.1	27-OCT-21
Batch R5630977								
WG3646553-4 DUP		**WG3646553-3**						
pH		8.25	8.23	J	pH units	0.02	0.2	27-OCT-21
WG3646553-2 LCS								
pH			7.00		pH units		6.9-7.1	27-OCT-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH-WT	**Water**							
Batch R5630999								
WG3646555-4 DUP		**WG3646555-3**						
pH		7.95	7.85	J	pH units	0.10	0.2	27-OCT-21
WG3646555-2 LCS								
pH			7.00		pH units		6.9-7.1	27-OCT-21
Batch R5632609								
WG3648006-4 DUP		**WG3648006-3**						
pH		7.15	7.08	J	pH units	0.07	0.2	28-OCT-21
WG3648006-2 LCS								
pH			7.01		pH units		6.9-7.1	28-OCT-21
SO4-IC-N-WT	**Water**							
Batch R5632492								
WG3647872-9 DUP		**L2655497-1**						
Sulfate (SO4)		0.89	0.89		mg/L	0.2	20	28-OCT-21
WG3647872-7 LCS								
Sulfate (SO4)			101.3		%		90-110	28-OCT-21
WG3647872-6 MB								
Sulfate (SO4)			<0.30		mg/L		0.3	28-OCT-21
WG3647872-10 MS		**L2655497-1**						
Sulfate (SO4)			103.1		%		75-125	28-OCT-21
SOLIDS-TDS-WT	**Water**							
Batch R5631339								
WG3646695-3 DUP		**L2655749-29**						
Total Dissolved Solids		388	394		mg/L	1.4	20	27-OCT-21
WG3646695-2 LCS								
Total Dissolved Solids			98.0		%		85-115	27-OCT-21
WG3646695-1 MB								
Total Dissolved Solids			<10		mg/L		10	27-OCT-21
Batch R5632703								
WG3646707-3 DUP		**L2655749-41**						
Total Dissolved Solids		467	475		mg/L	1.7	20	28-OCT-21
WG3646707-2 LCS								
Total Dissolved Solids			93.2		%		85-115	28-OCT-21
WG3646707-1 MB								
Total Dissolved Solids			<10		mg/L		10	28-OCT-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SOLIDS-TDS-WT	**Water**							
Batch R5633092								
WG3647764-3 DUP		**L2656268-1**						
Total Dissolved Solids		489	485		mg/L	0.9	20	29-OCT-21
WG3647764-2 LCS								
Total Dissolved Solids			97.9		%		85-115	29-OCT-21
WG3647764-1 MB								
Total Dissolved Solids			<10		mg/L		10	29-OCT-21
SOLIDS-TSS-WT	**Water**							
Batch R5631956								
WG3646700-3 DUP		**L2656136-2**						
Total Suspended Solids		53.3	55.5		mg/L	4.0	20	28-OCT-21
WG3646700-2 LCS								
Total Suspended Solids			98.3		%		85-115	28-OCT-21
WG3646700-1 MB								
Total Suspended Solids			<3.0		mg/L		3	28-OCT-21
Batch R5632741								
WG3646713-6 DUP		**WG3646713-7**						
Total Suspended Solids		13500	13300		mg/L	1.7	20	29-OCT-21
WG3646713-5 LCS								
Total Suspended Solids			97.4		%		85-115	29-OCT-21
WG3646713-4 MB								
Total Suspended Solids			<3.0		mg/L		3	29-OCT-21
Batch R5633177								
WG3647792-3 DUP		**L2657152-1**						
Total Suspended Solids		64.2	64.6		mg/L	0.6	20	30-OCT-21
WG3647792-2 LCS								
Total Suspended Solids			97.3		%		85-115	30-OCT-21
WG3647792-1 MB								
Total Suspended Solids			<3.0		mg/L		3	30-OCT-21

Quality Control Report

Workorder: L2655497 Report Date: 18-NOV-21

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Legend:

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

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Quality Control Report

Workorder: L2655497 Report Date: 18-NOV-21

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
pH							
	1	21-OCT-21 13:45	28-OCT-21 00:00	4	6	days	EHTR
	2	22-OCT-21 11:45	27-OCT-21 00:00	4	5	days	EHTL
Inorganic Parameters							
Acidity (as CaCO3)							
	1	21-OCT-21 13:45	09-NOV-21 00:00	14	18	days	EHT
	2	22-OCT-21 11:45	09-NOV-21 00:00	14	18	days	EHT
	4	24-OCT-21 14:10	09-NOV-21 00:00	14	15	days	EHT
	5	24-OCT-21 16:40	09-NOV-21 00:00	14	15	days	EHT
	6	24-OCT-21 11:15	09-NOV-21 00:00	14	16	days	EHT
	7	24-OCT-21	09-NOV-21 00:00	14	16	days	EHT

Legend & Qualifier Definitions:

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

Notes*:
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2655497 were received on 26-OCT-21 09:50.

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

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

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

Chain of

L2655497-COFC

COC Number: 20 -

Page of

AP

www.alsglobal.com

Report To	Contact and company name below will appear on the final report
Company:	Wood E&IS
Contact:	Dale Klodnicki
Phone:	(647) 993-4243
	Company address below will appear on the final report
Street:	2020 Winston Park Dirve, Suite 600
City/Province:	Oakville, ON
Postal Code:	L6H 6X7
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Wood E&IS
Contact:	Dale Klodnicki

Reports / Recipients

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Merge QC/QCI Reports with COA ☑ YES ☐ NO ☐ N/A
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: dale.klodnicki@woodplc.com
Email 2: michael.godard@woodplc.com
Email 3:

Invoice Recipients

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: APInvoice.Canada@woodplc.com
Email 2: dale.klodnicki@woodplc.com

Turnaround Time (TAT) Requested

☑ Routine [R] if received by 3pm M-F - no surcharges apply
☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.

AFFIX ALS BARCODE LABEL HERE (ALS use only)

Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests.

Date and Time Required for all E&P TATs:

For all tests with rush TATs requested, please contact your AM to confirm availability.

Project Information

ALS Account # / Quote #:	Q86725
Job #:	OMEMA2002
PO / AFE:	OMEMA2002.2021C.200.5120.573000
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (ALS use only): L2655497 AP

ALS Contact: Gayle Braun Sampler: RD / MG

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	F	Dissolved Metals	Total Metals	Acidity, Alkalinity, Hardness, pH	Anions, Conductivity	Total & Free Cyanide	Cyanide WAD	Total Mercury by CVAFS (Ultra)	Total Mthylmercury by GCAFS	Ammonia, Total Phosphorus	Radium 226	Total Suspended Solids	Total Dissolved Solids			SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	NDR-S-04	21-Oct-21	13:45	SW	7	R	R	R	R	R	R	R	R	R		R	R					
	NDR-S-02	22-Oct-21	11:45	SW	7	R	R	R	R	R	R	R	R	R		R	R					
	NDR-S-01	23-Oct-21	12:15	SW	7	R	R	R	R	R	R	R	R	R		R	R					
	WBR-S-04	24-Oct-21	14:!0	SW	7	R	R	R	R	R	R	R	R	R		R	R					
	WBR-S-03	24-Oct-21	16:40	SW	7	R	R	R	R	R	R	R	R	R		R	R					
	NDR-P-01	24-Oct-21	11:15	SW	7	R	R	R	R	R	R	R	R	R		R	R					
	CNC-DUP-02 AP	21-Oct 21	-																			
		-	-																			
		-	-																			
		-	-																			
		-	-																			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

[Combined] - Ontario PWQO+CCME-FAL-WATER

Federal CCME Canadian Environmental Quality Guidelines (JUL, 2012)

NDR-S-04 – Field Temp: 7.0 / pH: 6.91 | NDR-S-02 – Field Temp: 5.4 / pH: 6.23 NDR-S-01 – Field Temp: 4.5 / pH: 6.79 WBR-S-04 – Field Temp: 5.1 / pH: 6.38 WBR-S-03 – Field Temp: 5.3 / pH: 6.68 NDR-P-01 – Field Temp: 4.7 / pH: 6.02

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☑ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				1.5			

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
M.Godard	25-Oct-21 08:00	

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:
AP	26 Oct 21	9.50

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

AUG 2020 FRONT

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

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

Wood Environment & Infrastructure Solutions
ATTN: Dale Klodnicki
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7

Date Received: 28-OCT-21
Report Date: 08-DEC-21 15:08 (MT)
Version: FINAL

Client Phone: 905-568-2929

Certificate of Analysis

Lab Work Order #: L2656799

Project P.O. #: OMEMA2002.2021C.200.5120.573000
Job Reference: OMEMA2002
C of C Numbers:
Legal Site Desc:

<original signed by>

Gayle Braun
Senior Account Manager

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2656799-1 WBR-S-02 Sampled By: MG/RD on 25-OCT-21 @ 14:00 Matrix: SW							
Physical Tests							
Conductivity	53.4		1.0	umhos/cm		30-OCT-21	R5633224
Hardness (as CaCO3)	37.6	HTC	0.50	mg/L		01-NOV-21	
pH	6.99	PEHT	0.10	pH units		30-OCT-21	R5633224
Total Suspended Solids	5.4		3.0	mg/L	30-OCT-21	31-OCT-21	R5633284
Total Dissolved Solids	125	DLDS	13	mg/L		30-OCT-21	R5633293
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	23.6		1.0	mg/L		30-OCT-21	R5633224
Ammonia, Total (as N)	0.014		0.010	mg/L		04-NOV-21	R5636533
Bromide (Br)	<0.10		0.10	mg/L		01-NOV-21	R5634301
Chloride (Cl)	<0.50		0.50	mg/L		01-NOV-21	R5634301
Fluoride (F)	<0.020		0.020	mg/L		01-NOV-21	R5634301
Nitrate (as N)	0.050		0.020	mg/L		01-NOV-21	R5634301
Nitrite (as N)	<0.010		0.010	mg/L		01-NOV-21	R5634301
Phosphorus (P)-Total	0.0288		0.0010	mg/L		10-NOV-21	R5639456
Sulfate (SO4)	0.92		0.30	mg/L		01-NOV-21	R5634301
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L		03-NOV-21	R5635096
Cyanide, Total	<0.0020		0.0020	mg/L		03-NOV-21	R5635096
Cyanide, Free	<0.0020		0.0020	mg/L		03-NOV-21	R5635096
Inorganic Parameters							
Acidity (as CaCO3)	5.4		2.0	mg/L		02-NOV-21	R5634874
Total Metals							
Aluminum (Al)-Total	0.733		0.0050	mg/L	31-OCT-21	01-NOV-21	R5633771
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Arsenic (As)-Total	0.00145		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Barium (Ba)-Total	0.00948		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Boron (B)-Total	<0.010		0.010	mg/L	31-OCT-21	01-NOV-21	R5633771
Cadmium (Cd)-Total	0.0000406		0.0000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Calcium (Ca)-Total	10.4		0.050	mg/L	31-OCT-21	01-NOV-21	R5633771
Cesium (Cs)-Total	0.000043		0.000010	mg/L	31-OCT-21	01-NOV-21	R5633771
Chromium (Cr)-Total	0.00171		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Cobalt (Co)-Total	0.00033		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Copper (Cu)-Total	0.00265		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Iron (Fe)-Total	1.25		0.010	mg/L	31-OCT-21	01-NOV-21	R5633771
Lead (Pb)-Total	0.000454		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Lithium (Li)-Total	0.0010		0.0010	mg/L	31-OCT-21	01-NOV-21	R5633771
Magnesium (Mg)-Total	2.83		0.0050	mg/L	31-OCT-21	01-NOV-21	R5633771
Manganese (Mn)-Total	0.0500		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Mercury (Hg)-Total	0.00368		0.00050	ug/L		19-NOV-21	R5654670
Molybdenum (Mo)-Total	0.000066		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2656799-1 WBR-S-02 Sampled By: MG/RD on 25-OCT-21 @ 14:00 Matrix: SW							
Total Metals							
Nickel (Ni)-Total	0.00155		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Phosphorus (P)-Total	<0.050		0.050	mg/L	31-OCT-21	01-NOV-21	R5633771
Potassium (K)-Total	0.292		0.050	mg/L	31-OCT-21	01-NOV-21	R5633771
Rubidium (Rb)-Total	0.00139		0.00020	mg/L	31-OCT-21	01-NOV-21	R5633771
Selenium (Se)-Total	0.000219		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Silicon (Si)-Total	2.93		0.10	mg/L	31-OCT-21	01-NOV-21	R5633771
Silver (Ag)-Total	<0.000050		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Sodium (Na)-Total	1.24		0.050	mg/L	31-OCT-21	01-NOV-21	R5633771
Strontium (Sr)-Total	0.0258		0.0010	mg/L	31-OCT-21	01-NOV-21	R5633771
Sulfur (S)-Total	0.56		0.50	mg/L	31-OCT-21	01-NOV-21	R5633771
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	31-OCT-21	01-NOV-21	R5633771
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	31-OCT-21	01-NOV-21	R5633771
Thorium (Th)-Total	0.00017		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Tin (Sn)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Titanium (Ti)-Total	0.0243		0.00030	mg/L	31-OCT-21	01-NOV-21	R5633771
Tungsten (W)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Uranium (U)-Total	0.000068		0.000010	mg/L	31-OCT-21	01-NOV-21	R5633771
Vanadium (V)-Total	0.00146		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Zinc (Zn)-Total	0.0094		0.0030	mg/L	31-OCT-21	01-NOV-21	R5633771
Zirconium (Zr)-Total	0.00085		0.00020	mg/L	31-OCT-21	01-NOV-21	R5633771
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					03-NOV-21	R5635135
Aluminum (Al)-Dissolved	0.331		0.0010	mg/L	03-NOV-21	03-NOV-21	R5635916
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Arsenic (As)-Dissolved	0.00134		0.00010	mg/L	03-NOV-21	05-NOV-21	R5637701
Barium (Ba)-Dissolved	0.00669		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	03-NOV-21	03-NOV-21	R5635916
Boron (B)-Dissolved	<0.010		0.010	mg/L	03-NOV-21	03-NOV-21	R5635916
Cadmium (Cd)-Dissolved	0.0000438		0.0000050	mg/L	03-NOV-21	03-NOV-21	R5635916
Calcium (Ca)-Dissolved	11.0		0.050	mg/L	03-NOV-21	03-NOV-21	R5635916
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	03-NOV-21	03-NOV-21	R5635916
Chromium (Cr)-Dissolved	0.00092		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Cobalt (Co)-Dissolved	0.00013		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Copper (Cu)-Dissolved	0.00284		0.00020	mg/L	03-NOV-21	03-NOV-21	R5635916
Iron (Fe)-Dissolved	0.798		0.010	mg/L	03-NOV-21	03-NOV-21	R5635916
Lead (Pb)-Dissolved	0.000298		0.000050	mg/L	03-NOV-21	03-NOV-21	R5635916
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	03-NOV-21	03-NOV-21	R5635916
Magnesium (Mg)-Dissolved	2.60		0.0050	mg/L	03-NOV-21	03-NOV-21	R5635916
Manganese (Mn)-Dissolved	0.0359		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L	03-NOV-21	03-NOV-21	R5635916

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2656799-1 WBR-S-02 Sampled By: MG/RD on 25-OCT-21 @ 14:00 Matrix: SW							
Dissolved Metals							
Nickel (Ni)-Dissolved	0.00102		0.00050	mg/L	03-NOV-21	03-NOV-21	R5635916
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	03-NOV-21	03-NOV-21	R5635916
Potassium (K)-Dissolved	0.193		0.050	mg/L	03-NOV-21	03-NOV-21	R5635916
Rubidium (Rb)-Dissolved	0.00068		0.00020	mg/L	03-NOV-21	03-NOV-21	R5635916
Selenium (Se)-Dissolved	0.000189		0.000050	mg/L	03-NOV-21	03-NOV-21	R5635916
Silicon (Si)-Dissolved	2.08		0.050	mg/L	03-NOV-21	03-NOV-21	R5635916
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	03-NOV-21	03-NOV-21	R5635916
Sodium (Na)-Dissolved	1.11		0.050	mg/L	03-NOV-21	03-NOV-21	R5635916
Strontium (Sr)-Dissolved	0.0229		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Sulfur (S)-Dissolved	0.93		0.50	mg/L	03-NOV-21	03-NOV-21	R5635916
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	03-NOV-21	03-NOV-21	R5635916
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	03-NOV-21	03-NOV-21	R5635916
Thorium (Th)-Dissolved	0.00013		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Titanium (Ti)-Dissolved	0.00797		0.00030	mg/L	03-NOV-21	03-NOV-21	R5635916
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Uranium (U)-Dissolved	0.000059		0.000010	mg/L	03-NOV-21	03-NOV-21	R5635916
Vanadium (V)-Dissolved	0.00086		0.00050	mg/L	03-NOV-21	03-NOV-21	R5635916
Zinc (Zn)-Dissolved	0.0078		0.0010	mg/L	03-NOV-21	03-NOV-21	R5635916
Zirconium (Zr)-Dissolved	0.00064		0.00020	mg/L	03-NOV-21	03-NOV-21	R5635916
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000213		0.000020	ug/L	03-NOV-21	05-NOV-21	R5636098
L2656799-2 WBR-S-01 Sampled By: MG/RD on 25-OCT-21 @ 15:45 Matrix: SW							
Physical Tests							
Conductivity	112		1.0	umhos/cm		30-OCT-21	R5633224
Hardness (as CaCO3)	67.8	HTC	0.50	mg/L		01-NOV-21	
pH	7.52	PEHT	0.10	pH units		30-OCT-21	R5633224
Total Suspended Solids	<3.0		3.0	mg/L	30-OCT-21	31-OCT-21	R5633284
Total Dissolved Solids	131	DLDS	13	mg/L		30-OCT-21	R5633293
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	55.8		1.0	mg/L		30-OCT-21	R5633224
Ammonia, Total (as N)	0.014		0.010	mg/L		04-NOV-21	R5636533
Bromide (Br)	<0.10		0.10	mg/L		01-NOV-21	R5634301
Chloride (Cl)	<0.50		0.50	mg/L		01-NOV-21	R5634301
Fluoride (F)	0.029		0.020	mg/L		01-NOV-21	R5634301
Nitrate (as N)	0.141		0.020	mg/L		01-NOV-21	R5634301
Nitrite (as N)	<0.010		0.010	mg/L		01-NOV-21	R5634301
Phosphorus (P)-Total	0.0190		0.0010	mg/L		10-NOV-21	R5639456
Sulfate (SO4)	1.58		0.30	mg/L		01-NOV-21	R5634301
Cyanides							

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2656799-2 WBR-S-01 Sampled By: MG/RD on 25-OCT-21 @ 15:45 Matrix: SW							
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L		03-NOV-21	R5635096
Cyanide, Total	<0.0020		0.0020	mg/L		03-NOV-21	R5635096
Cyanide, Free	<0.0020		0.0020	mg/L		03-NOV-21	R5635096
Inorganic Parameters							
Acidity (as CaCO3)	3.6		2.0	mg/L		02-NOV-21	R5634874
Total Metals							
Aluminum (Al)-Total	0.337		0.0050	mg/L	31-OCT-21	01-NOV-21	R5633771
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Arsenic (As)-Total	0.00100		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Barium (Ba)-Total	0.0101		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Boron (B)-Total	<0.010		0.010	mg/L	31-OCT-21	01-NOV-21	R5633771
Cadmium (Cd)-Total	0.0000304		0.0000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Calcium (Ca)-Total	18.6		0.050	mg/L	31-OCT-21	01-NOV-21	R5633771
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	31-OCT-21	01-NOV-21	R5633771
Chromium (Cr)-Total	0.00106		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Cobalt (Co)-Total	0.00012		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Copper (Cu)-Total	0.00160		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Iron (Fe)-Total	0.620		0.010	mg/L	31-OCT-21	01-NOV-21	R5633771
Lead (Pb)-Total	0.000230		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Lithium (Li)-Total	<0.0010		0.0010	mg/L	31-OCT-21	01-NOV-21	R5633771
Magnesium (Mg)-Total	5.17		0.0050	mg/L	31-OCT-21	01-NOV-21	R5633771
Manganese (Mn)-Total	0.0484		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Mercury (Hg)-Total	0.00402		0.00050	ug/L		20-NOV-21	R5654670
Molybdenum (Mo)-Total	0.000095		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Nickel (Ni)-Total	0.00087		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Phosphorus (P)-Total	<0.050		0.050	mg/L	31-OCT-21	01-NOV-21	R5633771
Potassium (K)-Total	0.347		0.050	mg/L	31-OCT-21	01-NOV-21	R5633771
Rubidium (Rb)-Total	0.00088		0.00020	mg/L	31-OCT-21	01-NOV-21	R5633771
Selenium (Se)-Total	0.000200		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Silicon (Si)-Total	2.53		0.10	mg/L	31-OCT-21	01-NOV-21	R5633771
Silver (Ag)-Total	<0.000050		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Sodium (Na)-Total	2.21		0.050	mg/L	31-OCT-21	01-NOV-21	R5633771
Strontium (Sr)-Total	0.0436		0.0010	mg/L	31-OCT-21	01-NOV-21	R5633771
Sulfur (S)-Total	0.80		0.50	mg/L	31-OCT-21	01-NOV-21	R5633771
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	31-OCT-21	01-NOV-21	R5633771
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	31-OCT-21	01-NOV-21	R5633771
Thorium (Th)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Tin (Sn)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Titanium (Ti)-Total	0.00909		0.00030	mg/L	31-OCT-21	01-NOV-21	R5633771

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2656799-2 WBR-S-01 Sampled By: MG/RD on 25-OCT-21 @ 15:45 Matrix: SW							
Total Metals							
Tungsten (W)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Uranium (U)-Total	0.000086		0.000010	mg/L	31-OCT-21	01-NOV-21	R5633771
Vanadium (V)-Total	0.00082		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Zinc (Zn)-Total	0.0044		0.0030	mg/L	31-OCT-21	01-NOV-21	R5633771
Zirconium (Zr)-Total	0.00064		0.00020	mg/L	31-OCT-21	01-NOV-21	R5633771
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					03-NOV-21	R5635135
Aluminum (Al)-Dissolved	0.260		0.0010	mg/L	03-NOV-21	03-NOV-21	R5635916
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Arsenic (As)-Dissolved	0.00091		0.00010	mg/L	03-NOV-21	05-NOV-21	R5637701
Barium (Ba)-Dissolved	0.00941		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	03-NOV-21	03-NOV-21	R5635916
Boron (B)-Dissolved	<0.010		0.010	mg/L	03-NOV-21	03-NOV-21	R5635916
Cadmium (Cd)-Dissolved	0.0000310		0.0000050	mg/L	03-NOV-21	03-NOV-21	R5635916
Calcium (Ca)-Dissolved	18.6		0.050	mg/L	03-NOV-21	03-NOV-21	R5635916
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	03-NOV-21	03-NOV-21	R5635916
Chromium (Cr)-Dissolved	0.00073		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Copper (Cu)-Dissolved	0.00143		0.00020	mg/L	03-NOV-21	03-NOV-21	R5635916
Iron (Fe)-Dissolved	0.517		0.010	mg/L	03-NOV-21	03-NOV-21	R5635916
Lead (Pb)-Dissolved	0.000178		0.000050	mg/L	03-NOV-21	03-NOV-21	R5635916
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	03-NOV-21	03-NOV-21	R5635916
Magnesium (Mg)-Dissolved	4.94		0.0050	mg/L	03-NOV-21	03-NOV-21	R5635916
Manganese (Mn)-Dissolved	0.0407		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Molybdenum (Mo)-Dissolved	0.000080		0.000050	mg/L	03-NOV-21	03-NOV-21	R5635916
Nickel (Ni)-Dissolved	0.00069		0.00050	mg/L	03-NOV-21	03-NOV-21	R5635916
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	03-NOV-21	03-NOV-21	R5635916
Potassium (K)-Dissolved	0.321		0.050	mg/L	03-NOV-21	03-NOV-21	R5635916
Rubidium (Rb)-Dissolved	0.00071		0.00020	mg/L	03-NOV-21	03-NOV-21	R5635916
Selenium (Se)-Dissolved	0.000212		0.000050	mg/L	03-NOV-21	03-NOV-21	R5635916
Silicon (Si)-Dissolved	2.28		0.050	mg/L	03-NOV-21	03-NOV-21	R5635916
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	03-NOV-21	03-NOV-21	R5635916
Sodium (Na)-Dissolved	2.05		0.050	mg/L	03-NOV-21	03-NOV-21	R5635916
Strontium (Sr)-Dissolved	0.0420		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Sulfur (S)-Dissolved	0.94		0.50	mg/L	03-NOV-21	03-NOV-21	R5635916
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	03-NOV-21	03-NOV-21	R5635916
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	03-NOV-21	03-NOV-21	R5635916
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Titanium (Ti)-Dissolved	0.00628		0.00030	mg/L	03-NOV-21	03-NOV-21	R5635916

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2656799-2 WBR-S-01 Sampled By: MG/RD on 25-OCT-21 @ 15:45 Matrix: SW							
Dissolved Metals							
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Uranium (U)-Dissolved	0.000076		0.000010	mg/L	03-NOV-21	03-NOV-21	R5635916
Vanadium (V)-Dissolved	0.00060		0.00050	mg/L	03-NOV-21	03-NOV-21	R5635916
Zinc (Zn)-Dissolved	0.0039		0.0010	mg/L	03-NOV-21	03-NOV-21	R5635916
Zirconium (Zr)-Dissolved	0.00048		0.00020	mg/L	03-NOV-21	03-NOV-21	R5635916
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000156		0.000020	ug/L	03-NOV-21	05-NOV-21	R5636098
Radiological Parameters							
Ra-226	0.0031		0.0015	Bq/L	18-NOV-21	24-NOV-21	R5659878
L2656799-3 WBR-P-01 Sampled By: MG/RD on 26-OCT-21 @ 10:00 Matrix: SW							
Physical Tests							
Conductivity	45.8		1.0	umhos/cm		30-OCT-21	R5633224
Hardness (as CaCO3)	28.1	HTC	0.50	mg/L		01-NOV-21	
pH	6.74	PEHT	0.10	pH units		30-OCT-21	R5633224
Total Suspended Solids	<3.0		3.0	mg/L	30-OCT-21	31-OCT-21	R5633284
Total Dissolved Solids	82		10	mg/L		30-OCT-21	R5633293
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	17.6		1.0	mg/L		30-OCT-21	R5633224
Ammonia, Total (as N)	0.011		0.010	mg/L		04-NOV-21	R5636533
Bromide (Br)	<0.10		0.10	mg/L		01-NOV-21	R5634301
Chloride (Cl)	<0.50		0.50	mg/L		01-NOV-21	R5634301
Fluoride (F)	0.021		0.020	mg/L		01-NOV-21	R5634301
Nitrate (as N)	<0.020		0.020	mg/L		01-NOV-21	R5634301
Nitrite (as N)	<0.010		0.010	mg/L		01-NOV-21	R5634301
Phosphorus (P)-Total	0.0275		0.0010	mg/L		10-NOV-21	R5639456
Sulfate (SO4)	<0.30		0.30	mg/L		01-NOV-21	R5634301
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L		03-NOV-21	R5635096
Cyanide, Total	<0.0020		0.0020	mg/L		03-NOV-21	R5635096
Cyanide, Free	<0.0020		0.0020	mg/L		03-NOV-21	R5635096
Inorganic Parameters							
Acidity (as CaCO3)	3.8		2.0	mg/L		02-NOV-21	R5634874
Total Metals							
Aluminum (Al)-Total	0.162		0.0050	mg/L	31-OCT-21	01-NOV-21	R5633771
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Arsenic (As)-Total	0.00079		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Barium (Ba)-Total	0.00375		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Boron (B)-Total	<0.010		0.010	mg/L	31-OCT-21	01-NOV-21	R5633771

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2656799-3 WBR-P-01 Sampled By: MG/RD on 26-OCT-21 @ 10:00 Matrix: SW							
Total Metals							
Cadmium (Cd)-Total	0.0000074		0.0000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Calcium (Ca)-Total	7.44		0.050	mg/L	31-OCT-21	01-NOV-21	R5633771
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	31-OCT-21	01-NOV-21	R5633771
Chromium (Cr)-Total	0.00058		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Cobalt (Co)-Total	0.00026		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Copper (Cu)-Total	<0.00050		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Iron (Fe)-Total	0.611		0.010	mg/L	31-OCT-21	01-NOV-21	R5633771
Lead (Pb)-Total	0.000159		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Lithium (Li)-Total	<0.0010		0.0010	mg/L	31-OCT-21	01-NOV-21	R5633771
Magnesium (Mg)-Total	2.30		0.0050	mg/L	31-OCT-21	01-NOV-21	R5633771
Manganese (Mn)-Total	0.0586		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Mercury (Hg)-Total	0.00122		0.00050	ug/L		19-NOV-21	R5654670
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Nickel (Ni)-Total	0.00056		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Phosphorus (P)-Total	<0.050		0.050	mg/L	31-OCT-21	01-NOV-21	R5633771
Potassium (K)-Total	0.270		0.050	mg/L	31-OCT-21	01-NOV-21	R5633771
Rubidium (Rb)-Total	0.00125		0.00020	mg/L	31-OCT-21	01-NOV-21	R5633771
Selenium (Se)-Total	0.000119		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Silicon (Si)-Total	1.72		0.10	mg/L	31-OCT-21	01-NOV-21	R5633771
Silver (Ag)-Total	<0.000050		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Sodium (Na)-Total	0.573		0.050	mg/L	31-OCT-21	01-NOV-21	R5633771
Strontium (Sr)-Total	0.0136		0.0010	mg/L	31-OCT-21	01-NOV-21	R5633771
Sulfur (S)-Total	<0.50		0.50	mg/L	31-OCT-21	01-NOV-21	R5633771
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	31-OCT-21	01-NOV-21	R5633771
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	31-OCT-21	01-NOV-21	R5633771
Thorium (Th)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Tin (Sn)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Titanium (Ti)-Total	0.00392		0.00030	mg/L	31-OCT-21	01-NOV-21	R5633771
Tungsten (W)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Uranium (U)-Total	0.000013		0.000010	mg/L	31-OCT-21	01-NOV-21	R5633771
Vanadium (V)-Total	<0.00050		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Zinc (Zn)-Total	0.0040		0.0030	mg/L	31-OCT-21	01-NOV-21	R5633771
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	31-OCT-21	01-NOV-21	R5633771
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					03-NOV-21	R5635135
Aluminum (Al)-Dissolved	0.112		0.0010	mg/L	03-NOV-21	03-NOV-21	R5635916
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Arsenic (As)-Dissolved	0.00075		0.00010	mg/L	03-NOV-21	05-NOV-21	R5637701
Barium (Ba)-Dissolved	0.00332		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	03-NOV-21	03-NOV-21	R5635916

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2656799-3 WBR-P-01 Sampled By: MG/RD on 26-OCT-21 @ 10:00 Matrix: SW							
Dissolved Metals							
Boron (B)-Dissolved	<0.010		0.010	mg/L	03-NOV-21	03-NOV-21	R5635916
Cadmium (Cd)-Dissolved	0.0000056		0.0000050	mg/L	03-NOV-21	03-NOV-21	R5635916
Calcium (Ca)-Dissolved	7.67		0.050	mg/L	03-NOV-21	03-NOV-21	R5635916
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	03-NOV-21	03-NOV-21	R5635916
Chromium (Cr)-Dissolved	0.00042		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Cobalt (Co)-Dissolved	0.00020		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Copper (Cu)-Dissolved	0.00027		0.00020	mg/L	03-NOV-21	03-NOV-21	R5635916
Iron (Fe)-Dissolved	0.454		0.010	mg/L	03-NOV-21	03-NOV-21	R5635916
Lead (Pb)-Dissolved	0.000109		0.000050	mg/L	03-NOV-21	03-NOV-21	R5635916
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	03-NOV-21	03-NOV-21	R5635916
Magnesium (Mg)-Dissolved	2.18		0.0050	mg/L	03-NOV-21	03-NOV-21	R5635916
Manganese (Mn)-Dissolved	0.0381		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L	03-NOV-21	03-NOV-21	R5635916
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	03-NOV-21	03-NOV-21	R5635916
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	03-NOV-21	03-NOV-21	R5635916
Potassium (K)-Dissolved	0.249		0.050	mg/L	03-NOV-21	03-NOV-21	R5635916
Rubidium (Rb)-Dissolved	0.00104		0.00020	mg/L	03-NOV-21	03-NOV-21	R5635916
Selenium (Se)-Dissolved	0.000121		0.000050	mg/L	03-NOV-21	03-NOV-21	R5635916
Silicon (Si)-Dissolved	1.55		0.050	mg/L	03-NOV-21	03-NOV-21	R5635916
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	03-NOV-21	03-NOV-21	R5635916
Sodium (Na)-Dissolved	0.531		0.050	mg/L	03-NOV-21	03-NOV-21	R5635916
Strontium (Sr)-Dissolved	0.0132		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Sulfur (S)-Dissolved	<0.50		0.50	mg/L	03-NOV-21	03-NOV-21	R5635916
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	03-NOV-21	03-NOV-21	R5635916
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	03-NOV-21	03-NOV-21	R5635916
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Titanium (Ti)-Dissolved	0.00207		0.00030	mg/L	03-NOV-21	03-NOV-21	R5635916
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Uranium (U)-Dissolved	0.000010		0.000010	mg/L	03-NOV-21	03-NOV-21	R5635916
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	03-NOV-21	03-NOV-21	R5635916
Zinc (Zn)-Dissolved	0.0036		0.0010	mg/L	03-NOV-21	03-NOV-21	R5635916
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	03-NOV-21	03-NOV-21	R5635916
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000059		0.000020	ug/L	03-NOV-21	05-NOV-21	R5636098
L2656799-4 WBR-P-02 Sampled By: MG/RD on 26-OCT-21 @ 12:30 Matrix: SW							
Physical Tests							
Conductivity	38.3		1.0	umhos/cm		30-OCT-21	R5633224
Hardness (as CaCO3)	24.9	HTC	0.50	mg/L		01-NOV-21	
pH	6.37	PEHT	0.10	pH units		30-OCT-21	R5633224

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2656799-4 WBR-P-02 Sampled By: MG/RD on 26-OCT-21 @ 12:30 Matrix: SW							
Physical Tests							
Total Suspended Solids	<3.0		3.0	mg/L	30-OCT-21	31-OCT-21	R5633284
Total Dissolved Solids	79		10	mg/L		30-OCT-21	R5633293
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	11.5		1.0	mg/L		30-OCT-21	R5633224
Ammonia, Total (as N)	0.012		0.010	mg/L		04-NOV-21	R5636533
Bromide (Br)	<0.10		0.10	mg/L		01-NOV-21	R5634301
Chloride (Cl)	<0.50		0.50	mg/L		01-NOV-21	R5634301
Fluoride (F)	<0.020		0.020	mg/L		01-NOV-21	R5634301
Nitrate (as N)	<0.020		0.020	mg/L		01-NOV-21	R5634301
Nitrite (as N)	<0.010		0.010	mg/L		01-NOV-21	R5634301
Phosphorus (P)-Total	0.0164		0.0010	mg/L		10-NOV-21	R5639456
Sulfate (SO4)	<0.30		0.30	mg/L		01-NOV-21	R5634301
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L		02-NOV-21	R5635096
Cyanide, Total	<0.0020		0.0020	mg/L		02-NOV-21	R5635096
Cyanide, Free	<0.0020		0.0020	mg/L		02-NOV-21	R5635096
Inorganic Parameters							
Acidity (as CaCO3)	4.6		2.0	mg/L		02-NOV-21	R5634874
Total Metals							
Aluminum (Al)-Total	0.130		0.0050	mg/L	31-OCT-21	01-NOV-21	R5633771
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Arsenic (As)-Total	0.00079		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Barium (Ba)-Total	0.00335		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Boron (B)-Total	<0.010		0.010	mg/L	31-OCT-21	01-NOV-21	R5633771
Cadmium (Cd)-Total	0.0000089		0.0000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Calcium (Ca)-Total	6.59		0.050	mg/L	31-OCT-21	01-NOV-21	R5633771
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	31-OCT-21	01-NOV-21	R5633771
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Cobalt (Co)-Total	0.00011		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Copper (Cu)-Total	<0.00050		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Iron (Fe)-Total	0.497		0.010	mg/L	31-OCT-21	01-NOV-21	R5633771
Lead (Pb)-Total	0.000101		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Lithium (Li)-Total	<0.0010		0.0010	mg/L	31-OCT-21	01-NOV-21	R5633771
Magnesium (Mg)-Total	2.06		0.0050	mg/L	31-OCT-21	01-NOV-21	R5633771
Manganese (Mn)-Total	0.0197		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Mercury (Hg)-Total	0.00107		0.00050	ug/L		19-NOV-21	R5654670
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Nickel (Ni)-Total	0.00053		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Phosphorus (P)-Total	<0.050		0.050	mg/L	31-OCT-21	01-NOV-21	R5633771
Potassium (K)-Total	0.050		0.050	mg/L	31-OCT-21	01-NOV-21	R5633771

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2656799-4 WBR-P-02 Sampled By: MG/RD on 26-OCT-21 @ 12:30 Matrix: SW							
Total Metals							
Rubidium (Rb)-Total	0.00027		0.00020	mg/L	31-OCT-21	01-NOV-21	R5633771
Selenium (Se)-Total	0.000110		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Silicon (Si)-Total	1.80		0.10	mg/L	31-OCT-21	01-NOV-21	R5633771
Silver (Ag)-Total	<0.000050		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Sodium (Na)-Total	0.608		0.050	mg/L	31-OCT-21	01-NOV-21	R5633771
Strontium (Sr)-Total	0.0120		0.0010	mg/L	31-OCT-21	01-NOV-21	R5633771
Sulfur (S)-Total	<0.50		0.50	mg/L	31-OCT-21	01-NOV-21	R5633771
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	31-OCT-21	01-NOV-21	R5633771
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	31-OCT-21	01-NOV-21	R5633771
Thorium (Th)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Tin (Sn)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Titanium (Ti)-Total	0.00175		0.00030	mg/L	31-OCT-21	01-NOV-21	R5633771
Tungsten (W)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Uranium (U)-Total	<0.000010		0.000010	mg/L	31-OCT-21	01-NOV-21	R5633771
Vanadium (V)-Total	<0.00050		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Zinc (Zn)-Total	0.0062		0.0030	mg/L	31-OCT-21	01-NOV-21	R5633771
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	31-OCT-21	01-NOV-21	R5633771
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					03-NOV-21	R5635135
Aluminum (Al)-Dissolved	0.126		0.0010	mg/L	03-NOV-21	03-NOV-21	R5635916
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Arsenic (As)-Dissolved	0.00081		0.00010	mg/L	03-NOV-21	04-NOV-21	R5636599
Barium (Ba)-Dissolved	0.00337		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	03-NOV-21	03-NOV-21	R5635916
Boron (B)-Dissolved	<0.010		0.010	mg/L	03-NOV-21	03-NOV-21	R5635916
Cadmium (Cd)-Dissolved	0.0000068		0.0000050	mg/L	03-NOV-21	03-NOV-21	R5635916
Calcium (Ca)-Dissolved	7.04		0.050	mg/L	03-NOV-21	03-NOV-21	R5635916
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	03-NOV-21	03-NOV-21	R5635916
Chromium (Cr)-Dissolved	0.00042		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Copper (Cu)-Dissolved	0.00022		0.00020	mg/L	03-NOV-21	03-NOV-21	R5635916
Iron (Fe)-Dissolved	0.459		0.010	mg/L	03-NOV-21	03-NOV-21	R5635916
Lead (Pb)-Dissolved	0.000079		0.000050	mg/L	03-NOV-21	03-NOV-21	R5635916
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	03-NOV-21	03-NOV-21	R5635916
Magnesium (Mg)-Dissolved	1.94		0.0050	mg/L	03-NOV-21	03-NOV-21	R5635916
Manganese (Mn)-Dissolved	0.0182		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L	03-NOV-21	03-NOV-21	R5635916
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	03-NOV-21	03-NOV-21	R5635916
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	03-NOV-21	03-NOV-21	R5635916
Potassium (K)-Dissolved	0.151	RRV	0.050	mg/L	03-NOV-21	04-NOV-21	R5636599

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2656799-4 WBR-P-02 Sampled By: MG/RD on 26-OCT-21 @ 12:30 Matrix: SW							
Dissolved Metals							
Rubidium (Rb)-Dissolved	0.00053		0.00020	mg/L	03-NOV-21	03-NOV-21	R5635916
Selenium (Se)-Dissolved	0.000101		0.000050	mg/L	03-NOV-21	03-NOV-21	R5635916
Silicon (Si)-Dissolved	1.70		0.050	mg/L	03-NOV-21	03-NOV-21	R5635916
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	03-NOV-21	03-NOV-21	R5635916
Sodium (Na)-Dissolved	0.570		0.050	mg/L	03-NOV-21	03-NOV-21	R5635916
Strontium (Sr)-Dissolved	0.0121		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Sulfur (S)-Dissolved	<0.50		0.50	mg/L	03-NOV-21	03-NOV-21	R5635916
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	03-NOV-21	03-NOV-21	R5635916
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	03-NOV-21	03-NOV-21	R5635916
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Titanium (Ti)-Dissolved	0.00161		0.00030	mg/L	03-NOV-21	03-NOV-21	R5635916
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Uranium (U)-Dissolved	<0.000010		0.000010	mg/L	03-NOV-21	03-NOV-21	R5635916
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	03-NOV-21	03-NOV-21	R5635916
Zinc (Zn)-Dissolved	0.0059		0.0010	mg/L	03-NOV-21	03-NOV-21	R5635916
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	03-NOV-21	03-NOV-21	R5635916
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000058		0.000020	ug/L	03-NOV-21	05-NOV-21	R5636098
L2656799-5 NDR-GERK Sampled By: MG/RD on 26-OCT-21 @ 16:50 Matrix: SW							
Physical Tests							
Conductivity	297		1.0	umhos/cm		30-OCT-21	R5633224
Hardness (as CaCO3)	147	HTC	0.50	mg/L		01-NOV-21	
pH	8.08		0.10	pH units		30-OCT-21	R5633224
Total Suspended Solids	<3.0		3.0	mg/L	30-OCT-21	31-OCT-21	R5633284
Total Dissolved Solids	167	DLDS	20	mg/L		30-OCT-21	R5633293
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	163		1.0	mg/L		30-OCT-21	R5633224
Ammonia, Total (as N)	0.017		0.010	mg/L		04-NOV-21	R5636533
Bromide (Br)	<0.10		0.10	mg/L		01-NOV-21	R5634301
Chloride (Cl)	0.92		0.50	mg/L		01-NOV-21	R5634301
Fluoride (F)	0.079		0.020	mg/L		01-NOV-21	R5634301
Nitrate (as N)	<0.020		0.020	mg/L		01-NOV-21	R5634301
Nitrite (as N)	<0.010		0.010	mg/L		01-NOV-21	R5634301
Phosphorus (P)-Total	0.0220		0.0010	mg/L		10-NOV-21	R5639456
Sulfate (SO4)	1.28		0.30	mg/L		01-NOV-21	R5634301
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L		02-NOV-21	R5635096
Cyanide, Total	<0.0020		0.0020	mg/L		02-NOV-21	R5635096
Cyanide, Free	<0.0020		0.0020	mg/L		02-NOV-21	R5635096

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2656799-5 NDR-GERK Sampled By: MG/RD on 26-OCT-21 @ 16:50 Matrix: SW							
Cyanides							
Inorganic Parameters							
Acidity (as CaCO3)	<2.0		2.0	mg/L		02-NOV-21	R5634874
Total Metals							
Aluminum (Al)-Total	0.0213		0.0050	mg/L	31-OCT-21	01-NOV-21	R5633771
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Arsenic (As)-Total	0.00048		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Barium (Ba)-Total	0.0198		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Boron (B)-Total	<0.010		0.010	mg/L	31-OCT-21	01-NOV-21	R5633771
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Calcium (Ca)-Total	40.9		0.050	mg/L	31-OCT-21	01-NOV-21	R5633771
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	31-OCT-21	01-NOV-21	R5633771
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Copper (Cu)-Total	<0.00050		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Iron (Fe)-Total	0.333		0.010	mg/L	31-OCT-21	01-NOV-21	R5633771
Lead (Pb)-Total	<0.000050		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Lithium (Li)-Total	0.0014		0.0010	mg/L	31-OCT-21	01-NOV-21	R5633771
Magnesium (Mg)-Total	10.9		0.0050	mg/L	31-OCT-21	01-NOV-21	R5633771
Manganese (Mn)-Total	0.122		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Mercury (Hg)-Total	0.00178		0.00050	ug/L		19-NOV-21	R5654670
Molybdenum (Mo)-Total	0.000172		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Phosphorus (P)-Total	<0.050		0.050	mg/L	31-OCT-21	01-NOV-21	R5633771
Potassium (K)-Total	1.13		0.050	mg/L	31-OCT-21	01-NOV-21	R5633771
Rubidium (Rb)-Total	0.00173		0.00020	mg/L	31-OCT-21	01-NOV-21	R5633771
Selenium (Se)-Total	0.000061		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Silicon (Si)-Total	3.11		0.10	mg/L	31-OCT-21	01-NOV-21	R5633771
Silver (Ag)-Total	<0.000050		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Sodium (Na)-Total	3.92		0.050	mg/L	31-OCT-21	01-NOV-21	R5633771
Strontium (Sr)-Total	0.0779		0.0010	mg/L	31-OCT-21	01-NOV-21	R5633771
Sulfur (S)-Total	<0.50		0.50	mg/L	31-OCT-21	01-NOV-21	R5633771
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	31-OCT-21	01-NOV-21	R5633771
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	31-OCT-21	01-NOV-21	R5633771
Thorium (Th)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Tin (Sn)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Titanium (Ti)-Total	0.00069		0.00030	mg/L	31-OCT-21	01-NOV-21	R5633771
Tungsten (W)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Uranium (U)-Total	0.000036		0.000010	mg/L	31-OCT-21	01-NOV-21	R5633771
Vanadium (V)-Total	<0.00050		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2656799-5 NDR-GERK Sampled By: MG/RD on 26-OCT-21 @ 16:50 Matrix: SW							
Total Metals							
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	31-OCT-21	01-NOV-21	R5633771
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	31-OCT-21	01-NOV-21	R5633771
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					03-NOV-21	R5635135
Aluminum (Al)-Dissolved	0.0107		0.0010	mg/L	03-NOV-21	03-NOV-21	R5635916
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Arsenic (As)-Dissolved	0.00046		0.00010	mg/L	03-NOV-21	04-NOV-21	R5636599
Barium (Ba)-Dissolved	0.0195		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	03-NOV-21	03-NOV-21	R5635916
Boron (B)-Dissolved	0.013		0.010	mg/L	03-NOV-21	03-NOV-21	R5635916
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	03-NOV-21	03-NOV-21	R5635916
Calcium (Ca)-Dissolved	42.9		0.050	mg/L	03-NOV-21	03-NOV-21	R5635916
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	03-NOV-21	03-NOV-21	R5635916
Chromium (Cr)-Dissolved	0.00017		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Copper (Cu)-Dissolved	0.00020		0.00020	mg/L	03-NOV-21	03-NOV-21	R5635916
Iron (Fe)-Dissolved	0.198		0.010	mg/L	03-NOV-21	03-NOV-21	R5635916
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	03-NOV-21	03-NOV-21	R5635916
Lithium (Li)-Dissolved	0.0019		0.0010	mg/L	03-NOV-21	03-NOV-21	R5635916
Magnesium (Mg)-Dissolved	11.3		0.0050	mg/L	03-NOV-21	03-NOV-21	R5635916
Manganese (Mn)-Dissolved	0.0875		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Molybdenum (Mo)-Dissolved	0.000144		0.000050	mg/L	03-NOV-21	03-NOV-21	R5635916
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	03-NOV-21	03-NOV-21	R5635916
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	03-NOV-21	03-NOV-21	R5635916
Potassium (K)-Dissolved	1.12		0.050	mg/L	03-NOV-21	03-NOV-21	R5635916
Rubidium (Rb)-Dissolved	0.00165		0.00020	mg/L	03-NOV-21	03-NOV-21	R5635916
Selenium (Se)-Dissolved	0.000051		0.000050	mg/L	03-NOV-21	03-NOV-21	R5635916
Silicon (Si)-Dissolved	2.98		0.050	mg/L	03-NOV-21	03-NOV-21	R5635916
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	03-NOV-21	03-NOV-21	R5635916
Sodium (Na)-Dissolved	3.77		0.050	mg/L	03-NOV-21	03-NOV-21	R5635916
Strontium (Sr)-Dissolved	0.0795		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Sulfur (S)-Dissolved	0.89		0.50	mg/L	03-NOV-21	03-NOV-21	R5635916
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	03-NOV-21	03-NOV-21	R5635916
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	03-NOV-21	03-NOV-21	R5635916
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	03-NOV-21	03-NOV-21	R5635916
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Uranium (U)-Dissolved	0.000037		0.000010	mg/L	03-NOV-21	03-NOV-21	R5635916
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	03-NOV-21	03-NOV-21	R5635916

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2656799-5 NDR-GERK Sampled By: MG/RD on 26-OCT-21 @ 16:50 Matrix: SW							
Dissolved Metals							
Zinc (Zn)-Dissolved	0.0012		0.0010	mg/L	03-NOV-21	03-NOV-21	R5635916
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	03-NOV-21	03-NOV-21	R5635916
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000148		0.000020	ug/L	03-NOV-21	05-NOV-21	R5636098
L2656799-6 NDR-MARLK Sampled By: MG/RD on 26-OCT-21 @ 17:20 Matrix: SW							
Physical Tests							
Conductivity	129		1.0	umhos/cm		30-OCT-21	R5633224
Hardness (as CaCO3)	67.5	HTC	0.50	mg/L		01-NOV-21	
pH	7.64		0.10	pH units		30-OCT-21	R5633224
Total Suspended Solids	<3.0		3.0	mg/L	30-OCT-21	31-OCT-21	R5633284
Total Dissolved Solids	93	DLDS	13	mg/L		30-OCT-21	R5633293
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	68.4		1.0	mg/L		30-OCT-21	R5633224
Ammonia, Total (as N)	0.011		0.010	mg/L		04-NOV-21	R5636533
Bromide (Br)	<0.10		0.10	mg/L		01-NOV-21	R5634301
Chloride (Cl)	<0.50		0.50	mg/L		01-NOV-21	R5634301
Fluoride (F)	0.032		0.020	mg/L		01-NOV-21	R5634301
Nitrate (as N)	<0.020		0.020	mg/L		01-NOV-21	R5634301
Nitrite (as N)	<0.010		0.010	mg/L		01-NOV-21	R5634301
Phosphorus (P)-Total	0.0189		0.0010	mg/L		10-NOV-21	R5639456
Sulfate (SO4)	0.40		0.30	mg/L		01-NOV-21	R5634301
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L		02-NOV-21	R5635096
Cyanide, Total	<0.0020		0.0020	mg/L		02-NOV-21	R5635096
Cyanide, Free	<0.0020		0.0020	mg/L		02-NOV-21	R5635096
Inorganic Parameters							
Acidity (as CaCO3)	2.2		2.0	mg/L		02-NOV-21	R5634874
Total Metals							
Aluminum (Al)-Total	0.0704		0.0050	mg/L	31-OCT-21	01-NOV-21	R5633771
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Arsenic (As)-Total	0.00058		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Barium (Ba)-Total	0.00748		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Boron (B)-Total	<0.010		0.010	mg/L	31-OCT-21	01-NOV-21	R5633771
Cadmium (Cd)-Total	0.0000053		0.0000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Calcium (Ca)-Total	18.8		0.050	mg/L	31-OCT-21	01-NOV-21	R5633771
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	31-OCT-21	01-NOV-21	R5633771
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2656799-6 NDR-MARLK Sampled By: MG/RD on 26-OCT-21 @ 17:20 Matrix: SW							
Total Metals							
Copper (Cu)-Total	<0.00050		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Iron (Fe)-Total	0.280		0.010	mg/L	31-OCT-21	01-NOV-21	R5633771
Lead (Pb)-Total	0.000091		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Lithium (Li)-Total	<0.0010		0.0010	mg/L	31-OCT-21	01-NOV-21	R5633771
Magnesium (Mg)-Total	4.98		0.0050	mg/L	31-OCT-21	01-NOV-21	R5633771
Manganese (Mn)-Total	0.0436		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Mercury (Hg)-Total	0.00191		0.00050	ug/L		19-NOV-21	R5654670
Molybdenum (Mo)-Total	0.000064		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Phosphorus (P)-Total	<0.050		0.050	mg/L	31-OCT-21	01-NOV-21	R5633771
Potassium (K)-Total	0.484		0.050	mg/L	31-OCT-21	01-NOV-21	R5633771
Rubidium (Rb)-Total	0.00108		0.00020	mg/L	31-OCT-21	01-NOV-21	R5633771
Selenium (Se)-Total	0.000115		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Silicon (Si)-Total	1.74		0.10	mg/L	31-OCT-21	01-NOV-21	R5633771
Silver (Ag)-Total	<0.000050		0.000050	mg/L	31-OCT-21	01-NOV-21	R5633771
Sodium (Na)-Total	1.46		0.050	mg/L	31-OCT-21	01-NOV-21	R5633771
Strontium (Sr)-Total	0.0346		0.0010	mg/L	31-OCT-21	01-NOV-21	R5633771
Sulfur (S)-Total	<0.50		0.50	mg/L	31-OCT-21	01-NOV-21	R5633771
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	31-OCT-21	01-NOV-21	R5633771
Thallium (Tl)-Total	0.000012		0.000010	mg/L	31-OCT-21	01-NOV-21	R5633771
Thorium (Th)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Tin (Sn)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Titanium (Ti)-Total	0.00238		0.00030	mg/L	31-OCT-21	01-NOV-21	R5633771
Tungsten (W)-Total	<0.00010		0.00010	mg/L	31-OCT-21	01-NOV-21	R5633771
Uranium (U)-Total	0.000048		0.000010	mg/L	31-OCT-21	01-NOV-21	R5633771
Vanadium (V)-Total	<0.00050		0.00050	mg/L	31-OCT-21	01-NOV-21	R5633771
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	31-OCT-21	01-NOV-21	R5633771
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	31-OCT-21	01-NOV-21	R5633771
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					03-NOV-21	R5635135
Aluminum (Al)-Dissolved	0.0360		0.0010	mg/L	03-NOV-21	03-NOV-21	R5635916
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Arsenic (As)-Dissolved	0.00054		0.00010	mg/L	03-NOV-21	04-NOV-21	R5636599
Barium (Ba)-Dissolved	0.00720		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	03-NOV-21	03-NOV-21	R5635916
Boron (B)-Dissolved	<0.010		0.010	mg/L	03-NOV-21	03-NOV-21	R5635916
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	03-NOV-21	03-NOV-21	R5635916
Calcium (Ca)-Dissolved	20.1		0.050	mg/L	03-NOV-21	03-NOV-21	R5635916
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	03-NOV-21	03-NOV-21	R5635916
Chromium (Cr)-Dissolved	0.00022		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2656799-6 NDR-MARLK Sampled By: MG/RD on 26-OCT-21 @ 17:20 Matrix: SW							
Dissolved Metals							
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Copper (Cu)-Dissolved	0.00039		0.00020	mg/L	03-NOV-21	03-NOV-21	R5635916
Iron (Fe)-Dissolved	0.187		0.010	mg/L	03-NOV-21	03-NOV-21	R5635916
Lead (Pb)-Dissolved	0.000104		0.000050	mg/L	03-NOV-21	03-NOV-21	R5635916
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	03-NOV-21	03-NOV-21	R5635916
Magnesium (Mg)-Dissolved	5.07		0.0050	mg/L	03-NOV-21	03-NOV-21	R5635916
Manganese (Mn)-Dissolved	0.0330		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Molybdenum (Mo)-Dissolved	0.000057		0.000050	mg/L	03-NOV-21	03-NOV-21	R5635916
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	03-NOV-21	03-NOV-21	R5635916
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	03-NOV-21	03-NOV-21	R5635916
Potassium (K)-Dissolved	0.502		0.050	mg/L	03-NOV-21	03-NOV-21	R5635916
Rubidium (Rb)-Dissolved	0.00103		0.00020	mg/L	03-NOV-21	03-NOV-21	R5635916
Selenium (Se)-Dissolved	0.000073		0.000050	mg/L	03-NOV-21	03-NOV-21	R5635916
Silicon (Si)-Dissolved	1.66		0.050	mg/L	03-NOV-21	03-NOV-21	R5635916
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	03-NOV-21	03-NOV-21	R5635916
Sodium (Na)-Dissolved	1.43		0.050	mg/L	03-NOV-21	03-NOV-21	R5635916
Strontium (Sr)-Dissolved	0.0326		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Sulfur (S)-Dissolved	0.74		0.50	mg/L	03-NOV-21	03-NOV-21	R5635916
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	03-NOV-21	03-NOV-21	R5635916
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	03-NOV-21	03-NOV-21	R5635916
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Titanium (Ti)-Dissolved	0.00114		0.00030	mg/L	03-NOV-21	03-NOV-21	R5635916
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	03-NOV-21	03-NOV-21	R5635916
Uranium (U)-Dissolved	0.000022		0.000010	mg/L	03-NOV-21	03-NOV-21	R5635916
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	03-NOV-21	03-NOV-21	R5635916
Zinc (Zn)-Dissolved	0.0036		0.0010	mg/L	03-NOV-21	03-NOV-21	R5635916
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	03-NOV-21	03-NOV-21	R5635916
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000085		0.000020	ug/L	03-NOV-21	05-NOV-21	R5636098

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

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Laboratory Control Sample	Sulfur (S)-Dissolved	MES	L2656799-1, -2, -3, -4, -5, -6
Matrix Spike	Aluminum (Al)-Dissolved	MS-B	L2656799-1, -2, -3, -4, -5, -6
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L2656799-1, -2, -3, -4, -5, -6
Matrix Spike	Magnesium (Mg)-Dissolved	MS-B	L2656799-1, -2, -3, -4, -5, -6
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L2656799-1, -2, -3, -4, -5, -6
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L2656799-1, -2, -3, -4, -5, -6
Matrix Spike	Aluminum (Al)-Total	MS-B	L2656799-1, -2, -3, -4, -5, -6
Matrix Spike	Calcium (Ca)-Total	MS-B	L2656799-1, -2, -3, -4, -5, -6
Matrix Spike	Iron (Fe)-Total	MS-B	L2656799-1, -2, -3, -4, -5, -6
Matrix Spike	Magnesium (Mg)-Total	MS-B	L2656799-1, -2, -3, -4, -5, -6
Matrix Spike	Manganese (Mn)-Total	MS-B	L2656799-1, -2, -3, -4, -5, -6
Matrix Spike	Silicon (Si)-Total	MS-B	L2656799-1, -2, -3, -4, -5, -6
Matrix Spike	Strontium (Sr)-Total	MS-B	L2656799-1, -2, -3, -4, -5, -6
Matrix Spike	Phosphorus (P)-Total	MS-B	L2656799-1, -2, -3, -4, -5, -6

Sample Parameter Qualifier key listed:

Qualifier	Description
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
HTC	Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
PEHT	Parameter Exceeded Recommended Holding Time Prior to Analysis
RRV	Reported Result Verified By Repeat Analysis

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ACIDITY-WT	Water	Acidity (as CaCO3)	APHA 2310 B - Potentiometric Titration
ALK-WT	Water	Alkalinity, Total (as CaCO3)	APHA 2320B

This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint.

BR-IC-N-WT	Water	Bromide in Water by IC	EPA 300.1 (mod)

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

CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)

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

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-FREE-CFA-WT	Water	Free Cyanide in water by CFA	ASTM 7237

This analysis is carried out using procedures adapted from ASTM Method 7237 "Free Cyanide with Flow Injection Analysis (FIA) Utilizing Gas Diffusion Separation and Amperometric Detection". Free cyanide is determined by in-line gas diffusion at pH 6 with final determination by colourimetric analysis.

CN-TOT-WT	Water	Cyanide, Total	ISO 14403-2

Total cyanide is determined by the combination of UV digestion and distillation. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

When using this method, high levels of thiocyanate in samples can cause false positives at ~1-2% of the thiocyanate concentration. For samples with detectable cyanide analyzed by this method, ALS recommends analysis for thiocyanate to check for this potential interference

CN-WAD-WT	Water	Cyanide, Weak Acid Diss	APHA 4500CN I-Weak acid Dist Colorimet

Weak acid dissociable cyanide (WAD) is determined by undergoing a distillation procedure. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

EC-SCREEN-WT	Water	Conductivity Screen (Internal Use	APHA 2510

Reference Information

Only)

Qualitative analysis of conductivity where required during preparation of other tests - e.g. TDS, metals, etc.

EC-WT	Water	Conductivity	APHA 2510 B

Water samples can be measured directly by immersing the conductivity cell into the sample.

F-IC-N-WT	Water	Fluoride in Water by IC	EPA 300.1 (mod)

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

HARDNESS-CALC-WT	Water	Hardness	APHA 2340 B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-T-U-CVAF-VA	Water	Total Mercury in Water by CVAFS (Ultra)	EPA 1631 REV. E

This analysis is carried out using procedures adapted from Method 1631 Rev. E. by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to a purge and trap concentration step and final reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry.

MEHG-T-GCAF-VA	Water	Total Methylmercury in Water by GCAFS	EPA 1630 (mod)

This method follows Method 1630 of the US EPA. Samples are distilled under an inert gas flow to isolate methylmercury and minimize matrix interferences. The distillate is analyzed by aqueous phase ethylation, purge and trap, desorption and GC separation. The separated species are then pyrolized to elemental Hg and quantified by cold vapour atomic flourescence spectroscopy. Results are reported "as MeHg".

MET-D-CCMS-WP	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020B (mod)

Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

MET-T-CCMS-WT	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F

Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.

NO2-IC-WT	Water	Nitrite in Water by IC	EPA 300.1 (mod)

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

NO3-IC-WT	Water	Nitrate in Water by IC	EPA 300.1 (mod)

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

P-T-L-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS-L

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.

PH-WT	Water	pH	APHA 4500 H-Electrode

Water samples are analyzed directly by a calibrated pH meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days

RA226-ALPHASPEC-FC	Water	Ra226 by Alpha Spec, MDC=0.01 Bq/L	EPA 903.1

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

Reference Information

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

SOLIDS-TDS-WT	Water	Total Dissolved Solids	APHA 2540C

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

SOLIDS-TSS-WT	Water	Suspended solids	APHA 2540 D-Gravimetric

A well-mixed sample is filtered through a weighed standard glass fibre filter and the residue retained is dried in an oven at 104–1°C for a minimum of four hours or until a constant weight is achieved.

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

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

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
FC	ALS ENVIRONMENTAL - FORT COLLINS, COLORADO, USA
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2656799 Report Date: 08-DEC-21

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ACIDITY-WT	**Water**							
Batch R5634874								
WG3648666-3 DUP		**L2657480-2**						
Acidity (as CaCO3)		8.2	8.1		mg/L	1.7	20	02-NOV-21
WG3648666-2 LCS								
Acidity (as CaCO3)			114.2		%		85-115	02-NOV-21
WG3648666-1 MB								
Acidity (as CaCO3)			<2.0		mg/L		2	02-NOV-21
ALK-WT	**Water**							
Batch R5633224								
WG3649202-4 DUP		**WG3649202-3**						
Alkalinity, Total (as CaCO3)		39.0	41.1		mg/L	5.1	20	30-OCT-21
WG3649202-2 LCS								
Alkalinity, Total (as CaCO3)			98.2		%		85-115	30-OCT-21
WG3649202-1 MB								
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	30-OCT-21
BR-IC-N-WT	**Water**							
Batch R5634301								
WG3649968-9 DUP		**WG3649968-8**						
Bromide (Br)		<0.10	<0.10	RPD-NA	mg/L	N/A	20	01-NOV-21
WG3649968-7 LCS								
Bromide (Br)			96.6		%		85-115	01-NOV-21
WG3649968-6 MB								
Bromide (Br)			<0.10		mg/L		0.1	01-NOV-21
WG3649968-10 MS		**WG3649968-8**						
Bromide (Br)			95.0		%		75-125	01-NOV-21
CL-IC-N-WT	**Water**							
Batch R5634301								
WG3649968-9 DUP		**WG3649968-8**						
Chloride (Cl)		27.0	27.0		mg/L	0.0	20	01-NOV-21
WG3649968-7 LCS								
Chloride (Cl)			98.3		%		90-110	01-NOV-21
WG3649968-6 MB								
Chloride (Cl)			<0.50		mg/L		0.5	01-NOV-21
WG3649968-10 MS		**WG3649968-8**						
Chloride (Cl)			103.9		%		75-125	01-NOV-21
CN-FREE-CFA-WT	**Water**							

Quality Control Report

Workorder: L2656799 Report Date: 08-DEC-21

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-FREE-CFA-WT	**Water**							
Batch R5635096								
WG3651039-15 DUP		**WG3651039-17**						
Cyanide, Free		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	02-NOV-21
WG3651039-25 DUP		**WG3651039-27**						
Cyanide, Free		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	02-NOV-21
WG3651039-14 LCS								
Cyanide, Free			103.7		%		80-120	02-NOV-21
WG3651039-24 LCS								
Cyanide, Free			103.0		%		80-120	02-NOV-21
WG3651039-13 MB								
Cyanide, Free			<0.0020		mg/L		0.002	02-NOV-21
WG3651039-23 MB								
Cyanide, Free			<0.0020		mg/L		0.002	02-NOV-21
WG3651039-16 MS		**WG3651039-17**						
Cyanide, Free			104.8		%		75-125	02-NOV-21
WG3651039-26 MS		**WG3651039-27**						
Cyanide, Free			102.2		%		75-125	02-NOV-21
CN-TOT-WT	**Water**							
Batch R5635096								
WG3651039-15 DUP		**WG3651039-17**						
Cyanide, Total		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	02-NOV-21
WG3651039-25 DUP		**WG3651039-27**						
Cyanide, Total		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	02-NOV-21
WG3651039-14 LCS								
Cyanide, Total			96.0		%		80-120	02-NOV-21
WG3651039-24 LCS								
Cyanide, Total			96.2		%		80-120	02-NOV-21
WG3651039-13 MB								
Cyanide, Total			<0.0020		mg/L		0.002	02-NOV-21
WG3651039-23 MB								
Cyanide, Total			<0.0020		mg/L		0.002	02-NOV-21
WG3651039-16 MS		**WG3651039-17**						
Cyanide, Total			94.7		%		70-130	02-NOV-21
WG3651039-26 MS		**WG3651039-27**						
Cyanide, Total			93.1		%		70-130	02-NOV-21
CN-WAD-WT	**Water**							

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-WAD-WT	**Water**							
Batch R5635096								
WG3651039-15 DUP		**WG3651039-17**						
Cyanide, Weak Acid Diss		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	02-NOV-21
WG3651039-25 DUP		**WG3651039-27**						
Cyanide, Weak Acid Diss		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	02-NOV-21
WG3651039-14 LCS								
Cyanide, Weak Acid Diss			101.6		%		80-120	02-NOV-21
WG3651039-24 LCS								
Cyanide, Weak Acid Diss			104.5		%		80-120	02-NOV-21
WG3651039-13 MB								
Cyanide, Weak Acid Diss			<0.0020		mg/L		0.002	02-NOV-21
WG3651039-23 MB								
Cyanide, Weak Acid Diss			<0.0020		mg/L		0.002	02-NOV-21
WG3651039-16 MS		**WG3651039-17**						
Cyanide, Weak Acid Diss			106.1		%		75-125	02-NOV-21
WG3651039-26 MS		**WG3651039-27**						
Cyanide, Weak Acid Diss			101.5		%		75-125	02-NOV-21
EC-WT	**Water**							
Batch R5633224								
WG3649202-4 DUP		**WG3649202-3**						
Conductivity		77.6	75.5		umhos/cm	2.7	10	30-OCT-21
WG3649202-2 LCS								
Conductivity			101.0		%		90-110	30-OCT-21
WG3649202-1 MB								
Conductivity			<1.0		umhos/cm		1	30-OCT-21
F-IC-N-WT	**Water**							
Batch R5634301								
WG3649968-9 DUP		**WG3649968-8**						
Fluoride (F)		0.073	0.073		mg/L	0.4	20	01-NOV-21
WG3649968-7 LCS								
Fluoride (F)			102.5		%		90-110	01-NOV-21
WG3649968-6 MB								
Fluoride (F)			<0.020		mg/L		0.02	01-NOV-21
WG3649968-10 MS		**WG3649968-8**						
Fluoride (F)			99.0		%		75-125	01-NOV-21
HG-T-U-CVAF-VA	**Water**							

Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-T-U-CVAF-VA	**Water**							
Batch R5654670								
WG3661995-3 DUP		**L2656799-6**						
Mercury (Hg)-Total		0.00191	0.00163		ug/L	16	20	19-NOV-21
WG3661995-2 LCS								
Mercury (Hg)-Total			115.2		%		80-120	19-NOV-21
WG3661995-1 MB								
Mercury (Hg)-Total			<0.00050		ug/L		0.0005	19-NOV-21
WG3661995-4 MS		**L2660986-3**						
Mercury (Hg)-Total			119.4		%		70-130	19-NOV-21
MEHG-T-GCAF-VA	**Water**							
Batch R5636098								
WG3653544-2 LCS								
Methylmercury (as MeHg)-Total			94.7		%		70-130	05-NOV-21
WG3653544-1 MB								
Methylmercury (as MeHg)-Total			<0.000020		ug/L		0.00002	05-NOV-21
WG3653544-3 MS		**L2657440-2**						
Methylmercury (as MeHg)-Total			90.6		%		70-130	05-NOV-21
MET-D-CCMS-WP	**Water**							
Batch R5635916								
WG3651485-4 DUP		**WG3651485-3**						
Aluminum (Al)-Dissolved		0.331	0.355		mg/L	7.1	20	03-NOV-21
Antimony (Sb)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	03-NOV-21
Barium (Ba)-Dissolved		0.00669	0.00674		mg/L	0.8	20	03-NOV-21
Beryllium (Be)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	03-NOV-21
Bismuth (Bi)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	03-NOV-21
Boron (B)-Dissolved		<0.010	<0.010	RPD-NA	mg/L	N/A	20	03-NOV-21
Cadmium (Cd)-Dissolved		0.0000438	0.0000342	J	mg/L	0.0000096	0.00001	03-NOV-21
Calcium (Ca)-Dissolved		11.0	10.9		mg/L	0.3	20	03-NOV-21
Cesium (Cs)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	03-NOV-21
Chromium (Cr)-Dissolved		0.00092	0.00087		mg/L	5.6	20	03-NOV-21
Cobalt (Co)-Dissolved		0.00013	0.00015		mg/L	11	20	03-NOV-21
Copper (Cu)-Dissolved		0.00284	0.00221	G	mg/L	25	20	03-NOV-21
Iron (Fe)-Dissolved		0.798	0.799		mg/L	0.2	20	03-NOV-21
Lead (Pb)-Dissolved		0.000298	0.000273		mg/L	8.8	20	03-NOV-21
Lithium (Li)-Dissolved		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	03-NOV-21
Magnesium (Mg)-Dissolved		2.60	2.73		mg/L	4.7	20	03-NOV-21

Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5635916								
WG3651485-4 DUP		**WG3651485-3**						
Manganese (Mn)-Dissolved		0.0359	0.0365		mg/L	1.9	20	03-NOV-21
Molybdenum (Mo)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	03-NOV-21
Nickel (Ni)-Dissolved		0.00102	0.00104		mg/L	1.3	20	03-NOV-21
Phosphorus (P)-Dissolved		<0.030	<0.030	RPD-NA	mg/L	N/A	20	03-NOV-21
Potassium (K)-Dissolved		0.193	0.195		mg/L	0.8	20	03-NOV-21
Rubidium (Rb)-Dissolved		0.00068	0.00071		mg/L	3.8	20	03-NOV-21
Selenium (Se)-Dissolved		0.000189	0.000186		mg/L	1.1	20	03-NOV-21
Silicon (Si)-Dissolved		2.08	2.00		mg/L	3.4	20	03-NOV-21
Silver (Ag)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	03-NOV-21
Sodium (Na)-Dissolved		1.11	1.10		mg/L	0.1	20	03-NOV-21
Strontium (Sr)-Dissolved		0.0229	0.0227		mg/L	0.9	20	03-NOV-21
Sulfur (S)-Dissolved		0.93	0.90		mg/L	4.2	20	03-NOV-21
Tellurium (Te)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	03-NOV-21
Thallium (Tl)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	03-NOV-21
Thorium (Th)-Dissolved		0.00013	0.00013		mg/L	0.5	20	03-NOV-21
Tin (Sn)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	03-NOV-21
Titanium (Ti)-Dissolved		0.00797	0.00842		mg/L	5.5	20	03-NOV-21
Tungsten (W)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	03-NOV-21
Uranium (U)-Dissolved		0.000059	0.000049		mg/L	18	20	03-NOV-21
Vanadium (V)-Dissolved		0.00086	0.00080		mg/L	7.7	20	03-NOV-21
Zinc (Zn)-Dissolved		0.0078	0.0085		mg/L	9.1	20	03-NOV-21
Zirconium (Zr)-Dissolved		0.00064	0.00066		mg/L	3.2	20	03-NOV-21
WG3651485-2 LCS								
Aluminum (Al)-Dissolved			103.8		%		80-120	03-NOV-21
Antimony (Sb)-Dissolved			101.1		%		80-120	03-NOV-21
Barium (Ba)-Dissolved			100.6		%		80-120	03-NOV-21
Beryllium (Be)-Dissolved			107.0		%		80-120	03-NOV-21
Bismuth (Bi)-Dissolved			105.4		%		80-120	03-NOV-21
Boron (B)-Dissolved			98.5		%		80-120	03-NOV-21
Cadmium (Cd)-Dissolved			100.6		%		80-120	03-NOV-21
Calcium (Ca)-Dissolved			103.7		%		80-120	03-NOV-21
Cesium (Cs)-Dissolved			95.4		%		80-120	03-NOV-21
Chromium (Cr)-Dissolved			100.5		%		80-120	03-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5635916								
WG3651485-2 LCS								
Cobalt (Co)-Dissolved			100.9		%		80-120	03-NOV-21
Copper (Cu)-Dissolved			99.3		%		80-120	03-NOV-21
Iron (Fe)-Dissolved			96.3		%		80-120	03-NOV-21
Lead (Pb)-Dissolved			100.4		%		80-120	03-NOV-21
Lithium (Li)-Dissolved			105.0		%		80-120	03-NOV-21
Magnesium (Mg)-Dissolved			115.0		%		80-120	03-NOV-21
Manganese (Mn)-Dissolved			98.8		%		80-120	03-NOV-21
Molybdenum (Mo)-Dissolved			102.3		%		80-120	03-NOV-21
Nickel (Ni)-Dissolved			98.9		%		80-120	03-NOV-21
Phosphorus (P)-Dissolved			105.1		%		80-120	03-NOV-21
Potassium (K)-Dissolved			104.7		%		80-120	03-NOV-21
Rubidium (Rb)-Dissolved			103.0		%		80-120	03-NOV-21
Selenium (Se)-Dissolved			100.3		%		80-120	03-NOV-21
Silicon (Si)-Dissolved			100.6		%		80-120	03-NOV-21
Silver (Ag)-Dissolved			93.6		%		80-120	03-NOV-21
Sodium (Na)-Dissolved			104.9		%		80-120	03-NOV-21
Strontium (Sr)-Dissolved			99.4		%		80-120	03-NOV-21
Sulfur (S)-Dissolved			120.3	MES	%		80-120	03-NOV-21
Tellurium (Te)-Dissolved			95.0		%		80-120	03-NOV-21
Thallium (Tl)-Dissolved			99.3		%		80-120	03-NOV-21
Thorium (Th)-Dissolved			94.4		%		80-120	03-NOV-21
Tin (Sn)-Dissolved			99.7		%		80-120	03-NOV-21
Titanium (Ti)-Dissolved			98.4		%		80-120	03-NOV-21
Tungsten (W)-Dissolved			99.2		%		80-120	03-NOV-21
Uranium (U)-Dissolved			97.8		%		80-120	03-NOV-21
Vanadium (V)-Dissolved			102.7		%		80-120	03-NOV-21
Zinc (Zn)-Dissolved			98.1		%		80-120	03-NOV-21
Zirconium (Zr)-Dissolved			93.5		%		80-120	03-NOV-21
WG3651485-1 MB								
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	03-NOV-21
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	03-NOV-21
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	03-NOV-21
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	03-NOV-21
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	03-NOV-21

Quality Control Report

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Mississauga ON L4Z 3K7
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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5635916								
WG3651485-1 MB								
Boron (B)-Dissolved			<0.010		mg/L		0.01	03-NOV-21
Cadmium (Cd)-Dissolved			<0.000005(		mg/L		0.000005	03-NOV-21
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	03-NOV-21
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	03-NOV-21
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	03-NOV-21
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	03-NOV-21
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	03-NOV-21
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	03-NOV-21
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	03-NOV-21
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	03-NOV-21
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	03-NOV-21
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	03-NOV-21
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	03-NOV-21
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	03-NOV-21
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	03-NOV-21
Potassium (K)-Dissolved			<0.050		mg/L		0.05	03-NOV-21
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	03-NOV-21
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	03-NOV-21
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	03-NOV-21
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	03-NOV-21
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	03-NOV-21
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	03-NOV-21
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	03-NOV-21
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	03-NOV-21
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	03-NOV-21
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	03-NOV-21
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	03-NOV-21
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	03-NOV-21
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	03-NOV-21
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	03-NOV-21
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	03-NOV-21
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	03-NOV-21
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	03-NOV-21
WG3651485-5 MS		**WG3651485-3**						

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5635916								
WG3651485-5 MS		**WG3651485-3**						
Aluminum (Al)-Dissolved			N/A	MS-B	%		-	03-NOV-21
Antimony (Sb)-Dissolved			100.8		%		70-130	03-NOV-21
Barium (Ba)-Dissolved			99.5		%		70-130	03-NOV-21
Beryllium (Be)-Dissolved			103.8		%		70-130	03-NOV-21
Bismuth (Bi)-Dissolved			92.5		%		70-130	03-NOV-21
Boron (B)-Dissolved			98.0		%		70-130	03-NOV-21
Cadmium (Cd)-Dissolved			99.0		%		70-130	03-NOV-21
Calcium (Ca)-Dissolved			N/A	MS-B	%		-	03-NOV-21
Cesium (Cs)-Dissolved			93.7		%		70-130	03-NOV-21
Chromium (Cr)-Dissolved			96.2		%		70-130	03-NOV-21
Cobalt (Co)-Dissolved			97.1		%		70-130	03-NOV-21
Copper (Cu)-Dissolved			92.0		%		70-130	03-NOV-21
Iron (Fe)-Dissolved			94.1		%		70-130	03-NOV-21
Lead (Pb)-Dissolved			95.9		%		70-130	03-NOV-21
Lithium (Li)-Dissolved			103.0		%		70-130	03-NOV-21
Magnesium (Mg)-Dissolved			N/A	MS-B	%		-	03-NOV-21
Manganese (Mn)-Dissolved			N/A	MS-B	%		-	03-NOV-21
Molybdenum (Mo)-Dissolved			95.7		%		70-130	03-NOV-21
Nickel (Ni)-Dissolved			96.0		%		70-130	03-NOV-21
Phosphorus (P)-Dissolved			96.0		%		70-130	03-NOV-21
Potassium (K)-Dissolved			99.6		%		70-130	03-NOV-21
Rubidium (Rb)-Dissolved			95.1		%		70-130	03-NOV-21
Selenium (Se)-Dissolved			101.9		%		70-130	03-NOV-21
Silicon (Si)-Dissolved			93.6		%		70-130	03-NOV-21
Silver (Ag)-Dissolved			97.0		%		70-130	03-NOV-21
Sodium (Na)-Dissolved			97.3		%		70-130	03-NOV-21
Strontium (Sr)-Dissolved			N/A	MS-B	%		-	03-NOV-21
Sulfur (S)-Dissolved			92.1		%		70-130	03-NOV-21
Tellurium (Te)-Dissolved			96.4		%		70-130	03-NOV-21
Thallium (Tl)-Dissolved			91.7		%		70-130	03-NOV-21
Thorium (Th)-Dissolved			92.5		%		70-130	03-NOV-21
Tin (Sn)-Dissolved			96.4		%		70-130	03-NOV-21
Titanium (Ti)-Dissolved			100.9		%		70-130	03-NOV-21

Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5635916								
WG3651485-5 MS		**WG3651485-3**						
Tungsten (W)-Dissolved			98.2		%		70-130	03-NOV-21
Uranium (U)-Dissolved			90.3		%		70-130	03-NOV-21
Vanadium (V)-Dissolved			97.7		%		70-130	03-NOV-21
Zinc (Zn)-Dissolved			98.0		%		70-130	03-NOV-21
Zirconium (Zr)-Dissolved			98.3		%		70-130	03-NOV-21
MET-T-CCMS-WT	**Water**							
Batch R5633771								
WG3649450-4 DUP		**WG3649450-3**						
Aluminum (Al)-Total		0.733	0.774		mg/L	5.4	20	01-NOV-21
Antimony (Sb)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	01-NOV-21
Arsenic (As)-Total		0.00145	0.00150		mg/L	3.7	20	01-NOV-21
Barium (Ba)-Total		0.00948	0.00934		mg/L	1.5	20	01-NOV-21
Beryllium (Be)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	01-NOV-21
Bismuth (Bi)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	01-NOV-21
Boron (B)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	01-NOV-21
Cadmium (Cd)-Total		0.0000406	0.0000467		mg/L	14	20	01-NOV-21
Calcium (Ca)-Total		10.4	10.5		mg/L	1.3	20	01-NOV-21
Chromium (Cr)-Total		0.00171	0.00178		mg/L	4.0	20	01-NOV-21
Cesium (Cs)-Total		0.000043	0.000043		mg/L	0.2	20	01-NOV-21
Cobalt (Co)-Total		0.00033	0.00032		mg/L	3.3	20	01-NOV-21
Copper (Cu)-Total		0.00265	0.00257		mg/L	2.9	20	01-NOV-21
Iron (Fe)-Total		1.25	1.29		mg/L	3.2	20	01-NOV-21
Lead (Pb)-Total		0.000454	0.000447		mg/L	1.6	20	01-NOV-21
Lithium (Li)-Total		0.0010	<0.0010	RPD-NA	mg/L	N/A	20	01-NOV-21
Magnesium (Mg)-Total		2.83	2.94		mg/L	3.7	20	01-NOV-21
Manganese (Mn)-Total		0.0500	0.0503		mg/L	0.7	20	01-NOV-21
Molybdenum (Mo)-Total		0.000066	<0.000050	RPD-NA	mg/L	N/A	20	01-NOV-21
Nickel (Ni)-Total		0.00155	0.00157		mg/L	1.4	20	01-NOV-21
Phosphorus (P)-Total		<0.050	<0.050	RPD-NA	mg/L	N/A	20	01-NOV-21
Potassium (K)-Total		0.292	0.313		mg/L	7.1	20	01-NOV-21
Rubidium (Rb)-Total		0.00139	0.00146		mg/L	4.9	20	01-NOV-21
Selenium (Se)-Total		0.000219	0.000234		mg/L	6.7	20	01-NOV-21
Silicon (Si)-Total		2.93	3.04		mg/L	3.9	20	01-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5633771								
WG3649450-4 DUP		**WG3649450-3**						
Silver (Ag)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	01-NOV-21
Sodium (Na)-Total		1.24	1.33		mg/L	7.1	20	01-NOV-21
Strontium (Sr)-Total		0.0258	0.0247		mg/L	4.2	20	01-NOV-21
Sulfur (S)-Total		0.56	0.59		mg/L	5.9	20	01-NOV-21
Thallium (Tl)-Total		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	01-NOV-21
Tellurium (Te)-Total		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	01-NOV-21
Thorium (Th)-Total		0.00017	0.00016		mg/L	2.7	20	01-NOV-21
Tin (Sn)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	01-NOV-21
Titanium (Ti)-Total		0.0243	0.0255		mg/L	4.8	20	01-NOV-21
Tungsten (W)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	01-NOV-21
Uranium (U)-Total		0.000068	0.000068		mg/L	1.3	20	01-NOV-21
Vanadium (V)-Total		0.00146	0.00152		mg/L	3.5	20	01-NOV-21
Zinc (Zn)-Total		0.0094	0.0091		mg/L	3.8	20	01-NOV-21
Zirconium (Zr)-Total		0.00085	0.00084		mg/L	1.0	20	01-NOV-21
WG3649450-2 LCS								
Aluminum (Al)-Total			99.5		%		80-120	01-NOV-21
Antimony (Sb)-Total			99.5		%		80-120	01-NOV-21
Arsenic (As)-Total			100.0		%		80-120	01-NOV-21
Barium (Ba)-Total			100.8		%		80-120	01-NOV-21
Beryllium (Be)-Total			96.0		%		80-120	01-NOV-21
Bismuth (Bi)-Total			100.9		%		80-120	01-NOV-21
Boron (B)-Total			89.3		%		80-120	01-NOV-21
Cadmium (Cd)-Total			97.2		%		80-120	01-NOV-21
Calcium (Ca)-Total			96.5		%		80-120	01-NOV-21
Chromium (Cr)-Total			101.2		%		80-120	01-NOV-21
Cesium (Cs)-Total			97.7		%		80-120	01-NOV-21
Cobalt (Co)-Total			99.6		%		80-120	01-NOV-21
Copper (Cu)-Total			98.6		%		80-120	01-NOV-21
Iron (Fe)-Total			100.7		%		80-120	01-NOV-21
Lead (Pb)-Total			100.4		%		80-120	01-NOV-21
Lithium (Li)-Total			95.3		%		80-120	01-NOV-21
Magnesium (Mg)-Total			112.2		%		80-120	01-NOV-21
Manganese (Mn)-Total			101.2		%		80-120	01-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5633771								
WG3649450-2 LCS								
Molybdenum (Mo)-Total			101.4		%		80-120	01-NOV-21
Nickel (Ni)-Total			99.4		%		80-120	01-NOV-21
Phosphorus (P)-Total			97.3		%		70-130	01-NOV-21
Potassium (K)-Total			98.7		%		80-120	01-NOV-21
Rubidium (Rb)-Total			103.9		%		80-120	01-NOV-21
Selenium (Se)-Total			99.8		%		80-120	01-NOV-21
Silicon (Si)-Total			98.7		%		60-140	01-NOV-21
Silver (Ag)-Total			101.3		%		80-120	01-NOV-21
Sodium (Na)-Total			102.7		%		80-120	01-NOV-21
Strontium (Sr)-Total			100.5		%		80-120	01-NOV-21
Sulfur (S)-Total			94.6		%		80-120	01-NOV-21
Thallium (Tl)-Total			98.5		%		80-120	01-NOV-21
Tellurium (Te)-Total			94.6		%		80-120	01-NOV-21
Thorium (Th)-Total			102.1		%		80-120	01-NOV-21
Tin (Sn)-Total			98.0		%		80-120	01-NOV-21
Titanium (Ti)-Total			99.8		%		80-120	01-NOV-21
Tungsten (W)-Total			99.4		%		80-120	01-NOV-21
Uranium (U)-Total			101.3		%		80-120	01-NOV-21
Vanadium (V)-Total			102.0		%		80-120	01-NOV-21
Zinc (Zn)-Total			95.3		%		80-120	01-NOV-21
Zirconium (Zr)-Total			96.1		%		80-120	01-NOV-21
WG3649450-1 MB								
Aluminum (Al)-Total			<0.0050		mg/L		0.005	01-NOV-21
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	01-NOV-21
Arsenic (As)-Total			<0.00010		mg/L		0.0001	01-NOV-21
Barium (Ba)-Total			<0.00010		mg/L		0.0001	01-NOV-21
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	01-NOV-21
Bismuth (Bi)-Total			<0.000050		mg/L		0.00005	01-NOV-21
Boron (B)-Total			<0.010		mg/L		0.01	01-NOV-21
Cadmium (Cd)-Total			<0.000005C		mg/L		0.000005	01-NOV-21
Calcium (Ca)-Total			<0.050		mg/L		0.05	01-NOV-21
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	01-NOV-21
Cesium (Cs)-Total			<0.000010		mg/L		0.00001	01-NOV-21
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	01-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5633771								
WG3649450-1 MB								
Copper (Cu)-Total			<0.00050		mg/L		0.0005	01-NOV-21
Iron (Fe)-Total			<0.010		mg/L		0.01	01-NOV-21
Lead (Pb)-Total			<0.000050		mg/L		0.00005	01-NOV-21
Lithium (Li)-Total			<0.0010		mg/L		0.001	01-NOV-21
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	01-NOV-21
Manganese (Mn)-Total			<0.00050		mg/L		0.0005	01-NOV-21
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	01-NOV-21
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	01-NOV-21
Phosphorus (P)-Total			<0.050		mg/L		0.05	01-NOV-21
Potassium (K)-Total			<0.050		mg/L		0.05	01-NOV-21
Rubidium (Rb)-Total			<0.00020		mg/L		0.0002	01-NOV-21
Selenium (Se)-Total			<0.000050		mg/L		0.00005	01-NOV-21
Silicon (Si)-Total			<0.10		mg/L		0.1	01-NOV-21
Silver (Ag)-Total			<0.000050		mg/L		0.00005	01-NOV-21
Sodium (Na)-Total			<0.050		mg/L		0.05	01-NOV-21
Strontium (Sr)-Total			<0.0010		mg/L		0.001	01-NOV-21
Sulfur (S)-Total			<0.50		mg/L		0.5	01-NOV-21
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	01-NOV-21
Tellurium (Te)-Total			<0.00020		mg/L		0.0002	01-NOV-21
Thorium (Th)-Total			<0.00010		mg/L		0.0001	01-NOV-21
Tin (Sn)-Total			<0.00010		mg/L		0.0001	01-NOV-21
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	01-NOV-21
Tungsten (W)-Total			<0.00010		mg/L		0.0001	01-NOV-21
Uranium (U)-Total			<0.000010		mg/L		0.00001	01-NOV-21
Vanadium (V)-Total			<0.00050		mg/L		0.0005	01-NOV-21
Zinc (Zn)-Total			<0.0030		mg/L		0.003	01-NOV-21
Zirconium (Zr)-Total			<0.00020		mg/L		0.0002	01-NOV-21
WG3649450-5 MS		**WG3649450-6**						
Aluminum (Al)-Total			N/A	MS-B	%		-	01-NOV-21
Antimony (Sb)-Total			105.9		%		70-130	01-NOV-21
Arsenic (As)-Total			110.0		%		70-130	01-NOV-21
Barium (Ba)-Total			98.5		%		70-130	01-NOV-21
Beryllium (Be)-Total			104.7		%		70-130	01-NOV-21
Bismuth (Bi)-Total			104.6		%		70-130	01-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5633771								
WG3649450-5 MS		**WG3649450-6**						
Boron (B)-Total			99.1		%		70-130	01-NOV-21
Cadmium (Cd)-Total			104.2		%		70-130	01-NOV-21
Calcium (Ca)-Total			N/A	MS-B	%		-	01-NOV-21
Chromium (Cr)-Total			108.0		%		70-130	01-NOV-21
Cesium (Cs)-Total			101.2		%		70-130	01-NOV-21
Cobalt (Co)-Total			109.5		%		70-130	01-NOV-21
Copper (Cu)-Total			108.5		%		70-130	01-NOV-21
Iron (Fe)-Total			N/A	MS-B	%		-	01-NOV-21
Lead (Pb)-Total			99.2		%		70-130	01-NOV-21
Lithium (Li)-Total			104.5		%		70-130	01-NOV-21
Magnesium (Mg)-Total			N/A	MS-B	%		-	01-NOV-21
Manganese (Mn)-Total			N/A	MS-B	%		-	01-NOV-21
Molybdenum (Mo)-Total			105.1		%		70-130	01-NOV-21
Nickel (Ni)-Total			106.5		%		70-130	01-NOV-21
Phosphorus (P)-Total			112.2		%		70-130	01-NOV-21
Potassium (K)-Total			111.2		%		70-130	01-NOV-21
Rubidium (Rb)-Total			111.6		%		70-130	01-NOV-21
Selenium (Se)-Total			109.8		%		70-130	01-NOV-21
Silicon (Si)-Total			N/A	MS-B	%		-	01-NOV-21
Silver (Ag)-Total			103.5		%		70-130	01-NOV-21
Sodium (Na)-Total			105.2		%		70-130	01-NOV-21
Strontium (Sr)-Total			N/A	MS-B	%		-	01-NOV-21
Sulfur (S)-Total			109.7		%		70-130	01-NOV-21
Thallium (Tl)-Total			101.7		%		70-130	01-NOV-21
Tellurium (Te)-Total			97.7		%		70-130	01-NOV-21
Thorium (Th)-Total			98.4		%		70-130	01-NOV-21
Tin (Sn)-Total			101.1		%		70-130	01-NOV-21
Titanium (Ti)-Total			109.4		%		70-130	01-NOV-21
Tungsten (W)-Total			100.5		%		70-130	01-NOV-21
Uranium (U)-Total			101.2		%		70-130	01-NOV-21
Vanadium (V)-Total			112.4		%		70-130	01-NOV-21
Zinc (Zn)-Total			104.0		%		70-130	01-NOV-21
Zirconium (Zr)-Total			86.6		%		70-130	01-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NH3-COL-WP	**Water**							
Batch R5636533								
WG3653060-3 DUP		**L2658055-3**						
Ammonia, Total (as N)		0.026	0.027		mg/L	1.5	20	04-NOV-21
WG3653060-2 LCS								
Ammonia, Total (as N)			98.4		%		85-115	04-NOV-21
WG3653060-1 MB								
Ammonia, Total (as N)			<0.010		mg/L		0.01	04-NOV-21
WG3653060-4 MS		**L2658055-3**						
Ammonia, Total (as N)			88.7		%		75-125	04-NOV-21
NO2-IC-WT	**Water**							
Batch R5634301								
WG3649968-9 DUP		**WG3649968-8**						
Nitrite (as N)		<0.010	<0.010	RPD-NA	mg/L	N/A	20	01-NOV-21
WG3649968-7 LCS								
Nitrite (as N)			97.9		%		90-110	01-NOV-21
WG3649968-6 MB								
Nitrite (as N)			<0.010		mg/L		0.01	01-NOV-21
WG3649968-10 MS		**WG3649968-8**						
Nitrite (as N)			103.3		%		75-125	01-NOV-21
NO3-IC-WT	**Water**							
Batch R5634301								
WG3649968-9 DUP		**WG3649968-8**						
Nitrate (as N)		1.28	1.28		mg/L	0.1	20	01-NOV-21
WG3649968-7 LCS								
Nitrate (as N)			97.8		%		90-110	01-NOV-21
WG3649968-6 MB								
Nitrate (as N)			<0.020		mg/L		0.02	01-NOV-21
WG3649968-10 MS		**WG3649968-8**						
Nitrate (as N)			103.2		%		75-125	01-NOV-21
P-T-L-COL-WP	**Water**							
Batch R5639456								
WG3652509-3 DUP		**L2655497-1**						
Phosphorus (P)-Total		0.0265	0.0272		mg/L	2.5	20	10-NOV-21
WG3652509-2 LCS								
Phosphorus (P)-Total			85.7		%		80-120	10-NOV-21
WG3652509-1 MB								
Phosphorus (P)-Total			<0.0010		mg/L		0.001	10-NOV-21
WG3652509-4 MS		**L2655497-2**						

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
P-T-L-COL-WP	**Water**							
Batch R5639456								
WG3652509-4 MS		**L2655497-2**						
Phosphorus (P)-Total			N/A	MS-B	%		-	10-NOV-21
PH-WT	**Water**							
Batch R5633224								
WG3649202-4 DUP		**WG3649202-3**						
pH		7.54	7.59	J	pH units	0.05	0.2	30-OCT-21
WG3649202-2 LCS								
pH			7.01		pH units		6.9-7.1	30-OCT-21
SO4-IC-N-WT	**Water**							
Batch R5634301								
WG3649968-9 DUP		**WG3649968-8**						
Sulfate (SO4)		26.9	26.9		mg/L	0.1	20	01-NOV-21
WG3649968-7 LCS								
Sulfate (SO4)			99.0		%		90-110	01-NOV-21
WG3649968-6 MB								
Sulfate (SO4)			<0.30		mg/L		0.3	01-NOV-21
WG3649968-10 MS		**WG3649968-8**						
Sulfate (SO4)			106.8		%		75-125	01-NOV-21
SOLIDS-TDS-WT	**Water**							
Batch R5633293								
WG3649002-3 DUP		**L2656799-3**						
Total Dissolved Solids		82	83		mg/L	1.2	20	30-OCT-21
WG3649002-2 LCS								
Total Dissolved Solids			98.4		%		85-115	30-OCT-21
WG3649002-1 MB								
Total Dissolved Solids			<10		mg/L		10	30-OCT-21
SOLIDS-TSS-WT	**Water**							
Batch R5633284								
WG3649001-3 DUP		**L2656799-3**						
Total Suspended Solids		<3.0	<3.0	RPD-NA	mg/L	N/A	20	31-OCT-21
WG3649001-2 LCS								
Total Suspended Solids			103.7		%		85-115	31-OCT-21
WG3649001-1 MB								
Total Suspended Solids			<3.0		mg/L		3	31-OCT-21

Quality Control Report

Workorder: L2656799 Report Date: 08-DEC-21

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Legend:

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

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

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

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

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

Tuesday, December 07, 2021

Gayle Braun
ALS Environmental
60 Northland Rd, Unit 1
Waterloo Canada, ON N2V 2B8

Re: ALS Workorder: 2111169
Project Name:
Project Number: L2656799

Dear Braun:

One water sample was received from ALS Environmental, on 11/5/2021. The sample was scheduled for the following analysis:

Isotopic Radium

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

<original signed by>
For
ALS Environmental
Kelley M. Beyers
Project Manager

Accreditations: ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
Arizona	AZ0828
California (CA)	2926
Colorado (CO)	CO01099
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
Oklahoma	1301
PJLA (DoD ELAP/ISO 170250)	95377
PJLA (DOE-AP/ISO 17025)	95377
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO010992018-1
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	TN02976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280
Virginia	460305

40 CFR Part 136: All analyses for Clean Water Act samples are analyzed using the 40 CFR Part 136 specified method and include all the QC requirements.

2111169

Isotopic Radium:

The sample was analyzed for the presence of isotopic radium by alpha spectroscopy according to the current revision of SOP 714.

All acceptance criteria were met.

ALS -- Fort Collins

Sample Number(s) Cross-Reference Table

OrderNum: 2111169
Client Name: ALS Environmental
Client Project Name:
Client Project Number: L2656799
Client PO Number: L2656799

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
L2656799-2	2111169-1		WATER	25-Oct-21	

ALS Environmental

L2656799

MISSISSAUGA

KMB 2111169

Subcontract Request Form

Subcontract To:

ALS ENVIRONMENTAL - FORT COLLINS, COLORADO, USA
225 COMMERCE DRIVE
FORT COLLINS,CO 80524

NOTES: Please reference on final report and invoice: PO# *L2656799*
ALS requires QC data to be provided with your final results.

Please see enclosed 1 sample(s) in 1 Container(s)

SAMPLE NUMBER	ANALYTICAL REQUIRED	DATE SAMPLED / DUE DATE	Priority Flag
L2656799-2 WBR-S-01		**10/25/2021**	
	Ra226 by Alpha Spec, MDC=0.01 Bq/L (RA226-ALPHASPEC-FC 1)	11/22/2021	

Subcontract Info Contact: Amanda Fazekas (905) 507-6910
Analysis and reporting info contact: Gayle Braun
5730 COOPERS AVENUE, UNIT #26
MISSISSAUGA,ON L4Z 2E9
Phone: (905) 507-6910 Email: gayle.braun@alsglobal.com

Please email confirmation of receipt to: gayle.braun@alsglobal.com

Shipped By: _____ Date Shipped: _____

Received By: <original signed by> Date Received: 11-5-21 1400

Verified By: _____ Date Verified: _____

Temperature: 8.9°C

Sample Integrity Issues: _____

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: ALS CANADA Workorder No: 2111169

Project Manager: KMB Initials: KC Date: 11/05/2021

		N/A	YES	NO
1.	Are airbills / shipping documents present and/or removable?		X	
	Tracking number: 61 1360 1174			
2.	Are custody seals on shipping containers intact?	X		
3.	Are custody seals on sample containers intact?	X		
4.	Is there a COC (chain-of-custody) present?		X	
5.	Is the COC in agreement with samples received? (IDs, dates, times, # of samples, # of containers, matrix, requested analyses, etc.)		X	
6.	Are short-hold samples present?			X
7.	Are all samples within holding times for the requested analyses?		X	
8.	Were all sample containers received intact? (not broken or leaking)		X	
9.	Is there sufficient sample for the requested analyses?		X	
10.	Are samples in proper containers for requested analyses? (form 250, *Sample Handling Guidelines*)		X	
11.	Are all aqueous samples preserved correctly, if required? (excluding volatiles)		X	
12.	Are all samples requiring no headspace (VOC, GRO, RSK/MEE, radon) free of bubbles > 6 mm (1/4 inch) diameter? (i.e. size of green pea)	X		
13.	Were the samples shipped on ice?		X	
14.	Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #5	RAD ONLY		X

Cooler #:	1						
Temperature (°C):	8.9						
# of custody seals on cooler:	0						
External µR/hr reading:	9						
Background µR/hr reading:	11						

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? YES

* Please provide details here for NO responses to boxes above - for 2 thru 5 & 7 thru 12, notify PM & continue w/ login.

Were unpreserved bottles pH checked? NA All client bottle ID's vs ALS lab ID's double-checked by:KC

If applicable, was the client contacted? YES / NO / NA Contact: _____ Date/Time: _____

Project Manager Signature / Date: ___<original signed by> _____

Form 201r29.xls
(10/15/2019)

*IR Gun #3, VWR SN 170647571
*IR Gun #5, VWR SN 192272629

Client:	ALS Environmental	**Date:**	*07-Dec-21*
Project:	L2656799	**Work Order:**	2111169
Sample ID:	L2656799-2	**Lab ID:**	2111169-1
Legal Location:		**Matrix:**	WATER
Collection Date:	10/25/2021	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Isotopic Radium by Alpha Spectroscopy			**SOP 714**		Prep Date: **11/18/2021**	PrepBy: **HLR**
Tracer: At-217	*71.3*		*30-110*	*%REC*	DL = NA	11/24/2021 16:13
Ra-226	**0.0031 (+/- 0.00080)**		**0.0015**	**BQ/l**	NA	11/24/2021 16:13

Client:	ALS Environmental	**Date:**	*07-Dec-21*
Project:	L2656799	**Work Order:**	2111169
Sample ID:	L2656799-2	**Lab ID:**	2111169-1
Legal Location:		**Matrix:**	WATER
Collection Date:	10/25/2021	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed

Explanation of Qualifiers

Radiochemistry:

- "Report Limit" is the MDC

U or ND - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.
# - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.
G - Sample density differs by more than 15% of LCS density.
D - DER is greater than Control Limit

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).

U or ND - Indicates that the compound was analyzed for but not detected.

E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.

M - Duplicate injection precision was not met.

N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.

Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.

* - Duplicate analysis (relative percent difference) not within control limits.

S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.

B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.

E - Analyte concentration exceeds the upper level of the calibration range.

J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).

A - A tentatively identified compound is a suspected aldol-condensation product.

X - The analyte was diluted below an accurate quantitation level.

* - The spike recovery is equal to or outside the control criteria used.

+ - The relative percent difference (RPD) equals or exceeds the control criteria.

G - A pattern resembling gasoline was detected in this sample.

D - A pattern resembling diesel was detected in this sample.

M - A pattern resembling motor oil was detected in this sample.

C - A pattern resembling crude oil was detected in this sample.

4 - A pattern resembling JP-4 was detected in this sample.

5 - A pattern resembling JP-5 was detected in this sample.

H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.

L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.

Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
- gasoline
- JP-8
- diesel
- mineral spirits
- motor oil
- Stoddard solvent
- bunker C

Batch ID: **RAS211118-1-1** Instrument ID **AlphaSpec2** Method: **Isotopic Radium by Alpha Spect**

LCS Sample ID: **RAS211118-1** Units: **BQ/l** Analysis Date: **11/24/2021 16:13**

Client ID: Run ID: **RAS211118-1** Prep Date: **11/18/2021** DF: **NA**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	DER Ref	DER	DER Limit	Qual
Tracer: At-217	0.0187	0.000151	0.0279		67	30-110					
Ra-226	0.333 (+/- 0.0218)	0.0022	0.3435		96.9	80-120					P

MB Sample ID: **RAS211118-1** Units: **BQ/l** Analysis Date: **11/24/2021 16:13**

Client ID: Run ID: **RAS211118-1** Prep Date: **11/18/2021** DF: **NA**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	DER Ref	DER	DER Limit	Qual
Tracer: At-217	0.0202	0.000159	0.0279		72.6	30-110					
Ra-226	0.0015 (+/- 0.00060)	0.0022									U

The following samples were analyzed in this batch: 2111169-1

Wood Environment & Infrastructure Solutions
ATTN: Dale Klodnicki
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7

Date Received: 29-OCT-21
Report Date: 18-NOV-21 19:40 (MT)
Version: FINAL

Client Phone: 905-568-2929

Certificate of Analysis

Lab Work Order #: L2657480

Project P.O. #: OMEMA2002.2021C.200.5120.573000
Job Reference: OMEMA2002
C of C Numbers:
Legal Site Desc:

<original signed by>

Gayle Braun
Senior Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657480-1 NDR-TRIB-01 Sampled By: TB/MG on 19-OCT-21 @ 13:20 Matrix: SW							
Physical Tests							
Conductivity	124		1.0	umhos/cm		02-NOV-21	R5635996
Hardness (as CaCO3)	69.0	HTC	0.50	mg/L		04-NOV-21	
pH	7.82	PEHR	0.10	pH units		02-NOV-21	R5635996
Total Suspended Solids	6.6		3.0	mg/L	10-NOV-21	11-NOV-21	R5641839
Total Dissolved Solids	74	RRR	13	mg/L		10-NOV-21	R5642399
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	68.9		1.0	mg/L		02-NOV-21	R5635996
Ammonia, Total (as N)	0.024		0.010	mg/L		04-NOV-21	R5636533
Bromide (Br)	<0.10		0.10	mg/L		03-NOV-21	R5635989
Chloride (Cl)	<0.50		0.50	mg/L		03-NOV-21	R5635989
Fluoride (F)	0.030		0.020	mg/L		03-NOV-21	R5635989
Nitrate (as N)	<0.020		0.020	mg/L		03-NOV-21	R5635989
Nitrite (as N)	<0.010		0.010	mg/L		03-NOV-21	R5635989
Phosphorus (P)-Total	0.0180		0.0010	mg/L		17-NOV-21	R5652956
Sulfate (SO4)	0.33		0.30	mg/L		03-NOV-21	R5635989
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L		01-NOV-21	R5634428
Cyanide, Total	<0.0020		0.0020	mg/L		01-NOV-21	R5634428
Cyanide, Free	<0.0020		0.0020	mg/L		01-NOV-21	R5634428
Inorganic Parameters							
Acidity (as CaCO3)	10.5		2.0	mg/L		02-NOV-21	R5634874
Total Metals							
Aluminum (Al)-Total	0.0491		0.0050	mg/L	01-NOV-21	03-NOV-21	R5634397
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Arsenic (As)-Total	0.00056		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Barium (Ba)-Total	0.00702		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Boron (B)-Total	<0.010		0.010	mg/L	01-NOV-21	02-NOV-21	R5634397
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Calcium (Ca)-Total	19.0		0.050	mg/L	01-NOV-21	02-NOV-21	R5634397
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	01-NOV-21	02-NOV-21	R5634397
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	01-NOV-21	03-NOV-21	R5634397
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Copper (Cu)-Total	0.00053		0.00050	mg/L	01-NOV-21	02-NOV-21	R5634397
Iron (Fe)-Total	0.220		0.010	mg/L	01-NOV-21	02-NOV-21	R5634397
Lead (Pb)-Total	0.000056		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Lithium (Li)-Total	<0.0010		0.0010	mg/L	01-NOV-21	02-NOV-21	R5634397
Magnesium (Mg)-Total	5.22		0.0050	mg/L	01-NOV-21	02-NOV-21	R5634397
Manganese (Mn)-Total	0.0387		0.00050	mg/L	01-NOV-21	02-NOV-21	R5634397
Mercury (Hg)-Total	0.00107		0.00050	ug/L		17-NOV-21	R5652727
Molybdenum (Mo)-Total	0.000066		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657480-1 NDR-TRIB-01 Sampled By: TB/MG on 19-OCT-21 @ 13:20 Matrix: SW							
Total Metals							
Nickel (Ni)-Total	0.00067		0.00050	mg/L	01-NOV-21	02-NOV-21	R5634397
Phosphorus (P)-Total	<0.050		0.050	mg/L	01-NOV-21	02-NOV-21	R5634397
Potassium (K)-Total	0.483		0.050	mg/L	01-NOV-21	02-NOV-21	R5634397
Rubidium (Rb)-Total	0.00119		0.00020	mg/L	01-NOV-21	02-NOV-21	R5634397
Selenium (Se)-Total	0.000083		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Silicon (Si)-Total	1.51		0.10	mg/L	01-NOV-21	02-NOV-21	R5634397
Silver (Ag)-Total	<0.000050		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Sodium (Na)-Total	1.44		0.050	mg/L	01-NOV-21	02-NOV-21	R5634397
Strontium (Sr)-Total	0.0318		0.0010	mg/L	01-NOV-21	02-NOV-21	R5634397
Sulfur (S)-Total	<0.50		0.50	mg/L	01-NOV-21	02-NOV-21	R5634397
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-NOV-21	02-NOV-21	R5634397
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	01-NOV-21	02-NOV-21	R5634397
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Tin (Sn)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Titanium (Ti)-Total	0.00166		0.00030	mg/L	01-NOV-21	02-NOV-21	R5634397
Tungsten (W)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Uranium (U)-Total	0.000026		0.000010	mg/L	01-NOV-21	02-NOV-21	R5634397
Vanadium (V)-Total	<0.00050		0.00050	mg/L	01-NOV-21	02-NOV-21	R5634397
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	01-NOV-21	02-NOV-21	R5634397
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	01-NOV-21	02-NOV-21	R5634397
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					04-NOV-21	R5636376
Aluminum (Al)-Dissolved	0.0263		0.0010	mg/L	04-NOV-21	04-NOV-21	R5636599
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Arsenic (As)-Dissolved	0.00055		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Barium (Ba)-Dissolved	0.00680		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Boron (B)-Dissolved	<0.010		0.010	mg/L	04-NOV-21	04-NOV-21	R5636599
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Calcium (Ca)-Dissolved	19.3		0.050	mg/L	04-NOV-21	04-NOV-21	R5636599
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	04-NOV-21	04-NOV-21	R5636599
Chromium (Cr)-Dissolved	0.00022		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Copper (Cu)-Dissolved	0.00034		0.00020	mg/L	04-NOV-21	04-NOV-21	R5636599
Iron (Fe)-Dissolved	0.156		0.010	mg/L	04-NOV-21	04-NOV-21	R5636599
Lead (Pb)-Dissolved	0.000057		0.000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	04-NOV-21	04-NOV-21	R5636599
Magnesium (Mg)-Dissolved	5.10		0.0050	mg/L	04-NOV-21	04-NOV-21	R5636599
Manganese (Mn)-Dissolved	0.0282		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Molybdenum (Mo)-Dissolved	0.000053		0.000050	mg/L	04-NOV-21	04-NOV-21	R5636599

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657480-1 NDR-TRIB-01 Sampled By: TB/MG on 19-OCT-21 @ 13:20 Matrix: SW							
Dissolved Metals							
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	04-NOV-21	04-NOV-21	R5636599
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	04-NOV-21	04-NOV-21	R5636599
Potassium (K)-Dissolved	0.493		0.050	mg/L	04-NOV-21	04-NOV-21	R5636599
Rubidium (Rb)-Dissolved	0.00118		0.00020	mg/L	04-NOV-21	04-NOV-21	R5636599
Selenium (Se)-Dissolved	0.000066		0.000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Silicon (Si)-Dissolved	1.49		0.050	mg/L	04-NOV-21	04-NOV-21	R5636599
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	04-NOV-21	04-NOV-21	R5636599
Sodium (Na)-Dissolved	1.38		0.050	mg/L	04-NOV-21	04-NOV-21	R5636599
Strontium (Sr)-Dissolved	0.0327		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Sulfur (S)-Dissolved	<0.50		0.50	mg/L	04-NOV-21	04-NOV-21	R5636599
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	04-NOV-21	04-NOV-21	R5636599
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	04-NOV-21	04-NOV-21	R5636599
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Titanium (Ti)-Dissolved	0.00083		0.00030	mg/L	04-NOV-21	04-NOV-21	R5636599
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Uranium (U)-Dissolved	0.000024		0.000010	mg/L	04-NOV-21	04-NOV-21	R5636599
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	04-NOV-21	04-NOV-21	R5636599
Zinc (Zn)-Dissolved	0.0018		0.0010	mg/L	04-NOV-21	04-NOV-21	R5636599
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	04-NOV-21	04-NOV-21	R5636599
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000106		0.000020	ug/L	03-NOV-21	03-NOV-21	R5636098
Report Remarks : DLDS Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity. PEHR Parameter Exceeded Recommended Holding Time On Receipt: Proceed With Analysis As Requested.							
L2657480-2 NDR-P-04 Sampled By: TB/MG on 19-OCT-21 @ 17:30 Matrix: SW							
Physical Tests							
Conductivity	169		1.0	umhos/cm		02-NOV-21	R5635996
Hardness (as CaCO3)	89.0	HTC	0.50	mg/L		04-NOV-21	
pH	7.96	PEHR	0.10	pH units		02-NOV-21	R5635996
Total Suspended Solids	<3.0		3.0	mg/L	10-NOV-21	11-NOV-21	R5641839
Total Dissolved Solids	97	RRR	13	mg/L		10-NOV-21	R5642399
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	95.5		1.0	mg/L		02-NOV-21	R5635996
Ammonia, Total (as N)	0.022		0.010	mg/L		04-NOV-21	R5636533
Bromide (Br)	<0.10		0.10	mg/L		03-NOV-21	R5635989
Chloride (Cl)	<0.50		0.50	mg/L		03-NOV-21	R5635989
Fluoride (F)	0.026		0.020	mg/L		03-NOV-21	R5635989
Nitrate (as N)	<0.020		0.020	mg/L		03-NOV-21	R5635989

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657480-2 NDR-P-04 Sampled By: TB/MG on 19-OCT-21 @ 17:30 Matrix: SW							
Anions and Nutrients							
Nitrite (as N)	<0.010		0.010	mg/L		03-NOV-21	R5635989
Phosphorus (P)-Total	0.0106		0.0010	mg/L		17-NOV-21	R5652956
Sulfate (SO4)	<0.30		0.30	mg/L		03-NOV-21	R5635989
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L		01-NOV-21	R5634428
Cyanide, Total	<0.0020		0.0020	mg/L		01-NOV-21	R5634428
Cyanide, Free	<0.0020		0.0020	mg/L		01-NOV-21	R5634428
Inorganic Parameters							
Acidity (as CaCO3)	8.2		2.0	mg/L		02-NOV-21	R5634874
Total Metals							
Aluminum (Al)-Total	0.0074		0.0050	mg/L	01-NOV-21	03-NOV-21	R5634397
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Arsenic (As)-Total	0.00030		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Barium (Ba)-Total	0.00746		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Boron (B)-Total	<0.010		0.010	mg/L	01-NOV-21	02-NOV-21	R5634397
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Calcium (Ca)-Total	27.1		0.050	mg/L	01-NOV-21	02-NOV-21	R5634397
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	01-NOV-21	02-NOV-21	R5634397
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	01-NOV-21	03-NOV-21	R5634397
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Copper (Cu)-Total	<0.00050		0.00050	mg/L	01-NOV-21	02-NOV-21	R5634397
Iron (Fe)-Total	0.068		0.010	mg/L	01-NOV-21	02-NOV-21	R5634397
Lead (Pb)-Total	<0.000050		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Lithium (Li)-Total	<0.0010		0.0010	mg/L	01-NOV-21	02-NOV-21	R5634397
Magnesium (Mg)-Total	5.16		0.0050	mg/L	01-NOV-21	02-NOV-21	R5634397
Manganese (Mn)-Total	0.0433		0.00050	mg/L	01-NOV-21	02-NOV-21	R5634397
Mercury (Hg)-Total	<0.00050		0.00050	ug/L		17-NOV-21	R5652727
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Nickel (Ni)-Total	0.00051		0.00050	mg/L	01-NOV-21	02-NOV-21	R5634397
Phosphorus (P)-Total	<0.050		0.050	mg/L	01-NOV-21	02-NOV-21	R5634397
Potassium (K)-Total	0.823		0.050	mg/L	01-NOV-21	02-NOV-21	R5634397
Rubidium (Rb)-Total	0.00107		0.00020	mg/L	01-NOV-21	02-NOV-21	R5634397
Selenium (Se)-Total	<0.000050		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Silicon (Si)-Total	1.74		0.10	mg/L	01-NOV-21	02-NOV-21	R5634397
Silver (Ag)-Total	<0.000050		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Sodium (Na)-Total	0.624		0.050	mg/L	01-NOV-21	02-NOV-21	R5634397
Strontium (Sr)-Total	0.0328		0.0010	mg/L	01-NOV-21	02-NOV-21	R5634397
Sulfur (S)-Total	<0.50		0.50	mg/L	01-NOV-21	02-NOV-21	R5634397
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-NOV-21	02-NOV-21	R5634397
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	01-NOV-21	02-NOV-21	R5634397

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657480-2 NDR-P-04 Sampled By: TB/MG on 19-OCT-21 @ 17:30 Matrix: SW							
Total Metals							
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Tin (Sn)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Titanium (Ti)-Total	<0.00030		0.00030	mg/L	01-NOV-21	02-NOV-21	R5634397
Tungsten (W)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Uranium (U)-Total	<0.000010		0.000010	mg/L	01-NOV-21	02-NOV-21	R5634397
Vanadium (V)-Total	<0.00050		0.00050	mg/L	01-NOV-21	02-NOV-21	R5634397
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	01-NOV-21	02-NOV-21	R5634397
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	01-NOV-21	02-NOV-21	R5634397
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					04-NOV-21	R5636376
Aluminum (Al)-Dissolved	0.0023		0.0010	mg/L	04-NOV-21	04-NOV-21	R5636599
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Arsenic (As)-Dissolved	0.00027		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Barium (Ba)-Dissolved	0.00686		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Boron (B)-Dissolved	<0.010		0.010	mg/L	04-NOV-21	04-NOV-21	R5636599
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Calcium (Ca)-Dissolved	27.4		0.050	mg/L	04-NOV-21	04-NOV-21	R5636599
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	04-NOV-21	04-NOV-21	R5636599
Chromium (Cr)-Dissolved	0.00011		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	04-NOV-21	04-NOV-21	R5636599
Iron (Fe)-Dissolved	0.027		0.010	mg/L	04-NOV-21	04-NOV-21	R5636599
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	04-NOV-21	04-NOV-21	R5636599
Magnesium (Mg)-Dissolved	5.18		0.0050	mg/L	04-NOV-21	04-NOV-21	R5636599
Manganese (Mn)-Dissolved	0.0169		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	04-NOV-21	04-NOV-21	R5636599
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	04-NOV-21	04-NOV-21	R5636599
Potassium (K)-Dissolved	0.807		0.050	mg/L	04-NOV-21	04-NOV-21	R5636599
Rubidium (Rb)-Dissolved	0.00111		0.00020	mg/L	04-NOV-21	04-NOV-21	R5636599
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Silicon (Si)-Dissolved	1.78		0.050	mg/L	04-NOV-21	04-NOV-21	R5636599
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	04-NOV-21	04-NOV-21	R5636599
Sodium (Na)-Dissolved	0.563		0.050	mg/L	04-NOV-21	04-NOV-21	R5636599
Strontium (Sr)-Dissolved	0.0332		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Sulfur (S)-Dissolved	<0.50		0.50	mg/L	04-NOV-21	04-NOV-21	R5636599
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	04-NOV-21	04-NOV-21	R5636599
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	04-NOV-21	04-NOV-21	R5636599

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657480-2 NDR-P-04 Sampled By: TB/MG on 19-OCT-21 @ 17:30 Matrix: SW							
Dissolved Metals							
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	04-NOV-21	04-NOV-21	R5636599
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Uranium (U)-Dissolved	<0.000010		0.000010	mg/L	04-NOV-21	04-NOV-21	R5636599
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	04-NOV-21	04-NOV-21	R5636599
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	04-NOV-21	04-NOV-21	R5636599
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	04-NOV-21	04-NOV-21	R5636599
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000022		0.000020	ug/L	03-NOV-21	03-NOV-21	R5636098
Report Remarks : DLDS Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity. PEHR Parameter Exceeded Recommended Holding Time On Receipt: Proceed With Analysis As Requested.							
L2657480-3 NDR-TRIB-02 Sampled By: TB/MG on 20-OCT-21 @ 15:45 Matrix: SW							
Physical Tests							
Conductivity	35.7		1.0	umhos/cm		02-NOV-21	R5635996
Hardness (as CaCO3)	26.9	HTC	0.50	mg/L		04-NOV-21	
pH	6.30	PEHR	0.10	pH units		02-NOV-21	R5635996
Total Suspended Solids	<3.0		3.0	mg/L	10-NOV-21	11-NOV-21	R5641839
Total Dissolved Solids	93	PEHR	10	mg/L		10-NOV-21	R5642399
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	9.3		1.0	mg/L		02-NOV-21	R5635996
Ammonia, Total (as N)	0.090		0.010	mg/L		04-NOV-21	R5636533
Bromide (Br)	<0.10		0.10	mg/L		03-NOV-21	R5635989
Chloride (Cl)	<0.50		0.50	mg/L		03-NOV-21	R5635989
Fluoride (F)	<0.020		0.020	mg/L		03-NOV-21	R5635989
Nitrate (as N)	0.029		0.020	mg/L		03-NOV-21	R5635989
Nitrite (as N)	<0.010		0.010	mg/L		03-NOV-21	R5635989
Phosphorus (P)-Total	0.0178		0.0010	mg/L		17-NOV-21	R5652956
Sulfate (SO4)	<0.30		0.30	mg/L		03-NOV-21	R5635989
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L		01-NOV-21	R5634428
Cyanide, Total	<0.0020		0.0020	mg/L		01-NOV-21	R5634428
Cyanide, Free	<0.0020		0.0020	mg/L		01-NOV-21	R5634428
Inorganic Parameters							
Acidity (as CaCO3)	16.7		2.0	mg/L		02-NOV-21	R5634874
Total Metals							
Aluminum (Al)-Total	0.206		0.0050	mg/L	01-NOV-21	03-NOV-21	R5634397
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Arsenic (As)-Total	0.00089		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657480-3 NDR-TRIB-02 Sampled By: TB/MG on 20-OCT-21 @ 15:45 Matrix: SW							
Total Metals							
Barium (Ba)-Total	0.00580		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Boron (B)-Total	<0.010		0.010	mg/L	01-NOV-21	02-NOV-21	R5634397
Cadmium (Cd)-Total	0.0000344		0.0000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Calcium (Ca)-Total	7.16		0.050	mg/L	01-NOV-21	02-NOV-21	R5634397
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	01-NOV-21	02-NOV-21	R5634397
Chromium (Cr)-Total	0.00055		0.00050	mg/L	01-NOV-21	03-NOV-21	R5634397
Cobalt (Co)-Total	0.00022		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Copper (Cu)-Total	0.00087		0.00050	mg/L	01-NOV-21	02-NOV-21	R5634397
Iron (Fe)-Total	0.585		0.010	mg/L	01-NOV-21	02-NOV-21	R5634397
Lead (Pb)-Total	0.000528		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Lithium (Li)-Total	<0.0010		0.0010	mg/L	01-NOV-21	02-NOV-21	R5634397
Magnesium (Mg)-Total	2.18		0.0050	mg/L	01-NOV-21	02-NOV-21	R5634397
Manganese (Mn)-Total	0.0391		0.00050	mg/L	01-NOV-21	02-NOV-21	R5634397
Mercury (Hg)-Total	0.00140		0.00050	ug/L		17-NOV-21	R5652727
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Nickel (Ni)-Total	0.00105		0.00050	mg/L	01-NOV-21	02-NOV-21	R5634397
Phosphorus (P)-Total	<0.050		0.050	mg/L	01-NOV-21	02-NOV-21	R5634397
Potassium (K)-Total	0.201		0.050	mg/L	01-NOV-21	02-NOV-21	R5634397
Rubidium (Rb)-Total	0.00074		0.00020	mg/L	01-NOV-21	02-NOV-21	R5634397
Selenium (Se)-Total	0.000141		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Silicon (Si)-Total	1.90		0.10	mg/L	01-NOV-21	02-NOV-21	R5634397
Silver (Ag)-Total	<0.000050		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Sodium (Na)-Total	0.714		0.050	mg/L	01-NOV-21	02-NOV-21	R5634397
Strontium (Sr)-Total	0.0138		0.0010	mg/L	01-NOV-21	02-NOV-21	R5634397
Sulfur (S)-Total	<0.50		0.50	mg/L	01-NOV-21	02-NOV-21	R5634397
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-NOV-21	02-NOV-21	R5634397
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	01-NOV-21	02-NOV-21	R5634397
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Tin (Sn)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Titanium (Ti)-Total	0.00543		0.00030	mg/L	01-NOV-21	02-NOV-21	R5634397
Tungsten (W)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Uranium (U)-Total	0.000020		0.000010	mg/L	01-NOV-21	02-NOV-21	R5634397
Vanadium (V)-Total	<0.00050		0.00050	mg/L	01-NOV-21	02-NOV-21	R5634397
Zinc (Zn)-Total	0.0072		0.0030	mg/L	01-NOV-21	02-NOV-21	R5634397
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	01-NOV-21	02-NOV-21	R5634397
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					04-NOV-21	R5636376
Aluminum (Al)-Dissolved	0.193		0.0010	mg/L	04-NOV-21	04-NOV-21	R5636599
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657480-3 NDR-TRIB-02 Sampled By: TB/MG on 20-OCT-21 @ 15:45 Matrix: SW							
Dissolved Metals							
Arsenic (As)-Dissolved	0.00088		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Barium (Ba)-Dissolved	0.00415		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Boron (B)-Dissolved	<0.010		0.010	mg/L	04-NOV-21	04-NOV-21	R5636599
Cadmium (Cd)-Dissolved	0.0000263		0.0000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Calcium (Ca)-Dissolved	7.04		0.050	mg/L	04-NOV-21	04-NOV-21	R5636599
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	04-NOV-21	04-NOV-21	R5636599
Chromium (Cr)-Dissolved	0.00051		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Cobalt (Co)-Dissolved	0.00011		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Copper (Cu)-Dissolved	0.00061		0.00020	mg/L	04-NOV-21	04-NOV-21	R5636599
Iron (Fe)-Dissolved	0.521		0.010	mg/L	04-NOV-21	04-NOV-21	R5636599
Lead (Pb)-Dissolved	0.000366		0.000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	04-NOV-21	04-NOV-21	R5636599
Magnesium (Mg)-Dissolved	2.17		0.0050	mg/L	04-NOV-21	04-NOV-21	R5636599
Manganese (Mn)-Dissolved	0.0176		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Nickel (Ni)-Dissolved	0.00059		0.00050	mg/L	04-NOV-21	04-NOV-21	R5636599
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	04-NOV-21	04-NOV-21	R5636599
Potassium (K)-Dissolved	0.164		0.050	mg/L	04-NOV-21	04-NOV-21	R5636599
Rubidium (Rb)-Dissolved	0.00068		0.00020	mg/L	04-NOV-21	04-NOV-21	R5636599
Selenium (Se)-Dissolved	0.000151		0.000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Silicon (Si)-Dissolved	1.93		0.050	mg/L	04-NOV-21	04-NOV-21	R5636599
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	04-NOV-21	04-NOV-21	R5636599
Sodium (Na)-Dissolved	0.622		0.050	mg/L	04-NOV-21	04-NOV-21	R5636599
Strontium (Sr)-Dissolved	0.0137		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Sulfur (S)-Dissolved	<0.50		0.50	mg/L	04-NOV-21	04-NOV-21	R5636599
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	04-NOV-21	04-NOV-21	R5636599
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	04-NOV-21	04-NOV-21	R5636599
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Titanium (Ti)-Dissolved	0.00521		0.00030	mg/L	04-NOV-21	04-NOV-21	R5636599
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Uranium (U)-Dissolved	0.000017		0.000010	mg/L	04-NOV-21	04-NOV-21	R5636599
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	04-NOV-21	04-NOV-21	R5636599
Zinc (Zn)-Dissolved	0.0064		0.0010	mg/L	04-NOV-21	04-NOV-21	R5636599
Zirconium (Zr)-Dissolved	0.00024		0.00020	mg/L	04-NOV-21	04-NOV-21	R5636599
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000229		0.000020	ug/L	03-NOV-21	03-NOV-21	R5636098
L2657480-4 NDR-P-03 Sampled By: TB/MG on 20-OCT-21 @ 08:40 Matrix: SW							

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657480-4 NDR-P-03 Sampled By: TB/MG on 20-OCT-21 @ 08:40 Matrix: SW							
Physical Tests							
Conductivity	83.1		1.0	umhos/cm		02-NOV-21	R5635996
Hardness (as CaCO3)	44.2	HTC	0.50	mg/L		04-NOV-21	
pH	7.78	PEHR	0.10	pH units		02-NOV-21	R5635996
Total Suspended Solids	3.4		3.0	mg/L	10-NOV-21	11-NOV-21	R5641839
Total Dissolved Solids	48	RRR	13	mg/L		10-NOV-21	R5642399
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	53.3		1.0	mg/L		02-NOV-21	R5635996
Ammonia, Total (as N)	<0.010		0.010	mg/L		04-NOV-21	R5636533
Bromide (Br)	<0.10		0.10	mg/L		03-NOV-21	R5635989
Chloride (Cl)	<0.50		0.50	mg/L		03-NOV-21	R5635989
Fluoride (F)	0.020		0.020	mg/L		03-NOV-21	R5635989
Nitrate (as N)	<0.020		0.020	mg/L		03-NOV-21	R5635989
Nitrite (as N)	<0.010		0.010	mg/L		03-NOV-21	R5635989
Phosphorus (P)-Total	0.0159		0.0010	mg/L		17-NOV-21	R5652956
Sulfate (SO4)	<0.30		0.30	mg/L		03-NOV-21	R5635989
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L		01-NOV-21	R5634428
Cyanide, Total	<0.0020		0.0020	mg/L		01-NOV-21	R5634428
Cyanide, Free	<0.0020		0.0020	mg/L		01-NOV-21	R5634428
Inorganic Parameters							
Acidity (as CaCO3)	4.7		2.0	mg/L		02-NOV-21	R5634874
Total Metals							
Aluminum (Al)-Total	0.0405		0.0050	mg/L	01-NOV-21	03-NOV-21	R5634397
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Arsenic (As)-Total	0.00028		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Barium (Ba)-Total	0.00294		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Boron (B)-Total	<0.010		0.010	mg/L	01-NOV-21	02-NOV-21	R5634397
Cadmium (Cd)-Total	0.0000050		0.0000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Calcium (Ca)-Total	12.1		0.050	mg/L	01-NOV-21	02-NOV-21	R5634397
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	01-NOV-21	02-NOV-21	R5634397
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	01-NOV-21	03-NOV-21	R5634397
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Copper (Cu)-Total	<0.00050		0.00050	mg/L	01-NOV-21	02-NOV-21	R5634397
Iron (Fe)-Total	0.089		0.010	mg/L	01-NOV-21	02-NOV-21	R5634397
Lead (Pb)-Total	0.000099		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Lithium (Li)-Total	<0.0010		0.0010	mg/L	01-NOV-21	02-NOV-21	R5634397
Magnesium (Mg)-Total	3.39		0.0050	mg/L	01-NOV-21	02-NOV-21	R5634397
Manganese (Mn)-Total	0.0239		0.00050	mg/L	01-NOV-21	02-NOV-21	R5634397
Mercury (Hg)-Total	0.00087		0.00050	ug/L		17-NOV-21	R5652727
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657480-4 NDR-P-03 Sampled By: TB/MG on 20-OCT-21 @ 08:40 Matrix: SW							
Total Metals							
Nickel (Ni)-Total	0.00052		0.00050	mg/L	01-NOV-21	02-NOV-21	R5634397
Phosphorus (P)-Total	<0.050		0.050	mg/L	01-NOV-21	02-NOV-21	R5634397
Potassium (K)-Total	0.367		0.050	mg/L	01-NOV-21	02-NOV-21	R5634397
Rubidium (Rb)-Total	0.00065		0.00020	mg/L	01-NOV-21	02-NOV-21	R5634397
Selenium (Se)-Total	0.000057		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Silicon (Si)-Total	0.50		0.10	mg/L	01-NOV-21	02-NOV-21	R5634397
Silver (Ag)-Total	<0.000050		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Sodium (Na)-Total	0.573		0.050	mg/L	01-NOV-21	02-NOV-21	R5634397
Strontium (Sr)-Total	0.0157		0.0010	mg/L	01-NOV-21	02-NOV-21	R5634397
Sulfur (S)-Total	<0.50		0.50	mg/L	01-NOV-21	02-NOV-21	R5634397
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-NOV-21	02-NOV-21	R5634397
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	01-NOV-21	02-NOV-21	R5634397
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Tin (Sn)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Titanium (Ti)-Total	0.00088		0.00030	mg/L	01-NOV-21	02-NOV-21	R5634397
Tungsten (W)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Uranium (U)-Total	0.000010		0.000010	mg/L	01-NOV-21	02-NOV-21	R5634397
Vanadium (V)-Total	<0.00050		0.00050	mg/L	01-NOV-21	02-NOV-21	R5634397
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	01-NOV-21	02-NOV-21	R5634397
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	01-NOV-21	02-NOV-21	R5634397
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					04-NOV-21	R5636376
Aluminum (Al)-Dissolved	0.0076		0.0010	mg/L	04-NOV-21	04-NOV-21	R5636599
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Arsenic (As)-Dissolved	0.00026		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Barium (Ba)-Dissolved	0.00233		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Boron (B)-Dissolved	<0.010		0.010	mg/L	04-NOV-21	04-NOV-21	R5636599
Cadmium (Cd)-Dissolved	<0.0000050		0.0000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Calcium (Ca)-Dissolved	12.5		0.050	mg/L	04-NOV-21	04-NOV-21	R5636599
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	04-NOV-21	04-NOV-21	R5636599
Chromium (Cr)-Dissolved	0.00013		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Copper (Cu)-Dissolved	<0.00020		0.00020	mg/L	04-NOV-21	04-NOV-21	R5636599
Iron (Fe)-Dissolved	0.013		0.010	mg/L	04-NOV-21	04-NOV-21	R5636599
Lead (Pb)-Dissolved	<0.000050		0.000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	04-NOV-21	04-NOV-21	R5636599
Magnesium (Mg)-Dissolved	3.29		0.0050	mg/L	04-NOV-21	04-NOV-21	R5636599
Manganese (Mn)-Dissolved	0.00122		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Molybdenum (Mo)-Dissolved	<0.000050		0.000050	mg/L	04-NOV-21	04-NOV-21	R5636599

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657480-4 NDR-P-03 Sampled By: TB/MG on 20-OCT-21 @ 08:40 Matrix: SW							
Dissolved Metals							
Nickel (Ni)-Dissolved	<0.00050		0.00050	mg/L	04-NOV-21	04-NOV-21	R5636599
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	04-NOV-21	04-NOV-21	R5636599
Potassium (K)-Dissolved	0.340		0.050	mg/L	04-NOV-21	04-NOV-21	R5636599
Rubidium (Rb)-Dissolved	0.00067		0.00020	mg/L	04-NOV-21	04-NOV-21	R5636599
Selenium (Se)-Dissolved	<0.000050		0.000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Silicon (Si)-Dissolved	0.449		0.050	mg/L	04-NOV-21	04-NOV-21	R5636599
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	04-NOV-21	04-NOV-21	R5636599
Sodium (Na)-Dissolved	0.519		0.050	mg/L	04-NOV-21	04-NOV-21	R5636599
Strontium (Sr)-Dissolved	0.0162		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Sulfur (S)-Dissolved	<0.50		0.50	mg/L	04-NOV-21	04-NOV-21	R5636599
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	04-NOV-21	04-NOV-21	R5636599
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	04-NOV-21	04-NOV-21	R5636599
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Titanium (Ti)-Dissolved	<0.00030		0.00030	mg/L	04-NOV-21	04-NOV-21	R5636599
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Uranium (U)-Dissolved	<0.000010		0.000010	mg/L	04-NOV-21	04-NOV-21	R5636599
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	04-NOV-21	04-NOV-21	R5636599
Zinc (Zn)-Dissolved	<0.0010		0.0010	mg/L	04-NOV-21	04-NOV-21	R5636599
Zirconium (Zr)-Dissolved	<0.00020		0.00020	mg/L	04-NOV-21	04-NOV-21	R5636599
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000034		0.000020	ug/L	03-NOV-21	03-NOV-21	R5636098
Report Remarks : DLDS Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity. PEHR Parameter Exceeded Recommended Holding Time On Receipt: Proceed With Analysis As Requested.							

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

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Method Blank	Conductivity	B	L2657480-1, -2, -3, -4
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L2657480-1, -2, -3, -4
Matrix Spike	Magnesium (Mg)-Dissolved	MS-B	L2657480-1, -2, -3, -4
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L2657480-1, -2, -3, -4
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L2657480-1, -2, -3, -4
Matrix Spike	Aluminum (Al)-Total	MS-B	L2657480-1, -2, -3, -4
Matrix Spike	Calcium (Ca)-Total	MS-B	L2657480-1, -2, -3, -4
Matrix Spike	Iron (Fe)-Total	MS-B	L2657480-1, -2, -3, -4
Matrix Spike	Magnesium (Mg)-Total	MS-B	L2657480-1, -2, -3, -4
Matrix Spike	Manganese (Mn)-Total	MS-B	L2657480-1, -2, -3, -4
Matrix Spike	Silicon (Si)-Total	MS-B	L2657480-1, -2, -3, -4
Matrix Spike	Sodium (Na)-Total	MS-B	L2657480-1, -2, -3, -4
Matrix Spike	Strontium (Sr)-Total	MS-B	L2657480-1, -2, -3, -4
Matrix Spike	Phosphorus (P)-Total	MS-B	L2657480-1, -2, -3, -4

Sample Parameter Qualifier key listed:

Qualifier	Description
B	Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.
HTC	Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
PEHR	Parameter Exceeded Recommended Holding Time On Receipt: Proceed With Analysis As Requested.
RRR	Refer to Report Remarks for issues regarding this analysis

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ACIDITY-WT	Water	Acidity (as CaCO3)	APHA 2310 B - Potentiometric Titration
ALK-WT	Water	Alkalinity, Total (as CaCO3)	APHA 2320B

This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint.

BR-IC-N-WT	Water	Bromide in Water by IC	EPA 300.1 (mod)

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

CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)

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

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-FREE-CFA-WT	Water	Free Cyanide in water by CFA	ASTM 7237

This analysis is carried out using procedures adapted from ASTM Method 7237 "Free Cyanide with Flow Injection Analysis (FIA) Utilizing Gas Diffusion Separation and Amperometric Detection". Free cyanide is determined by in-line gas diffusion at pH 6 with final determination by colourimetric analysis.

CN-TOT-WT	Water	Cyanide, Total	ISO 14403-2

Total cyanide is determined by the combination of UV digestion and distillation. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

When using this method, high levels of thiocyanate in samples can cause false positives at ~1-2% of the thiocyanate concentration. For samples with detectable cyanide analyzed by this method, ALS recommends analysis for thiocyanate to check for this potential interference

CN-WAD-WT	Water	Cyanide, Weak Acid Diss	APHA 4500CN I-Weak acid Dist Colorimet

Weak acid dissociable cyanide (WAD) is determined by undergoing a distillation procedure. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

EC-SCREEN-WT	Water	Conductivity Screen (Internal Use Only)	APHA 2510

Reference Information

Qualitative analysis of conductivity where required during preparation of other tests - e.g. TDS, metals, etc.

EC-WT	Water	Conductivity	APHA 2510 B

Water samples can be measured directly by immersing the conductivity cell into the sample.

F-IC-N-WT	Water	Fluoride in Water by IC	EPA 300.1 (mod)

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

HARDNESS-CALC-WT	Water	Hardness	APHA 2340 B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-T-U-CVAF-VA	Water	Total Mercury in Water by CVAFS (Ultra)	EPA 1631 REV. E

This analysis is carried out using procedures adapted from Method 1631 Rev. E. by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to a purge and trap concentration step and final reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry.

MEHG-T-GCAF-VA	Water	Total Methylmercury in Water by GCAFS	EPA 1630 (mod)

This method follows Method 1630 of the US EPA. Samples are distilled under an inert gas flow to isolate methylmercury and minimize matrix interferences. The distillate is analyzed by aqueous phase ethylation, purge and trap, desorption and GC separation. The separated species are then pyrolized to elemental Hg and quantified by cold vapour atomic flourescence spectroscopy. Results are reported "as MeHg".

MET-D-CCMS-WP	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020B (mod)

Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

MET-T-CCMS-WT	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F

Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.

NO2-IC-WT	Water	Nitrite in Water by IC	EPA 300.1 (mod)

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

NO3-IC-WT	Water	Nitrate in Water by IC	EPA 300.1 (mod)

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

P-T-L-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS-L

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.

PH-WT	Water	pH	APHA 4500 H-Electrode

Water samples are analyzed directly by a calibrated pH meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days

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

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

SOLIDS-TDS-WT	Water	Total Dissolved Solids	APHA 2540C

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

Reference Information

SOLIDS-TSS-WT	Water	Suspended solids	APHA 2540 D-Gravimetric

A well-mixed sample is filtered through a weighed standard glass fibre filter and the residue retained is dried in an oven at 104–1°C for a minimum of four hours or until a constant weight is achieved.

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

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

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2657480 Report Date: 18-NOV-21

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ACIDITY-WT	**Water**							
Batch R5634874								
WG3648666-3 DUP		**L2657480-2**						
Acidity (as CaCO3)		8.2	8.1		mg/L	1.7	20	02-NOV-21
WG3648666-2 LCS								
Acidity (as CaCO3)			114.2		%		85-115	02-NOV-21
WG3648666-1 MB								
Acidity (as CaCO3)			<2.0		mg/L		2	02-NOV-21
ALK-WT	**Water**							
Batch R5635996								
WG3650457-4 DUP		**WG3650457-3**						
Alkalinity, Total (as CaCO3)		288	287		mg/L	0.2	20	02-NOV-21
WG3650457-2 LCS								
Alkalinity, Total (as CaCO3)			108.7		%		85-115	02-NOV-21
WG3650457-1 MB								
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	02-NOV-21
BR-IC-N-WT	**Water**							
Batch R5635989								
WG3651635-9 DUP		**L2657480-2**						
Bromide (Br)		<0.10	<0.10	RPD-NA	mg/L	N/A	20	03-NOV-21
WG3651635-7 LCS								
Bromide (Br)			99.4		%		85-115	03-NOV-21
WG3651635-6 MB								
Bromide (Br)			<0.10		mg/L		0.1	03-NOV-21
WG3651635-10 MS		**L2657480-2**						
Bromide (Br)			99.1		%		75-125	03-NOV-21
CL-IC-N-WT	**Water**							
Batch R5635989								
WG3651635-9 DUP		**L2657480-2**						
Chloride (Cl)		<0.50	<0.50	RPD-NA	mg/L	N/A	20	03-NOV-21
WG3651635-7 LCS								
Chloride (Cl)			98.1		%		90-110	03-NOV-21
WG3651635-6 MB								
Chloride (Cl)			<0.50		mg/L		0.5	03-NOV-21
WG3651635-10 MS		**L2657480-2**						
Chloride (Cl)			99.8		%		75-125	03-NOV-21
CN-FREE-CFA-WT	**Water**							

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-FREE-CFA-WT	**Water**							
Batch R5634428								
WG3650147-3 DUP		**WG3650147-5**						
Cyanide, Free		0.0089	0.0090		mg/L	1.1	20	01-NOV-21
WG3650147-2 LCS								
Cyanide, Free			98.7		%		80-120	01-NOV-21
WG3650147-1 MB								
Cyanide, Free			<0.0020		mg/L		0.002	01-NOV-21
WG3650147-4 MS		**WG3650147-5**						
Cyanide, Free			94.1		%		75-125	01-NOV-21
CN-TOT-WT	**Water**							
Batch R5634428								
WG3650147-3 DUP		**WG3650147-5**						
Cyanide, Total		0.0144	0.0144		mg/L	0.6	20	01-NOV-21
WG3650147-2 LCS								
Cyanide, Total			93.2		%		80-120	01-NOV-21
WG3650147-1 MB								
Cyanide, Total			<0.0020		mg/L		0.002	01-NOV-21
WG3650147-4 MS		**WG3650147-5**						
Cyanide, Total			81.6		%		70-130	01-NOV-21
CN-WAD-WT	**Water**							
Batch R5634428								
WG3650147-3 DUP		**WG3650147-5**						
Cyanide, Weak Acid Diss		0.0107	0.0098		mg/L	8.4	20	01-NOV-21
WG3650147-2 LCS								
Cyanide, Weak Acid Diss			103.0		%		80-120	01-NOV-21
WG3650147-1 MB								
Cyanide, Weak Acid Diss			<0.0020		mg/L		0.002	01-NOV-21
WG3650147-4 MS		**WG3650147-5**						
Cyanide, Weak Acid Diss			97.7		%		75-125	01-NOV-21
EC-WT	**Water**							
Batch R5635996								
WG3650457-4 DUP		**WG3650457-3**						
Conductivity		1470	1460		umhos/cm	0.4	10	02-NOV-21
WG3650457-2 LCS								
Conductivity			98.2		%		90-110	02-NOV-21
WG3650457-1 MB								
Conductivity			2.8	B	umhos/cm		1	02-NOV-21
F-IC-N-WT	**Water**							

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F-IC-N-WT	**Water**							
Batch R5635989								
WG3651635-9 DUP		**L2657480-2**						
Fluoride (F)		0.026	0.026		mg/L	0.1	20	03-NOV-21
WG3651635-7 LCS								
Fluoride (F)			100.0		%		90-110	03-NOV-21
WG3651635-6 MB								
Fluoride (F)			<0.020		mg/L		0.02	03-NOV-21
WG3651635-10 MS		**L2657480-2**						
Fluoride (F)			101.0		%		75-125	03-NOV-21
HG-T-U-CVAF-VA	**Water**							
Batch R5652727								
WG3660510-3 DUP		**L2655497-6**						
Mercury (Hg)-Total		0.00076	0.00075	RPD-NA	ug/L	N/A	20	17-NOV-21
WG3660510-2 LCS								
Mercury (Hg)-Total			111.9		%		80-120	17-NOV-21
WG3660510-1 MB								
Mercury (Hg)-Total			<0.00050		ug/L		0.0005	17-NOV-21
WG3660510-4 MS		**L2657480-4**						
Mercury (Hg)-Total			96.5		%		70-130	17-NOV-21
MEHG-T-GCAF-VA	**Water**							
Batch R5636098								
WG3652550-2 DUP		**L2657480-4**						
Methylmercury (as MeHg)-Total		0.000034	0.000036		ug/L	6.3	20	03-NOV-21
WG3652550-3 LCS								
Methylmercury (as MeHg)-Total			82.3		%		70-130	03-NOV-21
WG3652550-1 MB								
Methylmercury (as MeHg)-Total			<0.000020		ug/L		0.00002	03-NOV-21
WG3652550-4 MS		**L2657080-2**						
Methylmercury (as MeHg)-Total			79.9		%		70-130	03-NOV-21
MET-D-CCMS-WP	**Water**							
Batch R5636599								
WG3652107-4 DUP		**WG3652107-3**						
Aluminum (Al)-Dissolved		0.0681	0.0676		mg/L	0.7	20	04-NOV-21
Antimony (Sb)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	04-NOV-21
Arsenic (As)-Dissolved		0.00076	0.00075		mg/L	2.3	20	04-NOV-21
Barium (Ba)-Dissolved		0.00720	0.00723		mg/L	0.5	20	04-NOV-21
Beryllium (Be)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	04-NOV-21
Bismuth (Bi)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	04-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
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Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5636599								
WG3652107-4 DUP		**WG3652107-3**						
Boron (B)-Dissolved		0.014	0.014		mg/L	0.8	20	04-NOV-21
Cadmium (Cd)-Dissolved		0.0000131	0.0000069	J	mg/L	0.0000062	0.00001	04-NOV-21
Calcium (Ca)-Dissolved		19.4	19.1		mg/L	1.7	20	04-NOV-21
Cesium (Cs)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	04-NOV-21
Chromium (Cr)-Dissolved		0.00037	0.00037		mg/L	2.3	20	04-NOV-21
Cobalt (Co)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	04-NOV-21
Copper (Cu)-Dissolved		0.00120	0.00143		mg/L	18	20	04-NOV-21
Iron (Fe)-Dissolved		0.235	0.235		mg/L	0.2	20	04-NOV-21
Lead (Pb)-Dissolved		0.000058	0.000058		mg/L	0.4	20	04-NOV-21
Lithium (Li)-Dissolved		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	04-NOV-21
Magnesium (Mg)-Dissolved		4.90	4.92		mg/L	0.5	20	04-NOV-21
Manganese (Mn)-Dissolved		0.0180	0.0178		mg/L	0.9	20	04-NOV-21
Molybdenum (Mo)-Dissolved		0.000118	0.000121		mg/L	2.5	20	04-NOV-21
Nickel (Ni)-Dissolved		0.00055	0.00056		mg/L	2.3	20	04-NOV-21
Phosphorus (P)-Dissolved		<0.030	<0.030	RPD-NA	mg/L	N/A	20	04-NOV-21
Potassium (K)-Dissolved		0.513	0.520		mg/L	1.4	20	04-NOV-21
Rubidium (Rb)-Dissolved		0.00123	0.00127		mg/L	3.2	20	04-NOV-21
Selenium (Se)-Dissolved		0.000109	0.000158	J	mg/L	0.000049	0.0001	04-NOV-21
Silicon (Si)-Dissolved		2.71	2.69		mg/L	0.7	20	04-NOV-21
Silver (Ag)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	04-NOV-21
Sodium (Na)-Dissolved		3.24	3.30		mg/L	1.6	20	04-NOV-21
Strontium (Sr)-Dissolved		0.0332	0.0333		mg/L	0.3	20	04-NOV-21
Sulfur (S)-Dissolved		1.87	1.72		mg/L	8.2	20	04-NOV-21
Tellurium (Te)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	04-NOV-21
Thallium (Tl)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	04-NOV-21
Thorium (Th)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	04-NOV-21
Tin (Sn)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	04-NOV-21
Titanium (Ti)-Dissolved		0.00207	0.00203		mg/L	1.6	20	04-NOV-21
Tungsten (W)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	04-NOV-21
Uranium (U)-Dissolved		0.000069	0.000069		mg/L	0.0	20	04-NOV-21
Vanadium (V)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	04-NOV-21
Zinc (Zn)-Dissolved		0.0021	0.0023		mg/L	9.6	20	04-NOV-21
Zirconium (Zr)-Dissolved		0.00025	0.00027		mg/L			04-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
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Mississauga ON L4Z 3K7
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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5636599								
WG3652107-4 DUP		**WG3652107-3**						
Zirconium (Zr)-Dissolved		0.00025	0.00027		mg/L	4.5	20	04-NOV-21
WG3652107-2 LCS								
Aluminum (Al)-Dissolved			101.2		%		80-120	04-NOV-21
Antimony (Sb)-Dissolved			96.3		%		80-120	04-NOV-21
Arsenic (As)-Dissolved			102.1		%		80-120	04-NOV-21
Barium (Ba)-Dissolved			99.2		%		80-120	04-NOV-21
Beryllium (Be)-Dissolved			93.3		%		80-120	04-NOV-21
Bismuth (Bi)-Dissolved			95.9		%		80-120	04-NOV-21
Boron (B)-Dissolved			91.7		%		80-120	04-NOV-21
Cadmium (Cd)-Dissolved			101.0		%		80-120	04-NOV-21
Calcium (Ca)-Dissolved			99.8		%		80-120	04-NOV-21
Cesium (Cs)-Dissolved			95.5		%		80-120	04-NOV-21
Chromium (Cr)-Dissolved			101.1		%		80-120	04-NOV-21
Cobalt (Co)-Dissolved			101.0		%		80-120	04-NOV-21
Copper (Cu)-Dissolved			102.4		%		80-120	04-NOV-21
Iron (Fe)-Dissolved			95.6		%		80-120	04-NOV-21
Lead (Pb)-Dissolved			98.3		%		80-120	04-NOV-21
Lithium (Li)-Dissolved			94.9		%		80-120	04-NOV-21
Magnesium (Mg)-Dissolved			110.1		%		80-120	04-NOV-21
Manganese (Mn)-Dissolved			99.9		%		80-120	04-NOV-21
Molybdenum (Mo)-Dissolved			100.1		%		80-120	04-NOV-21
Nickel (Ni)-Dissolved			100.7		%		80-120	04-NOV-21
Phosphorus (P)-Dissolved			99.8		%		80-120	04-NOV-21
Potassium (K)-Dissolved			93.6		%		80-120	04-NOV-21
Rubidium (Rb)-Dissolved			100.4		%		80-120	04-NOV-21
Selenium (Se)-Dissolved			101.7		%		80-120	04-NOV-21
Silicon (Si)-Dissolved			99.2		%		80-120	04-NOV-21
Silver (Ag)-Dissolved			91.4		%		80-120	04-NOV-21
Sodium (Na)-Dissolved			98.3		%		80-120	04-NOV-21
Strontium (Sr)-Dissolved			95.8		%		80-120	04-NOV-21
Sulfur (S)-Dissolved			107.2		%		80-120	04-NOV-21
Tellurium (Te)-Dissolved			93.9		%		80-120	04-NOV-21
Thallium (Tl)-Dissolved			100.3		%		80-120	04-NOV-21
Thorium (Th)-Dissolved			93.5		%		80-120	04-NOV-21

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5636599								
WG3652107-2 LCS								
Tin (Sn)-Dissolved			94.9		%		80-120	04-NOV-21
Titanium (Ti)-Dissolved			98.1		%		80-120	04-NOV-21
Tungsten (W)-Dissolved			100.1		%		80-120	04-NOV-21
Uranium (U)-Dissolved			98.7		%		80-120	04-NOV-21
Vanadium (V)-Dissolved			100.9		%		80-120	04-NOV-21
Zinc (Zn)-Dissolved			103.2		%		80-120	04-NOV-21
Zirconium (Zr)-Dissolved			89.9		%		80-120	04-NOV-21
WG3652107-1 MB								
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	04-NOV-21
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	04-NOV-21
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	04-NOV-21
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	04-NOV-21
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	04-NOV-21
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	04-NOV-21
Boron (B)-Dissolved			<0.010		mg/L		0.01	04-NOV-21
Cadmium (Cd)-Dissolved			<0.000005(		mg/L		0.000005	04-NOV-21
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	04-NOV-21
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	04-NOV-21
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	04-NOV-21
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	04-NOV-21
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	04-NOV-21
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	04-NOV-21
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	04-NOV-21
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	04-NOV-21
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	04-NOV-21
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	04-NOV-21
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	04-NOV-21
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	04-NOV-21
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	04-NOV-21
Potassium (K)-Dissolved			<0.050		mg/L		0.05	04-NOV-21
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	04-NOV-21
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	04-NOV-21
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	04-NOV-21
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	04-NOV-21

Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5636599								
WG3652107-1 MB								
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	04-NOV-21
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	04-NOV-21
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	04-NOV-21
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	04-NOV-21
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	04-NOV-21
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	04-NOV-21
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	04-NOV-21
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	04-NOV-21
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	04-NOV-21
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	04-NOV-21
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	04-NOV-21
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	04-NOV-21
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	04-NOV-21
WG3652107-5 MS		**WG3652107-3**						
Aluminum (Al)-Dissolved			92.6		%		70-130	04-NOV-21
Antimony (Sb)-Dissolved			94.3		%		70-130	04-NOV-21
Arsenic (As)-Dissolved			94.8		%		70-130	04-NOV-21
Barium (Ba)-Dissolved			93.2		%		70-130	04-NOV-21
Beryllium (Be)-Dissolved			91.1		%		70-130	04-NOV-21
Bismuth (Bi)-Dissolved			88.5		%		70-130	04-NOV-21
Boron (B)-Dissolved			91.7		%		70-130	04-NOV-21
Cadmium (Cd)-Dissolved			94.0		%		70-130	04-NOV-21
Calcium (Ca)-Dissolved			N/A	MS-B	%		-	04-NOV-21
Cesium (Cs)-Dissolved			90.1		%		70-130	04-NOV-21
Chromium (Cr)-Dissolved			94.1		%		70-130	04-NOV-21
Cobalt (Co)-Dissolved			92.5		%		70-130	04-NOV-21
Copper (Cu)-Dissolved			92.9		%		70-130	04-NOV-21
Iron (Fe)-Dissolved			93.3		%		70-130	04-NOV-21
Lead (Pb)-Dissolved			92.0		%		70-130	04-NOV-21
Lithium (Li)-Dissolved			98.3		%		70-130	04-NOV-21
Magnesium (Mg)-Dissolved			N/A	MS-B	%		-	04-NOV-21
Manganese (Mn)-Dissolved			91.1		%		70-130	04-NOV-21
Molybdenum (Mo)-Dissolved			94.4		%		70-130	04-NOV-21
Nickel (Ni)-Dissolved			94.7		%		70-130	04-NOV-21

Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5636599								
WG3652107-5 MS		**WG3652107-3**						
Phosphorus (P)-Dissolved			96.3		%		70-130	04-NOV-21
Potassium (K)-Dissolved			95.9		%		70-130	04-NOV-21
Rubidium (Rb)-Dissolved			93.1		%		70-130	04-NOV-21
Selenium (Se)-Dissolved			97.9		%		70-130	04-NOV-21
Silicon (Si)-Dissolved			94.0		%		70-130	04-NOV-21
Silver (Ag)-Dissolved			93.8		%		70-130	04-NOV-21
Sodium (Na)-Dissolved			N/A	MS-B	%		-	04-NOV-21
Strontium (Sr)-Dissolved			N/A	MS-B	%		-	04-NOV-21
Sulfur (S)-Dissolved			92.9		%		70-130	04-NOV-21
Tellurium (Te)-Dissolved			91.6		%		70-130	04-NOV-21
Thallium (Tl)-Dissolved			91.8		%		70-130	04-NOV-21
Thorium (Th)-Dissolved			91.6		%		70-130	04-NOV-21
Tin (Sn)-Dissolved			92.1		%		70-130	04-NOV-21
Titanium (Ti)-Dissolved			93.0		%		70-130	04-NOV-21
Tungsten (W)-Dissolved			95.1		%		70-130	04-NOV-21
Uranium (U)-Dissolved			90.6		%		70-130	04-NOV-21
Vanadium (V)-Dissolved			95.2		%		70-130	04-NOV-21
Zinc (Zn)-Dissolved			96.9		%		70-130	04-NOV-21
Zirconium (Zr)-Dissolved			97.8		%		70-130	04-NOV-21
MET-T-CCMS-WT	**Water**							
Batch R5634397								
WG3650158-4 DUP		**WG3650158-3**						
Aluminum (Al)-Total		0.210	0.214		mg/L	1.6	20	02-NOV-21
Antimony (Sb)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	02-NOV-21
Arsenic (As)-Total		0.00085	0.00085		mg/L	0.4	20	02-NOV-21
Barium (Ba)-Total		0.00877	0.00882		mg/L	0.6	20	02-NOV-21
Beryllium (Be)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	02-NOV-21
Bismuth (Bi)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	02-NOV-21
Boron (B)-Total		0.013	0.013		mg/L	0.9	20	02-NOV-21
Cadmium (Cd)-Total		0.0000171	0.0000156		mg/L	9.2	20	02-NOV-21
Calcium (Ca)-Total		20.7	19.5		mg/L	6.4	20	02-NOV-21
Chromium (Cr)-Total		0.00175	0.00171		mg/L	2.5	20	02-NOV-21
Cesium (Cs)-Total		0.000019	0.000019		mg/L	1.1	20	02-NOV-21

Quality Control Report

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Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5634397								
WG3650158-4 DUP		**WG3650158-3**						
Cobalt (Co)-Total		0.00016	0.00016		mg/L	1.0	20	02-NOV-21
Copper (Cu)-Total		0.00175	0.00159		mg/L	9.4	20	02-NOV-21
Iron (Fe)-Total		0.442	0.440		mg/L	0.5	20	02-NOV-21
Lead (Pb)-Total		0.000142	0.000135		mg/L	4.5	20	02-NOV-21
Lithium (Li)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	02-NOV-21
Magnesium (Mg)-Total		5.18	5.29		mg/L	2.2	20	02-NOV-21
Manganese (Mn)-Total		0.0286	0.0288		mg/L	0.5	20	02-NOV-21
Molybdenum (Mo)-Total		0.000152	0.000133		mg/L	13	20	02-NOV-21
Nickel (Ni)-Total		0.00125	0.00113		mg/L	10	20	02-NOV-21
Phosphorus (P)-Total		<0.050	<0.050	RPD-NA	mg/L	N/A	20	02-NOV-21
Potassium (K)-Total		0.585	0.586		mg/L	0.3	20	02-NOV-21
Rubidium (Rb)-Total		0.00141	0.00152		mg/L	7.2	20	02-NOV-21
Selenium (Se)-Total		0.000117	0.000100		mg/L	15	20	02-NOV-21
Silicon (Si)-Total		2.96	2.94		mg/L	0.6	20	02-NOV-21
Silver (Ag)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	02-NOV-21
Sodium (Na)-Total		3.37	3.45		mg/L	2.5	20	02-NOV-21
Strontium (Sr)-Total		0.0338	0.0335		mg/L	1.0	20	02-NOV-21
Sulfur (S)-Total		1.80	1.77		mg/L	1.7	20	02-NOV-21
Thallium (Tl)-Total		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	02-NOV-21
Tellurium (Te)-Total		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	02-NOV-21
Thorium (Th)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	02-NOV-21
Tin (Sn)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	02-NOV-21
Titanium (Ti)-Total		0.00741	0.00745		mg/L	0.5	20	02-NOV-21
Tungsten (W)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	02-NOV-21
Uranium (U)-Total		0.000077	0.000074		mg/L	3.1	20	02-NOV-21
Vanadium (V)-Total		0.00067	0.00064		mg/L	4.3	20	02-NOV-21
Zinc (Zn)-Total		0.0042	0.0039		mg/L	9.2	20	02-NOV-21
Zirconium (Zr)-Total		0.00033	0.00033		mg/L	1.8	20	02-NOV-21
WG3650158-2 LCS								
Aluminum (Al)-Total			102.9		%		80-120	02-NOV-21
Antimony (Sb)-Total			101.4		%		80-120	02-NOV-21
Arsenic (As)-Total			104.0		%		80-120	02-NOV-21
Barium (Ba)-Total			105.7		%		80-120	02-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5634397								
WG3650158-2 LCS								
Beryllium (Be)-Total			102.5		%		80-120	02-NOV-21
Bismuth (Bi)-Total			99.7		%		80-120	02-NOV-21
Boron (B)-Total			96.6		%		80-120	02-NOV-21
Cadmium (Cd)-Total			105.5		%		80-120	02-NOV-21
Calcium (Ca)-Total			99.8		%		80-120	02-NOV-21
Chromium (Cr)-Total			103.5		%		80-120	02-NOV-21
Cesium (Cs)-Total			103.0		%		80-120	02-NOV-21
Cobalt (Co)-Total			101.8		%		80-120	02-NOV-21
Copper (Cu)-Total			101.5		%		80-120	02-NOV-21
Iron (Fe)-Total			102.4		%		80-120	02-NOV-21
Lead (Pb)-Total			99.7		%		80-120	02-NOV-21
Lithium (Li)-Total			100.7		%		80-120	02-NOV-21
Magnesium (Mg)-Total			111.2		%		80-120	02-NOV-21
Manganese (Mn)-Total			101.4		%		80-120	02-NOV-21
Molybdenum (Mo)-Total			102.3		%		80-120	02-NOV-21
Nickel (Ni)-Total			101.7		%		80-120	02-NOV-21
Phosphorus (P)-Total			97.8		%		70-130	02-NOV-21
Potassium (K)-Total			98.7		%		80-120	02-NOV-21
Rubidium (Rb)-Total			107.0		%		80-120	02-NOV-21
Selenium (Se)-Total			103.1		%		80-120	02-NOV-21
Silicon (Si)-Total			96.9		%		60-140	02-NOV-21
Silver (Ag)-Total			102.8		%		80-120	02-NOV-21
Sodium (Na)-Total			110.1		%		80-120	02-NOV-21
Strontium (Sr)-Total			99.7		%		80-120	02-NOV-21
Sulfur (S)-Total			93.4		%		80-120	02-NOV-21
Thallium (Tl)-Total			97.2		%		80-120	02-NOV-21
Tellurium (Te)-Total			104.5		%		80-120	02-NOV-21
Thorium (Th)-Total			98.0		%		80-120	02-NOV-21
Tin (Sn)-Total			104.3		%		80-120	02-NOV-21
Titanium (Ti)-Total			98.5		%		80-120	02-NOV-21
Tungsten (W)-Total			95.9		%		80-120	02-NOV-21
Uranium (U)-Total			99.7		%		80-120	02-NOV-21
Vanadium (V)-Total			102.5		%		80-120	02-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5634397								
WG3650158-2 LCS								
Zinc (Zn)-Total			98.5		%		80-120	02-NOV-21
Zirconium (Zr)-Total			96.0		%		80-120	02-NOV-21
WG3650158-1 MB								
Aluminum (Al)-Total			<0.0050		mg/L		0.005	03-NOV-21
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	02-NOV-21
Arsenic (As)-Total			<0.00010		mg/L		0.0001	02-NOV-21
Barium (Ba)-Total			<0.00010		mg/L		0.0001	02-NOV-21
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	02-NOV-21
Bismuth (Bi)-Total			<0.000050		mg/L		0.00005	02-NOV-21
Boron (B)-Total			<0.010		mg/L		0.01	02-NOV-21
Cadmium (Cd)-Total			<0.000005(		mg/L		0.000005	02-NOV-21
Calcium (Ca)-Total			<0.050		mg/L		0.05	02-NOV-21
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	03-NOV-21
Cesium (Cs)-Total			<0.000010		mg/L		0.00001	02-NOV-21
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	02-NOV-21
Copper (Cu)-Total			<0.00050		mg/L		0.0005	02-NOV-21
Iron (Fe)-Total			<0.010		mg/L		0.01	02-NOV-21
Lead (Pb)-Total			<0.000050		mg/L		0.00005	02-NOV-21
Lithium (Li)-Total			<0.0010		mg/L		0.001	02-NOV-21
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	02-NOV-21
Manganese (Mn)-Total			<0.00050		mg/L		0.0005	02-NOV-21
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	02-NOV-21
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	02-NOV-21
Phosphorus (P)-Total			<0.050		mg/L		0.05	02-NOV-21
Potassium (K)-Total			<0.050		mg/L		0.05	02-NOV-21
Rubidium (Rb)-Total			<0.00020		mg/L		0.0002	02-NOV-21
Selenium (Se)-Total			<0.000050		mg/L		0.00005	02-NOV-21
Silicon (Si)-Total			<0.10		mg/L		0.1	02-NOV-21
Silver (Ag)-Total			<0.000050		mg/L		0.00005	02-NOV-21
Sodium (Na)-Total			<0.050		mg/L		0.05	02-NOV-21
Strontium (Sr)-Total			<0.0010		mg/L		0.001	02-NOV-21
Sulfur (S)-Total			<0.50		mg/L		0.5	02-NOV-21
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	02-NOV-21
Tellurium (Te)-Total			<0.00020		mg/L		0.0002	02-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5634397								
WG3650158-1 MB								
Thorium (Th)-Total			<0.00010		mg/L		0.0001	02-NOV-21
Tin (Sn)-Total			<0.00010		mg/L		0.0001	02-NOV-21
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	02-NOV-21
Tungsten (W)-Total			<0.00010		mg/L		0.0001	02-NOV-21
Uranium (U)-Total			<0.000010		mg/L		0.00001	02-NOV-21
Vanadium (V)-Total			<0.00050		mg/L		0.0005	02-NOV-21
Zinc (Zn)-Total			<0.0030		mg/L		0.003	02-NOV-21
Zirconium (Zr)-Total			<0.00020		mg/L		0.0002	02-NOV-21
WG3650158-5 MS		**WG3650158-6**						
Aluminum (Al)-Total			N/A	MS-B	%		-	02-NOV-21
Antimony (Sb)-Total			103.7		%		70-130	02-NOV-21
Arsenic (As)-Total			103.2		%		70-130	02-NOV-21
Barium (Ba)-Total			98.2		%		70-130	02-NOV-21
Beryllium (Be)-Total			103.7		%		70-130	02-NOV-21
Bismuth (Bi)-Total			98.7		%		70-130	02-NOV-21
Boron (B)-Total			97.7		%		70-130	02-NOV-21
Cadmium (Cd)-Total			109.5		%		70-130	02-NOV-21
Calcium (Ca)-Total			N/A	MS-B	%		-	02-NOV-21
Chromium (Cr)-Total			103.9		%		70-130	02-NOV-21
Cesium (Cs)-Total			102.1		%		70-130	02-NOV-21
Cobalt (Co)-Total			103.1		%		70-130	02-NOV-21
Copper (Cu)-Total			105.5		%		70-130	02-NOV-21
Iron (Fe)-Total			N/A	MS-B	%		-	02-NOV-21
Lead (Pb)-Total			97.6		%		70-130	02-NOV-21
Lithium (Li)-Total			99.5		%		70-130	02-NOV-21
Magnesium (Mg)-Total			N/A	MS-B	%		-	02-NOV-21
Manganese (Mn)-Total			N/A	MS-B	%		-	02-NOV-21
Molybdenum (Mo)-Total			101.6		%		70-130	02-NOV-21
Nickel (Ni)-Total			102.1		%		70-130	02-NOV-21
Phosphorus (P)-Total			103.4		%		70-130	02-NOV-21
Potassium (K)-Total			97.2		%		70-130	02-NOV-21
Rubidium (Rb)-Total			99.7		%		70-130	02-NOV-21
Selenium (Se)-Total			106.0		%		70-130	02-NOV-21
Silicon (Si)-Total			N/A	MS-B	%		-	02-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5634397								
WG3650158-5 MS		**WG3650158-6**						
Silver (Ag)-Total			101.0		%		70-130	02-NOV-21
Sodium (Na)-Total			N/A	MS-B	%		-	02-NOV-21
Strontium (Sr)-Total			N/A	MS-B	%		-	02-NOV-21
Sulfur (S)-Total			97.4		%		70-130	02-NOV-21
Thallium (Tl)-Total			98.7		%		70-130	02-NOV-21
Tellurium (Te)-Total			101.5		%		70-130	02-NOV-21
Thorium (Th)-Total			97.1		%		70-130	02-NOV-21
Tin (Sn)-Total			102.8		%		70-130	02-NOV-21
Titanium (Ti)-Total			99.95		%		70-130	02-NOV-21
Tungsten (W)-Total			95.4		%		70-130	02-NOV-21
Uranium (U)-Total			95.6		%		70-130	02-NOV-21
Vanadium (V)-Total			103.3		%		70-130	02-NOV-21
Zinc (Zn)-Total			103.7		%		70-130	02-NOV-21
Zirconium (Zr)-Total			88.2		%		70-130	02-NOV-21
NH3-COL-WP	**Water**							
Batch R5636533								
WG3653060-3 DUP		**L2658055-3**						
Ammonia, Total (as N)		0.026	0.027		mg/L	1.5	20	04-NOV-21
WG3653060-2 LCS								
Ammonia, Total (as N)			98.4		%		85-115	04-NOV-21
WG3653060-1 MB								
Ammonia, Total (as N)			<0.010		mg/L		0.01	04-NOV-21
WG3653060-4 MS		**L2658055-3**						
Ammonia, Total (as N)			88.7		%		75-125	04-NOV-21
NO2-IC-WT	**Water**							
Batch R5635989								
WG3651635-9 DUP		**L2657480-2**						
Nitrite (as N)		<0.010	<0.010	RPD-NA	mg/L	N/A	20	03-NOV-21
WG3651635-7 LCS								
Nitrite (as N)			97.8		%		90-110	03-NOV-21
WG3651635-6 MB								
Nitrite (as N)			<0.010		mg/L		0.01	03-NOV-21
WG3651635-10 MS		**L2657480-2**						
Nitrite (as N)			100.5		%		75-125	03-NOV-21
NO3-IC-WT	**Water**							

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NO3-IC-WT	**Water**							
Batch R5635989								
WG3651635-9 DUP		**L2657480-2**						
Nitrate (as N)		<0.020	<0.020	RPD-NA	mg/L	N/A	20	03-NOV-21
WG3651635-7 LCS								
Nitrate (as N)			97.3		%		90-110	03-NOV-21
WG3651635-6 MB								
Nitrate (as N)			<0.020		mg/L		0.02	03-NOV-21
WG3651635-10 MS		**L2657480-2**						
Nitrate (as N)			98.4		%		75-125	03-NOV-21
P-T-L-COL-WP	**Water**							
Batch R5652956								
WG3659504-3 DUP		**L2659340-1**						
Phosphorus (P)-Total		0.0039	0.0037		mg/L	4.2	20	17-NOV-21
WG3659504-7 DUP		**L2657480-1**						
Phosphorus (P)-Total		0.0180	0.0166		mg/L	8.0	20	17-NOV-21
WG3659504-2 LCS								
Phosphorus (P)-Total			82.4		%		80-120	17-NOV-21
WG3659504-6 LCS								
Phosphorus (P)-Total			85.4		%		80-120	17-NOV-21
WG3659504-1 MB								
Phosphorus (P)-Total			<0.0010		mg/L		0.001	17-NOV-21
WG3659504-5 MB								
Phosphorus (P)-Total			<0.0010		mg/L		0.001	17-NOV-21
WG3659504-4 MS		**L2659354-1**						
Phosphorus (P)-Total			88.3		%		70-130	17-NOV-21
WG3659504-8 MS		**L2657480-2**						
Phosphorus (P)-Total			N/A	MS-B	%		-	17-NOV-21
PH-WT	**Water**							
Batch R5635996								
WG3650457-4 DUP		**WG3650457-3**						
pH		8.10	8.13	J	pH units	0.03	0.2	02-NOV-21
WG3650457-2 LCS								
pH			7.05		pH units		6.9-7.1	02-NOV-21
SO4-IC-N-WT	**Water**							
Batch R5635989								
WG3651635-9 DUP		**L2657480-2**						
Sulfate (SO4)		<0.30	<0.30	RPD-NA	mg/L	N/A	20	03-NOV-21
WG3651635-7 LCS								

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SO4-IC-N-WT	**Water**							
Batch R5635989								
WG3651635-7 LCS								
Sulfate (SO4)			98.9		%		90-110	03-NOV-21
WG3651635-6 MB								
Sulfate (SO4)			<0.30		mg/L		0.3	03-NOV-21
WG3651635-10 MS		**L2657480-2**						
Sulfate (SO4)			101.5		%		75-125	03-NOV-21
SOLIDS-TDS-WT	**Water**							
Batch R5642399								
WG3656039-3 DUP		**L2661273-1**						
Total Dissolved Solids		176	176		mg/L	0.3	20	10-NOV-21
WG3656039-2 LCS								
Total Dissolved Solids			101.7		%		85-115	10-NOV-21
WG3656039-1 MB								
Total Dissolved Solids			<10		mg/L		10	10-NOV-21
SOLIDS-TSS-WT	**Water**							
Batch R5641839								
WG3656036-3 DUP		**WG3656036-4**						
Total Suspended Solids		10100	10000		mg/L	0.6	20	11-NOV-21
WG3656036-2 LCS								
Total Suspended Solids			103.7		%		85-115	11-NOV-21
WG3656036-1 MB								
Total Suspended Solids			<3.0		mg/L		3	11-NOV-21

Quality Control Report

Workorder: L2657480 Report Date: 18-NOV-21

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Legend:

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

Sample Parameter Qualifier Definitions:

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

Quality Control Report

Workorder: L2657480 Report Date: 18-NOV-21

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
Suspended solids							
	1	19-OCT-21 13:20	11-NOV-21 00:00	7	22	days	EHTR
	2	19-OCT-21 17:30	11-NOV-21 00:00	7	22	days	EHTR
	3	20-OCT-21 15:45	11-NOV-21 00:00	7	21	days	EHTR
	4	20-OCT-21 08:40	11-NOV-21 00:00	7	22	days	EHTR
Total Dissolved Solids							
	1	19-OCT-21 13:20	10-NOV-21 00:00	7	21	days	EHTR
	2	19-OCT-21 17:30	10-NOV-21 00:00	7	21	days	EHTR
	3	20-OCT-21 15:45	10-NOV-21 00:00	7	20	days	EHTR
	4	20-OCT-21 08:40	10-NOV-21 00:00	7	21	days	EHTR
pH							
	1	19-OCT-21 13:20	02-NOV-21 00:00	4	13	days	EHTR
	2	19-OCT-21 17:30	02-NOV-21 00:00	4	13	days	EHTR
	3	20-OCT-21 15:45	02-NOV-21 00:00	4	12	days	EHTR
	4	20-OCT-21 08:40	02-NOV-21 00:00	4	13	days	EHTR
Leachable Anions & Nutrients							
Nitrate in Water by IC							
	1	19-OCT-21 13:20	03-NOV-21 14:42	7	15	days	EHTR
	2	19-OCT-21 17:30	03-NOV-21 14:42	7	15	days	EHTR
	3	20-OCT-21 15:45	03-NOV-21 14:42	7	14	days	EHTR
	4	20-OCT-21 08:40	03-NOV-21 14:42	7	14	days	EHTR
Nitrite in Water by IC							
	1	19-OCT-21 13:20	03-NOV-21 14:42	7	15	days	EHTR
	2	19-OCT-21 17:30	03-NOV-21 14:42	7	15	days	EHTR
	3	20-OCT-21 15:45	03-NOV-21 14:42	7	14	days	EHTR
	4	20-OCT-21 08:40	03-NOV-21 14:42	7	14	days	EHTR
Anions and Nutrients							
Phosphorus, Total							
	1	19-OCT-21 13:20	17-NOV-21 16:30	28	29	days	EHT
	2	19-OCT-21 17:30	17-NOV-21 16:30	28	29	days	EHT
Total Metals							
Total Mercury in Water by CVAFS (Ultra)							
	1	19-OCT-21 13:20	17-NOV-21 21:18	28	29	days	EHT
	2	19-OCT-21 17:30	17-NOV-21 21:18	28	29	days	EHT
	4	20-OCT-21 08:40	17-NOV-21 21:18	28	29	days	EHT

Legend & Qualifier Definitions:

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

Notes*:
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2657480 were received on 29-OCT-21 10:11.

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

Quality Control Report

Workorder: L2657480 Report Date: 18-NOV-21

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

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

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

Chain of Custody (COC) / Analytical Request Form

COC Number: **20 -**

Page of

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Report To	Contact and company name below will appear on the final report
Company:	Wood E&IS
Contact:	Dale Klodnicki
Phone:	(647) 993-4243
	Company address below will appear on the final report
Street:	2020 Winston Park Dirve, Suite 600
City/Province:	Oakville, ON
Postal Code:	L6H 6X7
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Wood E&IS
Contact:	Dale Klodnicki

Reports / Recipients	
Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Merge QC/QCI Reports with COA	☑ YES ☐ NO ☐ N/A
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	dale.klodnicki@woodplc.com
Email 2	michael.godard@woodplc.com
Email 3	

Invoice Recipients	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	APInvoice.Canada@woodplc.com
Email 2	dale.klodnicki@woodplc.com

Project Information	
ALS Account # / Quote #:	Q86725
Job #:	OMEMA2002
PO / AFE:	OMEMA2002.2021C.200.5120.573000
LSD:	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (ALS use only):

ALS Contact: Gayle Braun **Sampler:** TB / MG

Turnaround Time (TAT) Requested

- ☑ Routine [R] if received by 3pm M-F - no surcharges apply
- ☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
- ☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
- ☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
- ☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
- ☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.

Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests.

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

AFFIX ALS BARCODE LABEL HERE (ALS use only)

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	F/P	Dissolved Metals	Total Metals	Acidity, Alkalinity, Hardness, pH	Anions, Conductivity	Total & Free Cyanide	Cyanide WAD	Total Mercury by CVAFS (Ultra)	Total Mthylmercury by GCAFS	Ammonia, Total Phosphorus	Radium 226	Total Suspended Solids	Total Dissolved Solids			SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	NDR-TRIB-01	19-Oct-21	13:20	SW	7	R	R	R	R	R	R	R	R	R		R	R					
	NDR-P-04	19-Oct-21	17:30	SW	7	R	R	R	R	R	R	R	R	R		R	R					
	NDR-TRIB-02	20-Oct-21	15:45	SW	7	R	R	R	R	R	R	R	R	R		R	R					
	NDR-P-03	20-Oct-21	8:40	SW	7	R	R	R	R	R	R	R	R	R		R	R					
		-	-																			
		-	-																			
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Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

[Combined] - Ontario PWQO+CCME-FAL-WATER

Federal CCME Canadian Environmental Quality Guidelines (JUL, 2012)

NDR-TRIB-01 – Field Temp: 11.0 / pH: 6.57 | NDR-P-04 – Field Temp: 12.9 / pH: 6.83
NDR-TRIB-02 – Field Temp: 7.55 / pH: 5.46 | NDR-P-03 – Field Temp: 10.9 / pH: 6.82

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☐ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)		
Released by: M.Godard	Date: 21-Oct-21 08:00	Time:

INITIAL SHIPMENT RECEPTION (ALS use only)		
Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (ALS use only)		
Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

AUG 2020 FRONT

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

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

Wood Environment & Infrastructure Solutions
ATTN: Dale Klodnicki
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7

Date Received: 30-OCT-21
Report Date: 14-DEC-21 10:27 (MT)
Version: FINAL

Client Phone: 905-568-2929

Certificate of Analysis

Lab Work Order #: L2657407

Project P.O. #: OMEMA2002.2021C.200.5120.573000
Job Reference: OMEMA2002
C of C Numbers:
Legal Site Desc:

Comments: MeHg for MATR-02 not analyzed due to sample receiving error

<original signed by>

Gayle Braun
Senior Account Manager

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657407-1 MATR-01 Sampled By: RD/MG on 28-OCT-21 @ 11:00 Matrix: SW							
Physical Tests							
Conductivity	133		1.0	umhos/cm		02-NOV-21	R5634430
Hardness (as CaCO3)	65.6	HTC	0.50	mg/L		04-NOV-21	
pH	7.72	PEHT	0.10	pH units		02-NOV-21	R5634430
Total Suspended Solids	<3.0		3.0	mg/L	03-NOV-21	04-NOV-21	R5636099
Total Dissolved Solids	99	RRR	13	mg/L		05-NOV-21	R5637098
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	64.9		1.0	mg/L		02-NOV-21	R5634430
Ammonia, Total (as N)	0.016		0.010	mg/L		08-NOV-21	R5637863
Bromide (Br)	<0.10		0.10	mg/L		03-NOV-21	R5635989
Chloride (Cl)	3.62		0.50	mg/L		03-NOV-21	R5635989
Fluoride (F)	0.037		0.020	mg/L		03-NOV-21	R5635989
Nitrate (as N)	0.094		0.020	mg/L		03-NOV-21	R5635989
Nitrite (as N)	<0.010		0.010	mg/L		03-NOV-21	R5635989
Phosphorus (P)-Total	0.0191		0.0010	mg/L		19-NOV-21	R5654469
Sulfate (SO4)	5.10		0.30	mg/L		03-NOV-21	R5635989
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L		02-NOV-21	R5635096
Cyanide, Total	<0.0020		0.0020	mg/L		02-NOV-21	R5635096
Cyanide, Free	<0.0020		0.0020	mg/L		02-NOV-21	R5635096
Inorganic Parameters							
Acidity (as CaCO3)	3.5		2.0	mg/L		02-NOV-21	R5634874
Total Metals							
Aluminum (Al)-Total	0.202		0.0050	mg/L	03-NOV-21	04-NOV-21	R5636079
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	03-NOV-21	04-NOV-21	R5636079
Arsenic (As)-Total	0.00082		0.00010	mg/L	03-NOV-21	04-NOV-21	R5636079
Barium (Ba)-Total	0.00823		0.00010	mg/L	03-NOV-21	04-NOV-21	R5636079
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	03-NOV-21	04-NOV-21	R5636079
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	03-NOV-21	04-NOV-21	R5636079
Boron (B)-Total	0.012		0.010	mg/L	03-NOV-21	04-NOV-21	R5636079
Cadmium (Cd)-Total	0.0000151		0.0000050	mg/L	03-NOV-21	04-NOV-21	R5636079
Calcium (Ca)-Total	18.4		0.050	mg/L	03-NOV-21	04-NOV-21	R5636079
Cesium (Cs)-Total	0.000019		0.000010	mg/L	03-NOV-21	04-NOV-21	R5636079
Chromium (Cr)-Total	0.00069		0.00050	mg/L	03-NOV-21	04-NOV-21	R5636079
Cobalt (Co)-Total	0.00017		0.00010	mg/L	03-NOV-21	04-NOV-21	R5636079
Copper (Cu)-Total	0.00133		0.00050	mg/L	03-NOV-21	04-NOV-21	R5636079
Iron (Fe)-Total	0.448		0.010	mg/L	03-NOV-21	04-NOV-21	R5636079
Lead (Pb)-Total	0.000125		0.000050	mg/L	03-NOV-21	04-NOV-21	R5636079
Lithium (Li)-Total	<0.0010		0.0010	mg/L	03-NOV-21	04-NOV-21	R5636079
Magnesium (Mg)-Total	4.78		0.0050	mg/L	03-NOV-21	04-NOV-21	R5636079
Manganese (Mn)-Total	0.0319		0.00050	mg/L	03-NOV-21	04-NOV-21	R5636079
Mercury (Hg)-Total	0.00200		0.00050	ug/L		17-NOV-21	R5652727
Molybdenum (Mo)-Total	0.000132		0.000050	mg/L	03-NOV-21	04-NOV-21	R5636079

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657407-1 MATR-01 Sampled By: RD/MG on 28-OCT-21 @ 11:00 Matrix: SW							
Total Metals							
Nickel (Ni)-Total	0.00070		0.00050	mg/L	03-NOV-21	04-NOV-21	R5636079
Phosphorus (P)-Total	<0.050		0.050	mg/L	03-NOV-21	04-NOV-21	R5636079
Potassium (K)-Total	0.584		0.050	mg/L	03-NOV-21	04-NOV-21	R5636079
Rubidium (Rb)-Total	0.00147		0.00020	mg/L	03-NOV-21	04-NOV-21	R5636079
Selenium (Se)-Total	0.000115		0.000050	mg/L	03-NOV-21	04-NOV-21	R5636079
Silicon (Si)-Total	2.99		0.10	mg/L	03-NOV-21	04-NOV-21	R5636079
Silver (Ag)-Total	<0.000050		0.000050	mg/L	03-NOV-21	04-NOV-21	R5636079
Sodium (Na)-Total	3.69		0.050	mg/L	03-NOV-21	04-NOV-21	R5636079
Strontium (Sr)-Total	0.0347		0.0010	mg/L	03-NOV-21	04-NOV-21	R5636079
Sulfur (S)-Total	1.77		0.50	mg/L	03-NOV-21	04-NOV-21	R5636079
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	03-NOV-21	04-NOV-21	R5636079
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	03-NOV-21	04-NOV-21	R5636079
Thorium (Th)-Total	<0.00010		0.00010	mg/L	03-NOV-21	04-NOV-21	R5636079
Tin (Sn)-Total	<0.00010		0.00010	mg/L	03-NOV-21	04-NOV-21	R5636079
Titanium (Ti)-Total	0.00684		0.00030	mg/L	03-NOV-21	04-NOV-21	R5636079
Tungsten (W)-Total	<0.00010		0.00010	mg/L	03-NOV-21	04-NOV-21	R5636079
Uranium (U)-Total	0.000074		0.000010	mg/L	03-NOV-21	04-NOV-21	R5636079
Vanadium (V)-Total	0.00063		0.00050	mg/L	03-NOV-21	04-NOV-21	R5636079
Zinc (Zn)-Total	0.0032		0.0030	mg/L	03-NOV-21	04-NOV-21	R5636079
Zirconium (Zr)-Total	0.00029		0.00020	mg/L	03-NOV-21	04-NOV-21	R5636079
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					04-NOV-21	R5636376
Aluminum (Al)-Dissolved	0.0681		0.0010	mg/L	04-NOV-21	04-NOV-21	R5636599
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Arsenic (As)-Dissolved	0.00076		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Barium (Ba)-Dissolved	0.00720		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Boron (B)-Dissolved	0.014		0.010	mg/L	04-NOV-21	04-NOV-21	R5636599
Cadmium (Cd)-Dissolved	0.0000131		0.0000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Calcium (Ca)-Dissolved	19.4		0.050	mg/L	04-NOV-21	04-NOV-21	R5636599
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	04-NOV-21	04-NOV-21	R5636599
Chromium (Cr)-Dissolved	0.00037		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Copper (Cu)-Dissolved	0.00120		0.00020	mg/L	04-NOV-21	04-NOV-21	R5636599
Iron (Fe)-Dissolved	0.235		0.010	mg/L	04-NOV-21	04-NOV-21	R5636599
Lead (Pb)-Dissolved	0.000058		0.000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	04-NOV-21	04-NOV-21	R5636599
Magnesium (Mg)-Dissolved	4.90		0.0050	mg/L	04-NOV-21	04-NOV-21	R5636599
Manganese (Mn)-Dissolved	0.0180		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Molybdenum (Mo)-Dissolved	0.000118		0.000050	mg/L	04-NOV-21	04-NOV-21	R5636599

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657407-1 MATR-01 Sampled By: RD/MG on 28-OCT-21 @ 11:00 Matrix: SW							
Dissolved Metals							
Nickel (Ni)-Dissolved	0.00055		0.00050	mg/L	04-NOV-21	04-NOV-21	R5636599
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	04-NOV-21	04-NOV-21	R5636599
Potassium (K)-Dissolved	0.513		0.050	mg/L	04-NOV-21	04-NOV-21	R5636599
Rubidium (Rb)-Dissolved	0.00123		0.00020	mg/L	04-NOV-21	04-NOV-21	R5636599
Selenium (Se)-Dissolved	0.000109		0.000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Silicon (Si)-Dissolved	2.71		0.050	mg/L	04-NOV-21	04-NOV-21	R5636599
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	04-NOV-21	04-NOV-21	R5636599
Sodium (Na)-Dissolved	3.24		0.050	mg/L	04-NOV-21	04-NOV-21	R5636599
Strontium (Sr)-Dissolved	0.0332		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Sulfur (S)-Dissolved	1.87		0.50	mg/L	04-NOV-21	04-NOV-21	R5636599
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	04-NOV-21	04-NOV-21	R5636599
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	04-NOV-21	04-NOV-21	R5636599
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Titanium (Ti)-Dissolved	0.00207		0.00030	mg/L	04-NOV-21	04-NOV-21	R5636599
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Uranium (U)-Dissolved	0.000069		0.000010	mg/L	04-NOV-21	04-NOV-21	R5636599
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	04-NOV-21	04-NOV-21	R5636599
Zinc (Zn)-Dissolved	0.0021		0.0010	mg/L	04-NOV-21	04-NOV-21	R5636599
Zirconium (Zr)-Dissolved	0.00025		0.00020	mg/L	04-NOV-21	04-NOV-21	R5636599
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000148		0.000020	ug/L	08-NOV-21	08-NOV-21	R5636098
Radiological Parameters							
Ra-226	<0.0020		0.0020	Bq/L	18-NOV-21	24-NOV-21	R5659878
Report Remarks : PEHT Parameter Exceeded Recommended Holding Time Prior to Analysis DLDS Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.							
L2657407-2 MATR-02 Sampled By: RD/MG on 28-OCT-21 @ 11:45 Matrix: SW							
Physical Tests							
Conductivity	131		1.0	umhos/cm		02-NOV-21	R5634430
Hardness (as CaCO3)	73.1	HTC	0.50	mg/L		04-NOV-21	
pH	8.01	PEHT	0.10	pH units		02-NOV-21	R5634430
Total Suspended Solids	4.1		3.0	mg/L	03-NOV-21	04-NOV-21	R5636099
Total Dissolved Solids	86	RRR	13	mg/L		05-NOV-21	R5637098
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	63.6		1.0	mg/L		02-NOV-21	R5634430
Ammonia, Total (as N)	0.019		0.010	mg/L		08-NOV-21	R5637863
Bromide (Br)	<0.10		0.10	mg/L		03-NOV-21	R5635989
Chloride (Cl)	3.67		0.50	mg/L		03-NOV-21	R5635989
Fluoride (F)	0.035		0.020	mg/L		03-NOV-21	R5635989

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657407-2 MATR-02 Sampled By: RD/MG on 28-OCT-21 @ 11:45 Matrix: SW							
Anions and Nutrients							
Nitrate (as N)	0.100		0.020	mg/L		03-NOV-21	R5635989
Nitrite (as N)	<0.010		0.010	mg/L		03-NOV-21	R5635989
Phosphorus (P)-Total	0.0180		0.0010	mg/L		19-NOV-21	R5654469
Sulfate (SO4)	4.96		0.30	mg/L		03-NOV-21	R5635989
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L		02-NOV-21	R5635096
Cyanide, Total	<0.0020		0.0020	mg/L		02-NOV-21	R5635096
Cyanide, Free	<0.0020		0.0020	mg/L		02-NOV-21	R5635096
Inorganic Parameters							
Acidity (as CaCO3)	3.5		2.0	mg/L		02-NOV-21	R5634874
Total Metals							
Aluminum (Al)-Total	0.225		0.0050	mg/L	01-NOV-21	03-NOV-21	R5634397
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Arsenic (As)-Total	0.00085		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Barium (Ba)-Total	0.00877		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Boron (B)-Total	0.013		0.010	mg/L	01-NOV-21	02-NOV-21	R5634397
Cadmium (Cd)-Total	0.0000171		0.0000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Calcium (Ca)-Total	20.7		0.050	mg/L	01-NOV-21	02-NOV-21	R5634397
Cesium (Cs)-Total	0.000019		0.000010	mg/L	01-NOV-21	02-NOV-21	R5634397
Chromium (Cr)-Total	0.00070		0.00050	mg/L	01-NOV-21	03-NOV-21	R5634397
Cobalt (Co)-Total	0.00016		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Copper (Cu)-Total	0.00175		0.00050	mg/L	01-NOV-21	02-NOV-21	R5634397
Iron (Fe)-Total	0.442		0.010	mg/L	01-NOV-21	02-NOV-21	R5634397
Lead (Pb)-Total	0.000142		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Lithium (Li)-Total	<0.0010		0.0010	mg/L	01-NOV-21	02-NOV-21	R5634397
Magnesium (Mg)-Total	5.18		0.0050	mg/L	01-NOV-21	02-NOV-21	R5634397
Manganese (Mn)-Total	0.0286		0.00050	mg/L	01-NOV-21	02-NOV-21	R5634397
Mercury (Hg)-Total	0.00216		0.00050	ug/L		17-NOV-21	R5652727
Molybdenum (Mo)-Total	0.000152		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Nickel (Ni)-Total	0.00125		0.00050	mg/L	01-NOV-21	02-NOV-21	R5634397
Phosphorus (P)-Total	<0.050		0.050	mg/L	01-NOV-21	02-NOV-21	R5634397
Potassium (K)-Total	0.585		0.050	mg/L	01-NOV-21	02-NOV-21	R5634397
Rubidium (Rb)-Total	0.00141		0.00020	mg/L	01-NOV-21	02-NOV-21	R5634397
Selenium (Se)-Total	0.000117		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Silicon (Si)-Total	2.96		0.10	mg/L	01-NOV-21	02-NOV-21	R5634397
Silver (Ag)-Total	<0.000050		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Sodium (Na)-Total	3.37		0.050	mg/L	01-NOV-21	02-NOV-21	R5634397
Strontium (Sr)-Total	0.0338		0.0010	mg/L	01-NOV-21	02-NOV-21	R5634397
Sulfur (S)-Total	1.80		0.50	mg/L	01-NOV-21	02-NOV-21	R5634397
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-NOV-21	02-NOV-21	R5634397

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657407-2 MATR-02 Sampled By: RD/MG on 28-OCT-21 @ 11:45 Matrix: SW							
Total Metals							
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	01-NOV-21	02-NOV-21	R5634397
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Tin (Sn)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Titanium (Ti)-Total	0.00741		0.00030	mg/L	01-NOV-21	02-NOV-21	R5634397
Tungsten (W)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Uranium (U)-Total	0.000077		0.000010	mg/L	01-NOV-21	02-NOV-21	R5634397
Vanadium (V)-Total	0.00067		0.00050	mg/L	01-NOV-21	02-NOV-21	R5634397
Zinc (Zn)-Total	0.0042		0.0030	mg/L	01-NOV-21	02-NOV-21	R5634397
Zirconium (Zr)-Total	0.00033		0.00020	mg/L	01-NOV-21	02-NOV-21	R5634397
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					04-NOV-21	R5636376
Aluminum (Al)-Dissolved	0.0655		0.0010	mg/L	04-NOV-21	04-NOV-21	R5636599
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Arsenic (As)-Dissolved	0.00078		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Barium (Ba)-Dissolved	0.00725		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Boron (B)-Dissolved	0.015		0.010	mg/L	04-NOV-21	04-NOV-21	R5636599
Cadmium (Cd)-Dissolved	0.0000105		0.0000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Calcium (Ca)-Dissolved	19.6		0.050	mg/L	04-NOV-21	04-NOV-21	R5636599
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	04-NOV-21	04-NOV-21	R5636599
Chromium (Cr)-Dissolved	0.00035		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Copper (Cu)-Dissolved	0.00116		0.00020	mg/L	04-NOV-21	04-NOV-21	R5636599
Iron (Fe)-Dissolved	0.239		0.010	mg/L	04-NOV-21	04-NOV-21	R5636599
Lead (Pb)-Dissolved	0.000058		0.000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	04-NOV-21	04-NOV-21	R5636599
Magnesium (Mg)-Dissolved	5.10		0.0050	mg/L	04-NOV-21	04-NOV-21	R5636599
Manganese (Mn)-Dissolved	0.0163		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Molybdenum (Mo)-Dissolved	0.000134		0.000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Nickel (Ni)-Dissolved	0.00057		0.00050	mg/L	04-NOV-21	04-NOV-21	R5636599
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	04-NOV-21	04-NOV-21	R5636599
Potassium (K)-Dissolved	0.535		0.050	mg/L	04-NOV-21	04-NOV-21	R5636599
Rubidium (Rb)-Dissolved	0.00133		0.00020	mg/L	04-NOV-21	04-NOV-21	R5636599
Selenium (Se)-Dissolved	0.000083		0.000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Silicon (Si)-Dissolved	2.76		0.050	mg/L	04-NOV-21	04-NOV-21	R5636599
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	04-NOV-21	04-NOV-21	R5636599
Sodium (Na)-Dissolved	3.25		0.050	mg/L	04-NOV-21	04-NOV-21	R5636599
Strontium (Sr)-Dissolved	0.0334		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Sulfur (S)-Dissolved	1.81		0.50	mg/L	04-NOV-21	04-NOV-21	R5636599
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	04-NOV-21	04-NOV-21	R5636599

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657407-2 MATR-02 Sampled By: RD/MG on 28-OCT-21 @ 11:45 Matrix: SW							
Dissolved Metals							
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	04-NOV-21	04-NOV-21	R5636599
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Titanium (Ti)-Dissolved	0.00185		0.00030	mg/L	04-NOV-21	04-NOV-21	R5636599
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Uranium (U)-Dissolved	0.000075		0.000010	mg/L	04-NOV-21	04-NOV-21	R5636599
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	04-NOV-21	04-NOV-21	R5636599
Zinc (Zn)-Dissolved	0.0019		0.0010	mg/L	04-NOV-21	04-NOV-21	R5636599
Zirconium (Zr)-Dissolved	0.00025		0.00020	mg/L	04-NOV-21	04-NOV-21	R5636599
Radiological Parameters							
Ra-226	0.0021		0.0018	Bq/L	18-NOV-21	24-NOV-21	R5659878
L2657407-3 DUP-01 Sampled By: RD/MG on 28-OCT-21 Matrix: SW							
Anions and Nutrients							
Ammonia, Total (as N)	0.018		0.010	mg/L		08-NOV-21	R5637863
Phosphorus (P)-Total	0.0180		0.0010	mg/L		19-NOV-21	R5654469
Total Metals							
Aluminum (Al)-Total	0.218		0.0050	mg/L	01-NOV-21	03-NOV-21	R5634397
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Arsenic (As)-Total	0.00087		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Barium (Ba)-Total	0.00865		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Boron (B)-Total	0.013		0.010	mg/L	01-NOV-21	02-NOV-21	R5634397
Cadmium (Cd)-Total	0.0000134		0.0000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Calcium (Ca)-Total	19.3		0.050	mg/L	01-NOV-21	02-NOV-21	R5634397
Cesium (Cs)-Total	0.000020		0.000010	mg/L	01-NOV-21	02-NOV-21	R5634397
Chromium (Cr)-Total	0.00070		0.00050	mg/L	01-NOV-21	03-NOV-21	R5634397
Cobalt (Co)-Total	0.00017		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Copper (Cu)-Total	0.00156		0.00050	mg/L	01-NOV-21	02-NOV-21	R5634397
Iron (Fe)-Total	0.452		0.010	mg/L	01-NOV-21	02-NOV-21	R5634397
Lead (Pb)-Total	0.000142		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Lithium (Li)-Total	<0.0010		0.0010	mg/L	01-NOV-21	02-NOV-21	R5634397
Magnesium (Mg)-Total	5.03		0.0050	mg/L	01-NOV-21	02-NOV-21	R5634397
Manganese (Mn)-Total	0.0289		0.00050	mg/L	01-NOV-21	02-NOV-21	R5634397
Mercury (Hg)-Total	0.00201		0.00050	ug/L		17-NOV-21	R5652727
Molybdenum (Mo)-Total	0.000131		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Nickel (Ni)-Total	0.00116		0.00050	mg/L	01-NOV-21	02-NOV-21	R5634397
Phosphorus (P)-Total	<0.050		0.050	mg/L	01-NOV-21	02-NOV-21	R5634397
Potassium (K)-Total	0.573		0.050	mg/L	01-NOV-21	02-NOV-21	R5634397
Rubidium (Rb)-Total	0.00153		0.00020	mg/L	01-NOV-21	02-NOV-21	R5634397

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657407-3 DUP-01 Sampled By: RD/MG on 28-OCT-21 Matrix: SW							
Total Metals							
Selenium (Se)-Total	0.000116		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Silicon (Si)-Total	2.95		0.10	mg/L	01-NOV-21	02-NOV-21	R5634397
Silver (Ag)-Total	<0.000050		0.000050	mg/L	01-NOV-21	02-NOV-21	R5634397
Sodium (Na)-Total	3.44		0.050	mg/L	01-NOV-21	02-NOV-21	R5634397
Strontium (Sr)-Total	0.0335		0.0010	mg/L	01-NOV-21	02-NOV-21	R5634397
Sulfur (S)-Total	1.78		0.50	mg/L	01-NOV-21	02-NOV-21	R5634397
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-NOV-21	02-NOV-21	R5634397
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	01-NOV-21	02-NOV-21	R5634397
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Tin (Sn)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Titanium (Ti)-Total	0.00742		0.00030	mg/L	01-NOV-21	02-NOV-21	R5634397
Tungsten (W)-Total	<0.00010		0.00010	mg/L	01-NOV-21	02-NOV-21	R5634397
Uranium (U)-Total	0.000075		0.000010	mg/L	01-NOV-21	02-NOV-21	R5634397
Vanadium (V)-Total	0.00064		0.00050	mg/L	01-NOV-21	02-NOV-21	R5634397
Zinc (Zn)-Total	0.0035		0.0030	mg/L	01-NOV-21	02-NOV-21	R5634397
Zirconium (Zr)-Total	0.00031		0.00020	mg/L	01-NOV-21	02-NOV-21	R5634397
Dissolved Metals							
Dissolved Metals Filtration Location	FIELD					04-NOV-21	R5636376
Aluminum (Al)-Dissolved	0.0666		0.0010	mg/L	04-NOV-21	04-NOV-21	R5636599
Antimony (Sb)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Arsenic (As)-Dissolved	0.00076		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Barium (Ba)-Dissolved	0.00731		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Beryllium (Be)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Bismuth (Bi)-Dissolved	<0.000050		0.000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Boron (B)-Dissolved	0.015		0.010	mg/L	04-NOV-21	04-NOV-21	R5636599
Cadmium (Cd)-Dissolved	0.0000108		0.0000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Calcium (Ca)-Dissolved	19.9		0.050	mg/L	04-NOV-21	04-NOV-21	R5636599
Cesium (Cs)-Dissolved	<0.000010		0.000010	mg/L	04-NOV-21	04-NOV-21	R5636599
Chromium (Cr)-Dissolved	0.00041		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Cobalt (Co)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Copper (Cu)-Dissolved	0.00119		0.00020	mg/L	04-NOV-21	04-NOV-21	R5636599
Iron (Fe)-Dissolved	0.241		0.010	mg/L	04-NOV-21	04-NOV-21	R5636599
Lead (Pb)-Dissolved	0.000061		0.000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Lithium (Li)-Dissolved	<0.0010		0.0010	mg/L	04-NOV-21	04-NOV-21	R5636599
Magnesium (Mg)-Dissolved	5.07		0.0050	mg/L	04-NOV-21	04-NOV-21	R5636599
Manganese (Mn)-Dissolved	0.0163		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Molybdenum (Mo)-Dissolved	0.000132		0.000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Nickel (Ni)-Dissolved	0.00056		0.00050	mg/L	04-NOV-21	04-NOV-21	R5636599
Phosphorus (P)-Dissolved	<0.030		0.030	mg/L	04-NOV-21	04-NOV-21	R5636599
Potassium (K)-Dissolved	0.536		0.050	mg/L	04-NOV-21	04-NOV-21	R5636599
Rubidium (Rb)-Dissolved	0.00136		0.00020	mg/L	04-NOV-21	04-NOV-21	R5636599

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657407-3 DUP-01 Sampled By: RD/MG on 28-OCT-21 Matrix: SW							
Dissolved Metals							
Selenium (Se)-Dissolved	0.000073		0.000050	mg/L	04-NOV-21	04-NOV-21	R5636599
Silicon (Si)-Dissolved	2.73		0.050	mg/L	04-NOV-21	04-NOV-21	R5636599
Silver (Ag)-Dissolved	<0.000010		0.000010	mg/L	04-NOV-21	04-NOV-21	R5636599
Sodium (Na)-Dissolved	3.32		0.050	mg/L	04-NOV-21	04-NOV-21	R5636599
Strontium (Sr)-Dissolved	0.0339		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Sulfur (S)-Dissolved	2.01		0.50	mg/L	04-NOV-21	04-NOV-21	R5636599
Tellurium (Te)-Dissolved	<0.00020		0.00020	mg/L	04-NOV-21	04-NOV-21	R5636599
Thallium (Tl)-Dissolved	<0.000010		0.000010	mg/L	04-NOV-21	04-NOV-21	R5636599
Thorium (Th)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Tin (Sn)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Titanium (Ti)-Dissolved	0.00188		0.00030	mg/L	04-NOV-21	04-NOV-21	R5636599
Tungsten (W)-Dissolved	<0.00010		0.00010	mg/L	04-NOV-21	04-NOV-21	R5636599
Uranium (U)-Dissolved	0.000073		0.000010	mg/L	04-NOV-21	04-NOV-21	R5636599
Vanadium (V)-Dissolved	<0.00050		0.00050	mg/L	04-NOV-21	04-NOV-21	R5636599
Zinc (Zn)-Dissolved	0.0021		0.0010	mg/L	04-NOV-21	04-NOV-21	R5636599
Zirconium (Zr)-Dissolved	0.00028		0.00020	mg/L	04-NOV-21	04-NOV-21	R5636599
Speciated Metals							
Methylmercury (as MeHg)-Total	0.000157		0.000020	ug/L	08-NOV-21	08-NOV-21	R5636098
Radiological Parameters							
Ra-226	0.0022		0.0017	Bq/L	18-NOV-21	24-NOV-21	R5659878
L2657407-4 TRIP BLANK Sampled By: RD/MG on 28-OCT-21 Matrix: SW							
Physical Tests							
Conductivity	1.1		1.0	umhos/cm		01-DEC-21	R5659948
Hardness (as CaCO3)	<0.50	HTC	0.50	mg/L		22-NOV-21	
pH	5.86	PEHT	0.10	pH units		01-DEC-21	R5659948
Total Suspended Solids	<3.0	PEHT	3.0	mg/L	30-NOV-21	01-DEC-21	R5660040
Total Dissolved Solids	<10	PEHT	10	mg/L		30-NOV-21	R5660082
Anions and Nutrients							
Alkalinity, Total (as CaCO3)	<1.0	PEHT	1.0	mg/L		01-DEC-21	R5661148
Ammonia, Total (as N)	<0.010		0.010	mg/L		08-NOV-21	R5637863
Bromide (Br)	<0.10	PEHT	0.10	mg/L		29-NOV-21	R5659846
Chloride (Cl)	<0.50	PEHT	0.50	mg/L		29-NOV-21	R5659846
Fluoride (F)	<0.020	PEHT	0.020	mg/L		29-NOV-21	R5659846
Nitrate (as N)	<0.020	PEHT	0.020	mg/L		29-NOV-21	R5659846
Nitrite (as N)	<0.010	PEHT	0.010	mg/L		29-NOV-21	R5659846
Phosphorus (P)-Total	0.0017		0.0010	mg/L		19-NOV-21	R5654469
Sulfate (SO4)	<0.30	PEHT	0.30	mg/L		29-NOV-21	R5659846
Cyanides							
Cyanide, Weak Acid Diss	<0.0020		0.0020	mg/L		05-NOV-21	R5636584
Cyanide, Total	<0.0020		0.0020	mg/L		05-NOV-21	R5636584

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657407-4 TRIP BLANK Sampled By: RD/MG on 28-OCT-21 Matrix: SW							
Cyanides							
Cyanide, Free	<0.0020		0.0020	mg/L		05-NOV-21	R5636584
Inorganic Parameters							
Acidity (as CaCO3)	2.3	PEHT	2.0	mg/L		01-DEC-21	R5661523
Total Metals							
Aluminum (Al)-Total	<0.0050		0.0050	mg/L	01-NOV-21	01-NOV-21	R5633771
Antimony (Sb)-Total	<0.00010		0.00010	mg/L	01-NOV-21	01-NOV-21	R5633771
Arsenic (As)-Total	<0.00010		0.00010	mg/L	01-NOV-21	01-NOV-21	R5633771
Barium (Ba)-Total	<0.00010		0.00010	mg/L	01-NOV-21	01-NOV-21	R5633771
Beryllium (Be)-Total	<0.00010		0.00010	mg/L	01-NOV-21	01-NOV-21	R5633771
Bismuth (Bi)-Total	<0.000050		0.000050	mg/L	01-NOV-21	01-NOV-21	R5633771
Boron (B)-Total	<0.010		0.010	mg/L	01-NOV-21	01-NOV-21	R5633771
Cadmium (Cd)-Total	<0.0000050		0.0000050	mg/L	01-NOV-21	01-NOV-21	R5633771
Calcium (Ca)-Total	<0.050		0.050	mg/L	01-NOV-21	01-NOV-21	R5633771
Cesium (Cs)-Total	<0.000010		0.000010	mg/L	01-NOV-21	01-NOV-21	R5633771
Chromium (Cr)-Total	<0.00050		0.00050	mg/L	01-NOV-21	01-NOV-21	R5633771
Cobalt (Co)-Total	<0.00010		0.00010	mg/L	01-NOV-21	01-NOV-21	R5633771
Copper (Cu)-Total	<0.00050		0.00050	mg/L	01-NOV-21	01-NOV-21	R5633771
Iron (Fe)-Total	<0.010		0.010	mg/L	01-NOV-21	01-NOV-21	R5633771
Lead (Pb)-Total	<0.000050		0.000050	mg/L	01-NOV-21	01-NOV-21	R5633771
Lithium (Li)-Total	<0.0010		0.0010	mg/L	01-NOV-21	01-NOV-21	R5633771
Magnesium (Mg)-Total	0.0060		0.0050	mg/L	01-NOV-21	01-NOV-21	R5633771
Manganese (Mn)-Total	<0.00050		0.00050	mg/L	01-NOV-21	01-NOV-21	R5633771
Mercury (Hg)-Total	<0.00050		0.00050	ug/L		17-NOV-21	R5652727
Molybdenum (Mo)-Total	<0.000050		0.000050	mg/L	01-NOV-21	01-NOV-21	R5633771
Nickel (Ni)-Total	<0.00050		0.00050	mg/L	01-NOV-21	01-NOV-21	R5633771
Phosphorus (P)-Total	<0.050		0.050	mg/L	01-NOV-21	01-NOV-21	R5633771
Potassium (K)-Total	<0.050		0.050	mg/L	01-NOV-21	01-NOV-21	R5633771
Rubidium (Rb)-Total	<0.00020		0.00020	mg/L	01-NOV-21	01-NOV-21	R5633771
Selenium (Se)-Total	<0.000050		0.000050	mg/L	01-NOV-21	01-NOV-21	R5633771
Silicon (Si)-Total	<0.10		0.10	mg/L	01-NOV-21	01-NOV-21	R5633771
Silver (Ag)-Total	<0.000050		0.000050	mg/L	01-NOV-21	01-NOV-21	R5633771
Sodium (Na)-Total	<0.050		0.050	mg/L	01-NOV-21	01-NOV-21	R5633771
Strontium (Sr)-Total	<0.0010		0.0010	mg/L	01-NOV-21	01-NOV-21	R5633771
Sulfur (S)-Total	<0.50		0.50	mg/L	01-NOV-21	01-NOV-21	R5633771
Tellurium (Te)-Total	<0.00020		0.00020	mg/L	01-NOV-21	01-NOV-21	R5633771
Thallium (Tl)-Total	<0.000010		0.000010	mg/L	01-NOV-21	01-NOV-21	R5633771
Thorium (Th)-Total	<0.00010		0.00010	mg/L	01-NOV-21	01-NOV-21	R5633771
Tin (Sn)-Total	<0.00010		0.00010	mg/L	01-NOV-21	01-NOV-21	R5633771
Titanium (Ti)-Total	<0.00030		0.00030	mg/L	01-NOV-21	01-NOV-21	R5633771
Tungsten (W)-Total	<0.00010		0.00010	mg/L	01-NOV-21	01-NOV-21	R5633771
Uranium (U)-Total	<0.000010		0.000010	mg/L	01-NOV-21	01-NOV-21	R5633771

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2657407-4 TRIP BLANK Sampled By: RD/MG on 28-OCT-21 Matrix: SW							
Total Metals							
Vanadium (V)-Total	<0.00050		0.00050	mg/L	01-NOV-21	01-NOV-21	R5633771
Zinc (Zn)-Total	<0.0030		0.0030	mg/L	01-NOV-21	01-NOV-21	R5633771
Zirconium (Zr)-Total	<0.00020		0.00020	mg/L	01-NOV-21	01-NOV-21	R5633771
Speciated Metals							
Methylmercury (as MeHg)-Total	<0.000020		0.000020	ug/L	08-NOV-21	08-NOV-21	R5636098

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

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Method Blank	Sodium (Na)-Total	B	L2657407-4
Duplicate	Total Suspended Solids	DUP-H	L2657407-1, -2
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L2657407-1, -2, -3
Matrix Spike	Magnesium (Mg)-Dissolved	MS-B	L2657407-1, -2, -3
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L2657407-1, -2, -3
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L2657407-1, -2, -3
Matrix Spike	Aluminum (Al)-Total	MS-B	L2657407-2, -3
Matrix Spike	Aluminum (Al)-Total	MS-B	L2657407-1
Matrix Spike	Barium (Ba)-Total	MS-B	L2657407-4
Matrix Spike	Barium (Ba)-Total	MS-B	L2657407-1
Matrix Spike	Boron (B)-Total	MS-B	L2657407-4
Matrix Spike	Calcium (Ca)-Total	MS-B	L2657407-4
Matrix Spike	Calcium (Ca)-Total	MS-B	L2657407-2, -3
Matrix Spike	Calcium (Ca)-Total	MS-B	L2657407-1
Matrix Spike	Copper (Cu)-Total	MS-B	L2657407-1
Matrix Spike	Iron (Fe)-Total	MS-B	L2657407-2, -3
Matrix Spike	Iron (Fe)-Total	MS-B	L2657407-1
Matrix Spike	Lithium (Li)-Total	MS-B	L2657407-4
Matrix Spike	Magnesium (Mg)-Total	MS-B	L2657407-4
Matrix Spike	Magnesium (Mg)-Total	MS-B	L2657407-2, -3
Matrix Spike	Magnesium (Mg)-Total	MS-B	L2657407-1
Matrix Spike	Manganese (Mn)-Total	MS-B	L2657407-4
Matrix Spike	Manganese (Mn)-Total	MS-B	L2657407-2, -3
Matrix Spike	Manganese (Mn)-Total	MS-B	L2657407-1
Matrix Spike	Phosphorus (P)-Total	MS-B	L2657407-1
Matrix Spike	Potassium (K)-Total	MS-B	L2657407-4
Matrix Spike	Potassium (K)-Total	MS-B	L2657407-1
Matrix Spike	Rubidium (Rb)-Total	MS-B	L2657407-4
Matrix Spike	Rubidium (Rb)-Total	MS-B	L2657407-1
Matrix Spike	Silicon (Si)-Total	MS-B	L2657407-4
Matrix Spike	Silicon (Si)-Total	MS-B	L2657407-2, -3
Matrix Spike	Silicon (Si)-Total	MS-B	L2657407-1
Matrix Spike	Sodium (Na)-Total	MS-B	L2657407-4
Matrix Spike	Sodium (Na)-Total	MS-B	L2657407-2, -3
Matrix Spike	Sodium (Na)-Total	MS-B	L2657407-1
Matrix Spike	Strontium (Sr)-Total	MS-B	L2657407-4
Matrix Spike	Strontium (Sr)-Total	MS-B	L2657407-2, -3
Matrix Spike	Strontium (Sr)-Total	MS-B	L2657407-1
Matrix Spike	Sulfur (S)-Total	MS-B	L2657407-4
Matrix Spike	Sulfur (S)-Total	MS-B	L2657407-1
Matrix Spike	Uranium (U)-Total	MS-B	L2657407-4
Matrix Spike	Zinc (Zn)-Total	MS-B	L2657407-1
Matrix Spike	Nitrate (as N)	MS-B	L2657407-1, -2

Sample Parameter Qualifier key listed:

Qualifier	Description
B	Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.
HTC	Hardness was calculated from Total Ca and/or Mg concentrations and may be biased high (dissolved Ca/Mg results unavailable).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
PEHT	Parameter Exceeded Recommended Holding Time Prior to Analysis
RRR	Refer to Report Remarks for issues regarding this analysis

Test Method References:

Reference Information

ALS Test Code	Matrix	Test Description	Method Reference**
ACIDITY-WT	Water	Acidity (as CaCO3)	APHA 2310 B - Potentiometric Titration
ALK-WT	Water	Alkalinity, Total (as CaCO3)	APHA 2320B

This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint.

BR-IC-N-WT	Water	Bromide in Water by IC	EPA 300.1 (mod)

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

CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)

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

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-FREE-CFA-WT	Water	Free Cyanide in water by CFA	ASTM 7237

This analysis is carried out using procedures adapted from ASTM Method 7237 "Free Cyanide with Flow Injection Analysis (FIA) Utilizing Gas Diffusion Separation and Amperometric Detection". Free cyanide is determined by in-line gas diffusion at pH 6 with final determination by colourimetric analysis.

CN-TOT-WT	Water	Cyanide, Total	ISO 14403-2

Total cyanide is determined by the combination of UV digestion and distillation. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

When using this method, high levels of thiocyanate in samples can cause false positives at ~1-2% of the thiocyanate concentration. For samples with detectable cyanide analyzed by this method, ALS recommends analysis for thiocyanate to check for this potential interference

CN-WAD-WT	Water	Cyanide, Weak Acid Diss	APHA 4500CN I-Weak acid Dist Colorimet

Weak acid dissociable cyanide (WAD) is determined by undergoing a distillation procedure. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

EC-SCREEN-WT	Water	Conductivity Screen (Internal Use Only)	APHA 2510

Qualitative analysis of conductivity where required during preparation of other tests - e.g. TDS, metals, etc.

EC-WT	Water	Conductivity	APHA 2510 B

Water samples can be measured directly by immersing the conductivity cell into the sample.

F-IC-N-WT	Water	Fluoride in Water by IC	EPA 300.1 (mod)

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

HARDNESS-CALC-WT	Water	Hardness	APHA 2340 B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-T-U-CVAF-VA	Water	Total Mercury in Water by CVAFS (Ultra)	EPA 1631 REV. E

This analysis is carried out using procedures adapted from Method 1631 Rev. E. by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to a purge and trap concentration step and final reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry.

MEHG-T-GCAF-VA	Water	Total Methylmercury in Water by GCAFS	EPA 1630 (mod)

This method follows Method 1630 of the US EPA. Samples are distilled under an inert gas flow to isolate methylmercury and minimize matrix interferences. The distillate is analyzed by aqueous phase ethylation, purge and trap, desorption and GC separation. The separated species are then pyrolized to elemental Hg and quantified by cold vapour atomic flourescence spectroscopy. Results are reported "as MeHg".

MET-D-CCMS-WP	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020B (mod)

Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

Reference Information

MET-T-CCMS-WT	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F

Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.

NO2-IC-WT	Water	Nitrite in Water by IC	EPA 300.1 (mod)

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

NO3-IC-WT	Water	Nitrate in Water by IC	EPA 300.1 (mod)

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

P-T-L-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS-L

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.

PH-WT	Water	pH	APHA 4500 H-Electrode

Water samples are analyzed directly by a calibrated pH meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days

RA226-ALPHASPEC-FC	Water	Ra226 by Alpha Spec, MDC=0.01 Bq/L	EPA 903.1
SO4-IC-N-WT	Water	Sulfate in Water by IC	EPA 300.1 (mod)

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

SOLIDS-TDS-WT	Water	Total Dissolved Solids	APHA 2540C

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

SOLIDS-TSS-WT	Water	Suspended solids	APHA 2540 D-Gravimetric

A well-mixed sample is filtered through a weighed standard glass fibre filter and the residue retained is dried in an oven at 104–1°C for a minimum of four hours or until a constant weight is achieved.

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

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

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
FC	ALS ENVIRONMENTAL - FORT COLLINS, COLORADO, USA
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

Reference Information

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.
mg/kg - milligrams per kilogram based on dry weight of sample
mg/kg wwt - milligrams per kilogram based on wet weight of sample
mg/kg lwt - milligrams per kilogram based on lipid weight of sample
mg/L - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2657407 Report Date: 14-DEC-21

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ACIDITY-WT	**Water**							
Batch R5634874								
WG3648666-3 DUP		**L2657480-2**						
Acidity (as CaCO3)		8.2	8.1		mg/L	1.7	20	02-NOV-21
WG3648666-2 LCS								
Acidity (as CaCO3)			114.2		%		85-115	02-NOV-21
WG3648666-1 MB								
Acidity (as CaCO3)			<2.0		mg/L		2	02-NOV-21
Batch R5661523								
WG3667960-3 DUP		**L2666865-3**						
WG3667960-2 LCS								
Acidity (as CaCO3)			107.9		%		85-115	01-DEC-21
WG3667960-1 MB								
Acidity (as CaCO3)			<2.0		mg/L		3	01-DEC-21
ALK-WT	**Water**							
Batch R5634430								
WG3650445-4 DUP		**WG3650445-3**						
Alkalinity, Total (as CaCO3)		255	257		mg/L	0.7	20	02-NOV-21
WG3650445-2 LCS								
Alkalinity, Total (as CaCO3)			108.8		%		85-115	02-NOV-21
WG3650445-1 MB								
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	02-NOV-21
Batch R5659948								
WG3668028-2 LCS								
Alkalinity, Total (as CaCO3)			104.9		%		85-115	01-DEC-21
WG3668028-1 MB								
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	01-DEC-21
Batch R5661148								
WG3668319-4 DUP		**WG3668319-3**						
Alkalinity, Total (as CaCO3)		140	141		mg/L	0.5	20	01-DEC-21
WG3668319-2 LCS								
Alkalinity, Total (as CaCO3)			95.9		%		85-115	01-DEC-21
WG3668319-1 MB								
Alkalinity, Total (as CaCO3)			<2.0		mg/L		2	01-DEC-21
BR-IC-N-WT	**Water**							
Batch R5635989								
WG3651635-4 DUP		**WG3651635-3**						
Bromide (Br)		<0.10	<0.10	RPD-NA	mg/L	N/A	20	03-NOV-21
WG3651635-2 LCS								

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BR-IC-N-WT	**Water**							
Batch R5635989								
WG3651635-2 LCS								
Bromide (Br)			98.6		%		85-115	03-NOV-21
WG3651635-1 MB								
Bromide (Br)			<0.10		mg/L		0.1	03-NOV-21
WG3651635-5 MS		**WG3651635-3**						
Bromide (Br)			99.98		%		75-125	03-NOV-21
Batch R5659846								
WG3667607-20 DUP		**WG3667607-18**						
Bromide (Br)		<0.10	<0.10	RPD-NA	mg/L	N/A	20	29-NOV-21
WG3667607-17 LCS								
Bromide (Br)			99.7		%		85-115	29-NOV-21
WG3667607-16 MB								
Bromide (Br)			<0.10		mg/L		0.1	29-NOV-21
WG3667607-19 MS		**WG3667607-18**						
Bromide (Br)			96.3		%		75-125	29-NOV-21
CL-IC-N-WT	**Water**							
Batch R5635989								
WG3651635-4 DUP		**WG3651635-3**						
Chloride (Cl)		21.8	21.8		mg/L	0.0	20	03-NOV-21
WG3651635-2 LCS								
Chloride (Cl)			98.1		%		90-110	03-NOV-21
WG3651635-1 MB								
Chloride (Cl)			<0.50		mg/L		0.5	03-NOV-21
WG3651635-5 MS		**WG3651635-3**						
Chloride (Cl)			105.7		%		75-125	03-NOV-21
Batch R5659846								
WG3667607-20 DUP		**WG3667607-18**						
Chloride (Cl)		4.27	4.24		mg/L	0.7	20	29-NOV-21
WG3667607-17 LCS								
Chloride (Cl)			100.0		%		90-110	29-NOV-21
WG3667607-16 MB								
Chloride (Cl)			<0.50		mg/L		0.5	29-NOV-21
WG3667607-19 MS		**WG3667607-18**						
Chloride (Cl)			100.6		%		75-125	29-NOV-21
CN-FREE-CFA-WT	**Water**							

Quality Control Report

Workorder: L2657407 Report Date: 14-DEC-21

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-FREE-CFA-WT	**Water**							
Batch R5635096								
WG3651039-15 DUP		**WG3651039-17**						
Cyanide, Free		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	02-NOV-21
WG3651039-14 LCS								
Cyanide, Free			103.7		%		80-120	02-NOV-21
WG3651039-13 MB								
Cyanide, Free			<0.0020		mg/L		0.002	02-NOV-21
WG3651039-16 MS		**WG3651039-17**						
Cyanide, Free			104.8		%		75-125	02-NOV-21
Batch R5636584								
WG3652967-3 DUP		**WG3652967-5**						
Cyanide, Free		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	05-NOV-21
WG3652967-2 LCS								
Cyanide, Free			99.5		%		80-120	05-NOV-21
WG3652967-1 MB								
Cyanide, Free			<0.0020		mg/L		0.002	05-NOV-21
WG3652967-4 MS		**WG3652967-5**						
Cyanide, Free			101.9		%		75-125	05-NOV-21
CN-TOT-WT	**Water**							
Batch R5635096								
WG3651039-15 DUP		**WG3651039-17**						
Cyanide, Total		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	02-NOV-21
WG3651039-14 LCS								
Cyanide, Total			96.0		%		80-120	02-NOV-21
WG3651039-13 MB								
Cyanide, Total			<0.0020		mg/L		0.002	02-NOV-21
WG3651039-16 MS		**WG3651039-17**						
Cyanide, Total			94.7		%		70-130	02-NOV-21
Batch R5636584								
WG3652967-3 DUP		**WG3652967-5**						
Cyanide, Total		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	05-NOV-21
WG3652967-2 LCS								
Cyanide, Total			97.3		%		80-120	05-NOV-21
WG3652967-1 MB								
Cyanide, Total			<0.0020		mg/L		0.002	05-NOV-21
WG3652967-4 MS		**WG3652967-5**						
Cyanide, Total			90.4		%		70-130	05-NOV-21
CN-WAD-WT	**Water**							

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-WAD-WT	**Water**							
Batch R5635096								
WG3651039-15 DUP		**WG3651039-17**						
Cyanide, Weak Acid Diss		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	02-NOV-21
WG3651039-14 LCS								
Cyanide, Weak Acid Diss			101.6		%		80-120	02-NOV-21
WG3651039-13 MB								
Cyanide, Weak Acid Diss			<0.0020		mg/L		0.002	02-NOV-21
WG3651039-16 MS		**WG3651039-17**						
Cyanide, Weak Acid Diss			106.1		%		75-125	02-NOV-21
Batch R5636584								
WG3652967-3 DUP		**WG3652967-5**						
Cyanide, Weak Acid Diss		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	05-NOV-21
WG3652967-2 LCS								
Cyanide, Weak Acid Diss			104.3		%		80-120	05-NOV-21
WG3652967-1 MB								
Cyanide, Weak Acid Diss			<0.0020		mg/L		0.002	05-NOV-21
WG3652967-4 MS		**WG3652967-5**						
Cyanide, Weak Acid Diss			104.5		%		75-125	05-NOV-21
EC-WT	**Water**							
Batch R5634430								
WG3650445-4 DUP		**WG3650445-3**						
Conductivity		1300	1300		umhos/cm	0.4	10	02-NOV-21
WG3650445-2 LCS								
Conductivity			96.2		%		90-110	02-NOV-21
WG3650445-1 MB								
Conductivity			<1.0		umhos/cm		1	02-NOV-21
Batch R5659948								
WG3668028-4 DUP		**WG3668028-3**						
Conductivity		650	650		umhos/cm	0.0	10	01-DEC-21
WG3668028-2 LCS								
Conductivity			100.8		%		90-110	01-DEC-21
WG3668028-1 MB								
Conductivity			<1.0		umhos/cm		1	01-DEC-21
F-IC-N-WT	**Water**							
Batch R5635989								
WG3651635-4 DUP		**WG3651635-3**						
Fluoride (F)		0.181	0.180		mg/L	0.3	20	03-NOV-21
WG3651635-2 LCS								

Quality Control Report

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Mississauga ON L4Z 3K7
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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
F-IC-N-WT	**Water**							
Batch R5635989								
WG3651635-2 LCS								
Fluoride (F)			100.3		%		90-110	03-NOV-21
WG3651635-1 MB								
Fluoride (F)			<0.020		mg/L		0.02	03-NOV-21
WG3651635-5 MS		**WG3651635-3**						
Fluoride (F)			100.6		%		75-125	03-NOV-21
Batch R5659846								
WG3667607-20 DUP		**WG3667607-18**						
Fluoride (F)		0.233	0.233		mg/L	0.1	20	29-NOV-21
WG3667607-17 LCS								
Fluoride (F)			101.7		%		90-110	29-NOV-21
WG3667607-16 MB								
Fluoride (F)			<0.020		mg/L		0.02	29-NOV-21
WG3667607-19 MS		**WG3667607-18**						
Fluoride (F)			97.0		%		75-125	29-NOV-21
HG-T-U-CVAF-VA	**Water**							
Batch R5652727								
WG3660510-3 DUP		**L2655497-6**						
Mercury (Hg)-Total		0.00076	0.00075	RPD-NA	ug/L	N/A	20	17-NOV-21
WG3660510-2 LCS								
Mercury (Hg)-Total			111.9		%		80-120	17-NOV-21
WG3660510-1 MB								
Mercury (Hg)-Total			<0.00050		ug/L		0.0005	17-NOV-21
WG3660510-4 MS		**L2657480-4**						
Mercury (Hg)-Total			96.5		%		70-130	17-NOV-21
MEHG-T-GCAF-VA	**Water**							
Batch R5636098								
WG3655240-2 DUP		**L2657407-1**						
Methylmercury (as MeHg)-Total		0.000148	0.000152		ug/L	2.4	20	08-NOV-21
WG3655240-5 DUP		**L2658418-7**						
Methylmercury (as MeHg)-Total		0.000048	0.000049		ug/L	1.8	20	08-NOV-21
WG3655240-3 LCS								
Methylmercury (as MeHg)-Total			93.2		%		70-130	08-NOV-21
WG3655240-1 MB								
Methylmercury (as MeHg)-Total			<0.000020		ug/L		0.00002	08-NOV-21
WG3655240-4 MS		**L2658418-7**						
Methylmercury (as MeHg)-Total			88.0		%		70-130	08-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5636599								
WG3652107-4 DUP		**WG3652107-3**						
Aluminum (Al)-Dissolved		0.0681	0.0676		mg/L	0.7	20	04-NOV-21
Antimony (Sb)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	04-NOV-21
Arsenic (As)-Dissolved		0.00076	0.00075		mg/L	2.3	20	04-NOV-21
Barium (Ba)-Dissolved		0.00720	0.00723		mg/L	0.5	20	04-NOV-21
Beryllium (Be)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	04-NOV-21
Bismuth (Bi)-Dissolved		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	04-NOV-21
Boron (B)-Dissolved		0.014	0.014		mg/L	0.8	20	04-NOV-21
Cadmium (Cd)-Dissolved		0.0000131	0.0000069	J	mg/L	0.0000062	0.00001	04-NOV-21
Calcium (Ca)-Dissolved		19.4	19.1		mg/L	1.7	20	04-NOV-21
Cesium (Cs)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	04-NOV-21
Chromium (Cr)-Dissolved		0.00037	0.00037		mg/L	2.3	20	04-NOV-21
Cobalt (Co)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	04-NOV-21
Copper (Cu)-Dissolved		0.00120	0.00143		mg/L	18	20	04-NOV-21
Iron (Fe)-Dissolved		0.235	0.235		mg/L	0.2	20	04-NOV-21
Lead (Pb)-Dissolved		0.000058	0.000058		mg/L	0.4	20	04-NOV-21
Lithium (Li)-Dissolved		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	04-NOV-21
Magnesium (Mg)-Dissolved		4.90	4.92		mg/L	0.5	20	04-NOV-21
Manganese (Mn)-Dissolved		0.0180	0.0178		mg/L	0.9	20	04-NOV-21
Molybdenum (Mo)-Dissolved		0.000118	0.000121		mg/L	2.5	20	04-NOV-21
Nickel (Ni)-Dissolved		0.00055	0.00056		mg/L	2.3	20	04-NOV-21
Phosphorus (P)-Dissolved		<0.030	<0.030	RPD-NA	mg/L	N/A	20	04-NOV-21
Potassium (K)-Dissolved		0.513	0.520		mg/L	1.4	20	04-NOV-21
Rubidium (Rb)-Dissolved		0.00123	0.00127		mg/L	3.2	20	04-NOV-21
Selenium (Se)-Dissolved		0.000109	0.000158	J	mg/L	0.000049	0.0001	04-NOV-21
Silicon (Si)-Dissolved		2.71	2.69		mg/L	0.7	20	04-NOV-21
Silver (Ag)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	04-NOV-21
Sodium (Na)-Dissolved		3.24	3.30		mg/L	1.6	20	04-NOV-21
Strontium (Sr)-Dissolved		0.0332	0.0333		mg/L	0.3	20	04-NOV-21
Sulfur (S)-Dissolved		1.87	1.72		mg/L	8.2	20	04-NOV-21
Tellurium (Te)-Dissolved		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	04-NOV-21
Thallium (Tl)-Dissolved		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	04-NOV-21
Thorium (Th)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	04-NOV-21
Tin (Sn)-Dissolved		<0.00010	<0.00010		mg/L			04-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5636599								
WG3652107-4 DUP		**WG3652107-3**						
Tin (Sn)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	04-NOV-21
Titanium (Ti)-Dissolved		0.00207	0.00203		mg/L	1.6	20	04-NOV-21
Tungsten (W)-Dissolved		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	04-NOV-21
Uranium (U)-Dissolved		0.000069	0.000069		mg/L	0.0	20	04-NOV-21
Vanadium (V)-Dissolved		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	04-NOV-21
Zinc (Zn)-Dissolved		0.0021	0.0023		mg/L	9.6	20	04-NOV-21
Zirconium (Zr)-Dissolved		0.00025	0.00027		mg/L	4.5	20	04-NOV-21
WG3652107-2 LCS								
Aluminum (Al)-Dissolved			101.2		%		80-120	04-NOV-21
Antimony (Sb)-Dissolved			96.3		%		80-120	04-NOV-21
Arsenic (As)-Dissolved			102.1		%		80-120	04-NOV-21
Barium (Ba)-Dissolved			99.2		%		80-120	04-NOV-21
Beryllium (Be)-Dissolved			93.3		%		80-120	04-NOV-21
Bismuth (Bi)-Dissolved			95.9		%		80-120	04-NOV-21
Boron (B)-Dissolved			91.7		%		80-120	04-NOV-21
Cadmium (Cd)-Dissolved			101.0		%		80-120	04-NOV-21
Calcium (Ca)-Dissolved			99.8		%		80-120	04-NOV-21
Cesium (Cs)-Dissolved			95.5		%		80-120	04-NOV-21
Chromium (Cr)-Dissolved			101.1		%		80-120	04-NOV-21
Cobalt (Co)-Dissolved			101.0		%		80-120	04-NOV-21
Copper (Cu)-Dissolved			102.4		%		80-120	04-NOV-21
Iron (Fe)-Dissolved			95.6		%		80-120	04-NOV-21
Lead (Pb)-Dissolved			98.3		%		80-120	04-NOV-21
Lithium (Li)-Dissolved			94.9		%		80-120	04-NOV-21
Magnesium (Mg)-Dissolved			110.1		%		80-120	04-NOV-21
Manganese (Mn)-Dissolved			99.9		%		80-120	04-NOV-21
Molybdenum (Mo)-Dissolved			100.1		%		80-120	04-NOV-21
Nickel (Ni)-Dissolved			100.7		%		80-120	04-NOV-21
Phosphorus (P)-Dissolved			99.8		%		80-120	04-NOV-21
Potassium (K)-Dissolved			93.6		%		80-120	04-NOV-21
Rubidium (Rb)-Dissolved			100.4		%		80-120	04-NOV-21
Selenium (Se)-Dissolved			101.7		%		80-120	04-NOV-21
Silicon (Si)-Dissolved			99.2		%		80-120	04-NOV-21

Quality Control Report

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Mississauga ON L4Z 3K7
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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5636599								
WG3652107-2 LCS								
Silver (Ag)-Dissolved			91.4		%		80-120	04-NOV-21
Sodium (Na)-Dissolved			98.3		%		80-120	04-NOV-21
Strontium (Sr)-Dissolved			95.8		%		80-120	04-NOV-21
Sulfur (S)-Dissolved			107.2		%		80-120	04-NOV-21
Tellurium (Te)-Dissolved			93.9		%		80-120	04-NOV-21
Thallium (Tl)-Dissolved			100.3		%		80-120	04-NOV-21
Thorium (Th)-Dissolved			93.5		%		80-120	04-NOV-21
Tin (Sn)-Dissolved			94.9		%		80-120	04-NOV-21
Titanium (Ti)-Dissolved			98.1		%		80-120	04-NOV-21
Tungsten (W)-Dissolved			100.1		%		80-120	04-NOV-21
Uranium (U)-Dissolved			98.7		%		80-120	04-NOV-21
Vanadium (V)-Dissolved			100.9		%		80-120	04-NOV-21
Zinc (Zn)-Dissolved			103.2		%		80-120	04-NOV-21
Zirconium (Zr)-Dissolved			89.9		%		80-120	04-NOV-21
WG3652107-1 MB								
Aluminum (Al)-Dissolved			<0.0010		mg/L		0.001	04-NOV-21
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	04-NOV-21
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	04-NOV-21
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	04-NOV-21
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	04-NOV-21
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	04-NOV-21
Boron (B)-Dissolved			<0.010		mg/L		0.01	04-NOV-21
Cadmium (Cd)-Dissolved			<0.000005(		mg/L		0.000005	04-NOV-21
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	04-NOV-21
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	04-NOV-21
Chromium (Cr)-Dissolved			<0.00010		mg/L		0.0001	04-NOV-21
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	04-NOV-21
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	04-NOV-21
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	04-NOV-21
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	04-NOV-21
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	04-NOV-21
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	04-NOV-21
Manganese (Mn)-Dissolved			<0.00010		mg/L		0.0001	04-NOV-21
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	04-NOV-21

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5636599								
WG3652107-1 MB								
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	04-NOV-21
Phosphorus (P)-Dissolved			<0.030		mg/L		0.03	04-NOV-21
Potassium (K)-Dissolved			<0.050		mg/L		0.05	04-NOV-21
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	04-NOV-21
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	04-NOV-21
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	04-NOV-21
Silver (Ag)-Dissolved			<0.000010		mg/L		0.00001	04-NOV-21
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	04-NOV-21
Strontium (Sr)-Dissolved			<0.00010		mg/L		0.0001	04-NOV-21
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	04-NOV-21
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	04-NOV-21
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	04-NOV-21
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	04-NOV-21
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	04-NOV-21
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	04-NOV-21
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	04-NOV-21
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	04-NOV-21
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	04-NOV-21
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	04-NOV-21
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	04-NOV-21
WG3652107-5 MS		**WG3652107-3**						
Aluminum (Al)-Dissolved			92.6		%		70-130	04-NOV-21
Antimony (Sb)-Dissolved			94.3		%		70-130	04-NOV-21
Arsenic (As)-Dissolved			94.8		%		70-130	04-NOV-21
Barium (Ba)-Dissolved			93.2		%		70-130	04-NOV-21
Beryllium (Be)-Dissolved			91.1		%		70-130	04-NOV-21
Bismuth (Bi)-Dissolved			88.5		%		70-130	04-NOV-21
Boron (B)-Dissolved			91.7		%		70-130	04-NOV-21
Cadmium (Cd)-Dissolved			94.0		%		70-130	04-NOV-21
Calcium (Ca)-Dissolved			N/A	MS-B	%		-	04-NOV-21
Cesium (Cs)-Dissolved			90.1		%		70-130	04-NOV-21
Chromium (Cr)-Dissolved			94.1		%		70-130	04-NOV-21
Cobalt (Co)-Dissolved			92.5		%		70-130	04-NOV-21
Copper (Cu)-Dissolved			92.9		%		70-130	04-NOV-21

Quality Control Report

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WP	**Water**							
Batch R5636599								
WG3652107-5 MS		**WG3652107-3**						
Iron (Fe)-Dissolved			93.3		%		70-130	04-NOV-21
Lead (Pb)-Dissolved			92.0		%		70-130	04-NOV-21
Lithium (Li)-Dissolved			98.3		%		70-130	04-NOV-21
Magnesium (Mg)-Dissolved			N/A	MS-B	%		-	04-NOV-21
Manganese (Mn)-Dissolved			91.1		%		70-130	04-NOV-21
Molybdenum (Mo)-Dissolved			94.4		%		70-130	04-NOV-21
Nickel (Ni)-Dissolved			94.7		%		70-130	04-NOV-21
Phosphorus (P)-Dissolved			96.3		%		70-130	04-NOV-21
Potassium (K)-Dissolved			95.9		%		70-130	04-NOV-21
Rubidium (Rb)-Dissolved			93.1		%		70-130	04-NOV-21
Selenium (Se)-Dissolved			97.9		%		70-130	04-NOV-21
Silicon (Si)-Dissolved			94.0		%		70-130	04-NOV-21
Silver (Ag)-Dissolved			93.8		%		70-130	04-NOV-21
Sodium (Na)-Dissolved			N/A	MS-B	%		-	04-NOV-21
Strontium (Sr)-Dissolved			N/A	MS-B	%		-	04-NOV-21
Sulfur (S)-Dissolved			92.9		%		70-130	04-NOV-21
Tellurium (Te)-Dissolved			91.6		%		70-130	04-NOV-21
Thallium (Tl)-Dissolved			91.8		%		70-130	04-NOV-21
Thorium (Th)-Dissolved			91.6		%		70-130	04-NOV-21
Tin (Sn)-Dissolved			92.1		%		70-130	04-NOV-21
Titanium (Ti)-Dissolved			93.0		%		70-130	04-NOV-21
Tungsten (W)-Dissolved			95.1		%		70-130	04-NOV-21
Uranium (U)-Dissolved			90.6		%		70-130	04-NOV-21
Vanadium (V)-Dissolved			95.2		%		70-130	04-NOV-21
Zinc (Zn)-Dissolved			96.9		%		70-130	04-NOV-21
Zirconium (Zr)-Dissolved			97.8		%		70-130	04-NOV-21
MET-T-CCMS-WT	**Water**							
Batch R5633771								
WG3649449-4 DUP		**WG3649449-3**						
Aluminum (Al)-Total		<0.050	<0.050	RPD-NA	mg/L	N/A	20	01-NOV-21
Antimony (Sb)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	01-NOV-21
Arsenic (As)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	01-NOV-21
Barium (Ba)-Total		0.0523	0.0540		mg/L	3.2	20	01-NOV-21

Quality Control Report

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Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5633771								
WG3649449-4 DUP		**WG3649449-3**						
Beryllium (Be)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	01-NOV-21
Bismuth (Bi)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	01-NOV-21
Boron (B)-Total		0.30	0.27		mg/L	12	20	01-NOV-21
Cadmium (Cd)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	01-NOV-21
Calcium (Ca)-Total		382	365		mg/L	4.3	20	01-NOV-21
Chromium (Cr)-Total		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	01-NOV-21
Cesium (Cs)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	01-NOV-21
Cobalt (Co)-Total		0.0017	0.0017		mg/L	0.3	20	01-NOV-21
Copper (Cu)-Total		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	01-NOV-21
Iron (Fe)-Total		<0.10	<0.10	RPD-NA	mg/L	N/A	20	01-NOV-21
Lead (Pb)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	01-NOV-21
Lithium (Li)-Total		0.138	0.127		mg/L	8.1	20	01-NOV-21
Magnesium (Mg)-Total		592	594		mg/L	0.3	20	01-NOV-21
Manganese (Mn)-Total		0.275	0.274		mg/L	0.5	20	01-NOV-21
Molybdenum (Mo)-Total		0.00663	0.00693		mg/L	4.4	20	01-NOV-21
Nickel (Ni)-Total		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	01-NOV-21
Phosphorus (P)-Total		<0.50	<0.50	RPD-NA	mg/L	N/A	20	01-NOV-21
Potassium (K)-Total		12.4	12.5		mg/L	0.4	20	01-NOV-21
Rubidium (Rb)-Total		0.0094	0.0089		mg/L	5.3	20	01-NOV-21
Selenium (Se)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	01-NOV-21
Silicon (Si)-Total		9.9	10.0		mg/L	0.8	20	01-NOV-21
Silver (Ag)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	01-NOV-21
Sodium (Na)-Total		328	324		mg/L	1.1	20	01-NOV-21
Strontium (Sr)-Total		5.70	5.88		mg/L	3.0	20	01-NOV-21
Sulfur (S)-Total		1260	1290		mg/L	2.0	20	01-NOV-21
Thallium (Tl)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	01-NOV-21
Tellurium (Te)-Total		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	01-NOV-21
Thorium (Th)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	01-NOV-21
Tin (Sn)-Total		0.0018	0.0018		mg/L	0.6	20	01-NOV-21
Titanium (Ti)-Total		<0.0030	<0.0030	RPD-NA	mg/L	N/A	20	01-NOV-21
Tungsten (W)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	01-NOV-21
Uranium (U)-Total		0.0571	0.0553		mg/L	3.2	20	01-NOV-21
Vanadium (V)-Total		<0.0050	<0.0050		mg/L			01-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5633771								
WG3649449-4 DUP		**WG3649449-3**						
Vanadium (V)-Total		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	01-NOV-21
Zinc (Zn)-Total		<0.030	<0.030	RPD-NA	mg/L	N/A	20	01-NOV-21
Zirconium (Zr)-Total		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	01-NOV-21
WG3649449-2 LCS								
Aluminum (Al)-Total			104.5		%		80-120	01-NOV-21
Antimony (Sb)-Total			99.4		%		80-120	01-NOV-21
Arsenic (As)-Total			104.0		%		80-120	01-NOV-21
Barium (Ba)-Total			103.3		%		80-120	01-NOV-21
Beryllium (Be)-Total			100.5		%		80-120	01-NOV-21
Bismuth (Bi)-Total			101.0		%		80-120	01-NOV-21
Boron (B)-Total			98.6		%		80-120	01-NOV-21
Cadmium (Cd)-Total			99.6		%		80-120	01-NOV-21
Calcium (Ca)-Total			102.0		%		80-120	01-NOV-21
Chromium (Cr)-Total			100.5		%		80-120	01-NOV-21
Cesium (Cs)-Total			98.2		%		80-120	01-NOV-21
Cobalt (Co)-Total			99.2		%		80-120	01-NOV-21
Copper (Cu)-Total			98.6		%		80-120	01-NOV-21
Iron (Fe)-Total			101.0		%		80-120	01-NOV-21
Lead (Pb)-Total			102.2		%		80-120	01-NOV-21
Lithium (Li)-Total			105.9		%		80-120	01-NOV-21
Magnesium (Mg)-Total			111.2		%		80-120	01-NOV-21
Manganese (Mn)-Total			102.1		%		80-120	01-NOV-21
Molybdenum (Mo)-Total			100.8		%		80-120	01-NOV-21
Nickel (Ni)-Total			97.9		%		80-120	01-NOV-21
Phosphorus (P)-Total			104.0		%		70-130	01-NOV-21
Potassium (K)-Total			102.9		%		80-120	01-NOV-21
Rubidium (Rb)-Total			103.0		%		80-120	01-NOV-21
Selenium (Se)-Total			100.9		%		80-120	01-NOV-21
Silicon (Si)-Total			102.3		%		60-140	01-NOV-21
Silver (Ag)-Total			99.6		%		80-120	01-NOV-21
Sodium (Na)-Total			108.5		%		80-120	01-NOV-21
Strontium (Sr)-Total			101.9		%		80-120	01-NOV-21
Sulfur (S)-Total			102.2		%		80-120	01-NOV-21
Thallium (Tl)-Total			102.3				80-120	

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5633771								
WG3649449-2 LCS								
Thallium (Tl)-Total			102.3		%		80-120	01-NOV-21
Tellurium (Te)-Total			95.6		%		80-120	01-NOV-21
Thorium (Th)-Total			102.2		%		80-120	01-NOV-21
Tin (Sn)-Total			98.9		%		80-120	01-NOV-21
Titanium (Ti)-Total			99.6		%		80-120	01-NOV-21
Tungsten (W)-Total			99.7		%		80-120	01-NOV-21
Uranium (U)-Total			101.5		%		80-120	01-NOV-21
Vanadium (V)-Total			103.1		%		80-120	01-NOV-21
Zinc (Zn)-Total			97.7		%		80-120	01-NOV-21
Zirconium (Zr)-Total			96.0		%		80-120	01-NOV-21
WG3649449-1 MB								
Aluminum (Al)-Total			<0.0050		mg/L		0.005	01-NOV-21
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	01-NOV-21
Arsenic (As)-Total			<0.00010		mg/L		0.0001	01-NOV-21
Barium (Ba)-Total			<0.00010		mg/L		0.0001	01-NOV-21
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	01-NOV-21
Bismuth (Bi)-Total			<0.000050		mg/L		0.00005	01-NOV-21
Boron (B)-Total			<0.010		mg/L		0.01	01-NOV-21
Cadmium (Cd)-Total			<0.000005C		mg/L		0.000005	01-NOV-21
Calcium (Ca)-Total			<0.050		mg/L		0.05	01-NOV-21
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	01-NOV-21
Cesium (Cs)-Total			<0.000010		mg/L		0.00001	01-NOV-21
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	01-NOV-21
Copper (Cu)-Total			<0.00050		mg/L		0.0005	01-NOV-21
Iron (Fe)-Total			<0.010		mg/L		0.01	01-NOV-21
Lead (Pb)-Total			<0.000050		mg/L		0.00005	01-NOV-21
Lithium (Li)-Total			<0.0010		mg/L		0.001	01-NOV-21
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	01-NOV-21
Manganese (Mn)-Total			<0.00050		mg/L		0.0005	01-NOV-21
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	01-NOV-21
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	01-NOV-21
Phosphorus (P)-Total			<0.050		mg/L		0.05	01-NOV-21
Potassium (K)-Total			<0.050		mg/L		0.05	01-NOV-21
Rubidium (Rb)-Total			<0.00020		mg/L		0.0002	01-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5633771								
WG3649449-1 MB								
Selenium (Se)-Total			<0.000050		mg/L		0.00005	01-NOV-21
Silicon (Si)-Total			<0.10		mg/L		0.1	01-NOV-21
Silver (Ag)-Total			<0.000050		mg/L		0.00005	01-NOV-21
Sodium (Na)-Total			0.062	B	mg/L		0.05	01-NOV-21
Strontium (Sr)-Total			<0.0010		mg/L		0.001	01-NOV-21
Sulfur (S)-Total			<0.50		mg/L		0.5	01-NOV-21
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	01-NOV-21
Tellurium (Te)-Total			<0.00020		mg/L		0.0002	01-NOV-21
Thorium (Th)-Total			<0.00010		mg/L		0.0001	01-NOV-21
Tin (Sn)-Total			<0.00010		mg/L		0.0001	01-NOV-21
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	01-NOV-21
Tungsten (W)-Total			<0.00010		mg/L		0.0001	01-NOV-21
Uranium (U)-Total			<0.000010		mg/L		0.00001	01-NOV-21
Vanadium (V)-Total			<0.00050		mg/L		0.0005	01-NOV-21
Zinc (Zn)-Total			<0.0030		mg/L		0.003	01-NOV-21
Zirconium (Zr)-Total			<0.00020		mg/L		0.0002	01-NOV-21
WG3649449-5 MS		**WG3649449-6**						
Aluminum (Al)-Total			103.1		%		70-130	01-NOV-21
Antimony (Sb)-Total			100.3		%		70-130	01-NOV-21
Arsenic (As)-Total			110.4		%		70-130	01-NOV-21
Barium (Ba)-Total			N/A	MS-B	%		-	01-NOV-21
Beryllium (Be)-Total			93.1		%		70-130	01-NOV-21
Bismuth (Bi)-Total			92.7		%		70-130	01-NOV-21
Boron (B)-Total			N/A	MS-B	%		-	01-NOV-21
Cadmium (Cd)-Total			88.7		%		70-130	01-NOV-21
Calcium (Ca)-Total			N/A	MS-B	%		-	01-NOV-21
Chromium (Cr)-Total			103.1		%		70-130	01-NOV-21
Cesium (Cs)-Total			98.2		%		70-130	01-NOV-21
Cobalt (Co)-Total			96.9		%		70-130	01-NOV-21
Copper (Cu)-Total			88.2		%		70-130	01-NOV-21
Iron (Fe)-Total			102.9		%		70-130	01-NOV-21
Lead (Pb)-Total			89.6		%		70-130	01-NOV-21
Lithium (Li)-Total			N/A	MS-B	%		-	01-NOV-21
Magnesium (Mg)-Total			N/A	MS-B	%		-	01-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5633771								
WG3649449-5 MS		**WG3649449-6**						
Manganese (Mn)-Total			N/A	MS-B	%		-	01-NOV-21
Molybdenum (Mo)-Total			101.8		%		70-130	01-NOV-21
Nickel (Ni)-Total			86.1		%		70-130	01-NOV-21
Phosphorus (P)-Total			118.2		%		70-130	01-NOV-21
Potassium (K)-Total			N/A	MS-B	%		-	01-NOV-21
Rubidium (Rb)-Total			N/A	MS-B	%		-	01-NOV-21
Selenium (Se)-Total			120.2		%		70-130	01-NOV-21
Silicon (Si)-Total			N/A	MS-B	%		-	01-NOV-21
Silver (Ag)-Total			88.7		%		70-130	01-NOV-21
Sodium (Na)-Total			N/A	MS-B	%		-	01-NOV-21
Strontium (Sr)-Total			N/A	MS-B	%		-	01-NOV-21
Sulfur (S)-Total			N/A	MS-B	%		-	01-NOV-21
Thallium (Tl)-Total			95.4		%		70-130	01-NOV-21
Tellurium (Te)-Total			99.1		%		70-130	01-NOV-21
Thorium (Th)-Total			98.9		%		70-130	01-NOV-21
Tin (Sn)-Total			95.2		%		70-130	01-NOV-21
Titanium (Ti)-Total			108.7		%		70-130	01-NOV-21
Tungsten (W)-Total			99.6		%		70-130	01-NOV-21
Uranium (U)-Total			N/A	MS-B	%		-	01-NOV-21
Vanadium (V)-Total			110.1		%		70-130	01-NOV-21
Zirconium (Zr)-Total			98.4		%		70-130	01-NOV-21
Batch R5634397								
WG3650158-4 DUP		**WG3650158-3**						
Aluminum (Al)-Total		0.210	0.214		mg/L	1.6	20	02-NOV-21
Antimony (Sb)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	02-NOV-21
Arsenic (As)-Total		0.00085	0.00085		mg/L	0.4	20	02-NOV-21
Barium (Ba)-Total		0.00877	0.00882		mg/L	0.6	20	02-NOV-21
Beryllium (Be)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	02-NOV-21
Bismuth (Bi)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	02-NOV-21
Boron (B)-Total		0.013	0.013		mg/L	0.9	20	02-NOV-21
Cadmium (Cd)-Total		0.0000171	0.0000156		mg/L	9.2	20	02-NOV-21
Calcium (Ca)-Total		20.7	19.5		mg/L	6.4	20	02-NOV-21
Chromium (Cr)-Total		0.00175	0.00171		mg/L	2.5	20	02-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5634397								
WG3650158-4 DUP		**WG3650158-3**						
Cesium (Cs)-Total		0.000019	0.000019		mg/L	1.1	20	02-NOV-21
Cobalt (Co)-Total		0.00016	0.00016		mg/L	1.0	20	02-NOV-21
Copper (Cu)-Total		0.00175	0.00159		mg/L	9.4	20	02-NOV-21
Iron (Fe)-Total		0.442	0.440		mg/L	0.5	20	02-NOV-21
Lead (Pb)-Total		0.000142	0.000135		mg/L	4.5	20	02-NOV-21
Lithium (Li)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	02-NOV-21
Magnesium (Mg)-Total		5.18	5.29		mg/L	2.2	20	02-NOV-21
Manganese (Mn)-Total		0.0286	0.0288		mg/L	0.5	20	02-NOV-21
Molybdenum (Mo)-Total		0.000152	0.000133		mg/L	13	20	02-NOV-21
Nickel (Ni)-Total		0.00125	0.00113		mg/L	10	20	02-NOV-21
Phosphorus (P)-Total		<0.050	<0.050	RPD-NA	mg/L	N/A	20	02-NOV-21
Potassium (K)-Total		0.585	0.586		mg/L	0.3	20	02-NOV-21
Rubidium (Rb)-Total		0.00141	0.00152		mg/L	7.2	20	02-NOV-21
Selenium (Se)-Total		0.000117	0.000100		mg/L	15	20	02-NOV-21
Silicon (Si)-Total		2.96	2.94		mg/L	0.6	20	02-NOV-21
Silver (Ag)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	02-NOV-21
Sodium (Na)-Total		3.37	3.45		mg/L	2.5	20	02-NOV-21
Strontium (Sr)-Total		0.0338	0.0335		mg/L	1.0	20	02-NOV-21
Sulfur (S)-Total		1.80	1.77		mg/L	1.7	20	02-NOV-21
Thallium (Tl)-Total		<0.000010	<0.000010	RPD-NA	mg/L	N/A	20	02-NOV-21
Tellurium (Te)-Total		<0.00020	<0.00020	RPD-NA	mg/L	N/A	20	02-NOV-21
Thorium (Th)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	02-NOV-21
Tin (Sn)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	02-NOV-21
Titanium (Ti)-Total		0.00741	0.00745		mg/L	0.5	20	02-NOV-21
Tungsten (W)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	02-NOV-21
Uranium (U)-Total		0.000077	0.000074		mg/L	3.1	20	02-NOV-21
Vanadium (V)-Total		0.00067	0.00064		mg/L	4.3	20	02-NOV-21
Zinc (Zn)-Total		0.0042	0.0039		mg/L	9.2	20	02-NOV-21
Zirconium (Zr)-Total		0.00033	0.00033		mg/L	1.8	20	02-NOV-21
WG3650158-2 LCS								
Aluminum (Al)-Total			102.9		%		80-120	02-NOV-21
Antimony (Sb)-Total			101.4		%		80-120	02-NOV-21
Arsenic (As)-Total			104.0		%		80-120	02-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5634397								
WG3650158-2 LCS								
Barium (Ba)-Total			105.7		%		80-120	02-NOV-21
Beryllium (Be)-Total			102.5		%		80-120	02-NOV-21
Bismuth (Bi)-Total			99.7		%		80-120	02-NOV-21
Boron (B)-Total			96.6		%		80-120	02-NOV-21
Cadmium (Cd)-Total			105.5		%		80-120	02-NOV-21
Calcium (Ca)-Total			99.8		%		80-120	02-NOV-21
Chromium (Cr)-Total			103.5		%		80-120	02-NOV-21
Cesium (Cs)-Total			103.0		%		80-120	02-NOV-21
Cobalt (Co)-Total			101.8		%		80-120	02-NOV-21
Copper (Cu)-Total			101.5		%		80-120	02-NOV-21
Iron (Fe)-Total			102.4		%		80-120	02-NOV-21
Lead (Pb)-Total			99.7		%		80-120	02-NOV-21
Lithium (Li)-Total			100.7		%		80-120	02-NOV-21
Magnesium (Mg)-Total			111.2		%		80-120	02-NOV-21
Manganese (Mn)-Total			101.4		%		80-120	02-NOV-21
Molybdenum (Mo)-Total			102.3		%		80-120	02-NOV-21
Nickel (Ni)-Total			101.7		%		80-120	02-NOV-21
Phosphorus (P)-Total			97.8		%		70-130	02-NOV-21
Potassium (K)-Total			98.7		%		80-120	02-NOV-21
Rubidium (Rb)-Total			107.0		%		80-120	02-NOV-21
Selenium (Se)-Total			103.1		%		80-120	02-NOV-21
Silicon (Si)-Total			96.9		%		60-140	02-NOV-21
Silver (Ag)-Total			102.8		%		80-120	02-NOV-21
Sodium (Na)-Total			110.1		%		80-120	02-NOV-21
Strontium (Sr)-Total			99.7		%		80-120	02-NOV-21
Sulfur (S)-Total			93.4		%		80-120	02-NOV-21
Thallium (Tl)-Total			97.2		%		80-120	02-NOV-21
Tellurium (Te)-Total			104.5		%		80-120	02-NOV-21
Thorium (Th)-Total			98.0		%		80-120	02-NOV-21
Tin (Sn)-Total			104.3		%		80-120	02-NOV-21
Titanium (Ti)-Total			98.5		%		80-120	02-NOV-21
Tungsten (W)-Total			95.9		%		80-120	02-NOV-21
Uranium (U)-Total			99.7		%		80-120	02-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5634397								
WG3650158-2 LCS								
Vanadium (V)-Total			102.5		%		80-120	02-NOV-21
Zinc (Zn)-Total			98.5		%		80-120	02-NOV-21
Zirconium (Zr)-Total			96.0		%		80-120	02-NOV-21
WG3650158-1 MB								
Aluminum (Al)-Total			<0.0050		mg/L		0.005	03-NOV-21
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	02-NOV-21
Arsenic (As)-Total			<0.00010		mg/L		0.0001	02-NOV-21
Barium (Ba)-Total			<0.00010		mg/L		0.0001	02-NOV-21
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	02-NOV-21
Bismuth (Bi)-Total			<0.000050		mg/L		0.00005	02-NOV-21
Boron (B)-Total			<0.010		mg/L		0.01	02-NOV-21
Cadmium (Cd)-Total			<0.000005C		mg/L		0.000005	02-NOV-21
Calcium (Ca)-Total			<0.050		mg/L		0.05	02-NOV-21
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	03-NOV-21
Cesium (Cs)-Total			<0.000010		mg/L		0.00001	02-NOV-21
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	02-NOV-21
Copper (Cu)-Total			<0.00050		mg/L		0.0005	02-NOV-21
Iron (Fe)-Total			<0.010		mg/L		0.01	02-NOV-21
Lead (Pb)-Total			<0.000050		mg/L		0.00005	02-NOV-21
Lithium (Li)-Total			<0.0010		mg/L		0.001	02-NOV-21
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	02-NOV-21
Manganese (Mn)-Total			<0.00050		mg/L		0.0005	02-NOV-21
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	02-NOV-21
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	02-NOV-21
Phosphorus (P)-Total			<0.050		mg/L		0.05	02-NOV-21
Potassium (K)-Total			<0.050		mg/L		0.05	02-NOV-21
Rubidium (Rb)-Total			<0.00020		mg/L		0.0002	02-NOV-21
Selenium (Se)-Total			<0.000050		mg/L		0.00005	02-NOV-21
Silicon (Si)-Total			<0.10		mg/L		0.1	02-NOV-21
Silver (Ag)-Total			<0.000050		mg/L		0.00005	02-NOV-21
Sodium (Na)-Total			<0.050		mg/L		0.05	02-NOV-21
Strontium (Sr)-Total			<0.0010		mg/L		0.001	02-NOV-21
Sulfur (S)-Total			<0.50		mg/L		0.5	02-NOV-21
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	02-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5634397								
WG3650158-1 MB								
Tellurium (Te)-Total			<0.00020		mg/L		0.0002	02-NOV-21
Thorium (Th)-Total			<0.00010		mg/L		0.0001	02-NOV-21
Tin (Sn)-Total			<0.00010		mg/L		0.0001	02-NOV-21
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	02-NOV-21
Tungsten (W)-Total			<0.00010		mg/L		0.0001	02-NOV-21
Uranium (U)-Total			<0.000010		mg/L		0.00001	02-NOV-21
Vanadium (V)-Total			<0.00050		mg/L		0.0005	02-NOV-21
Zinc (Zn)-Total			<0.0030		mg/L		0.003	02-NOV-21
Zirconium (Zr)-Total			<0.00020		mg/L		0.0002	02-NOV-21
WG3650158-5 MS		**WG3650158-6**						
Aluminum (Al)-Total			N/A	MS-B	%		-	02-NOV-21
Antimony (Sb)-Total			103.7		%		70-130	02-NOV-21
Arsenic (As)-Total			103.2		%		70-130	02-NOV-21
Barium (Ba)-Total			98.2		%		70-130	02-NOV-21
Beryllium (Be)-Total			103.7		%		70-130	02-NOV-21
Bismuth (Bi)-Total			98.7		%		70-130	02-NOV-21
Boron (B)-Total			97.7		%		70-130	02-NOV-21
Cadmium (Cd)-Total			109.5		%		70-130	02-NOV-21
Calcium (Ca)-Total			N/A	MS-B	%		-	02-NOV-21
Chromium (Cr)-Total			103.9		%		70-130	02-NOV-21
Cesium (Cs)-Total			102.1		%		70-130	02-NOV-21
Cobalt (Co)-Total			103.1		%		70-130	02-NOV-21
Copper (Cu)-Total			105.5		%		70-130	02-NOV-21
Iron (Fe)-Total			N/A	MS-B	%		-	02-NOV-21
Lead (Pb)-Total			97.6		%		70-130	02-NOV-21
Lithium (Li)-Total			99.5		%		70-130	02-NOV-21
Magnesium (Mg)-Total			N/A	MS-B	%		-	02-NOV-21
Manganese (Mn)-Total			N/A	MS-B	%		-	02-NOV-21
Molybdenum (Mo)-Total			101.6		%		70-130	02-NOV-21
Nickel (Ni)-Total			102.1		%		70-130	02-NOV-21
Phosphorus (P)-Total			103.4		%		70-130	02-NOV-21
Potassium (K)-Total			97.2		%		70-130	02-NOV-21
Rubidium (Rb)-Total			99.7		%		70-130	02-NOV-21
Selenium (Se)-Total			106.0		%		70-130	02-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5634397								
WG3650158-5 MS		**WG3650158-6**						
Silicon (Si)-Total			N/A	MS-B	%		-	02-NOV-21
Silver (Ag)-Total			101.0		%		70-130	02-NOV-21
Sodium (Na)-Total			N/A	MS-B	%		-	02-NOV-21
Strontium (Sr)-Total			N/A	MS-B	%		-	02-NOV-21
Sulfur (S)-Total			97.4		%		70-130	02-NOV-21
Thallium (Tl)-Total			98.7		%		70-130	02-NOV-21
Tellurium (Te)-Total			101.5		%		70-130	02-NOV-21
Thorium (Th)-Total			97.1		%		70-130	02-NOV-21
Tin (Sn)-Total			102.8		%		70-130	02-NOV-21
Titanium (Ti)-Total			99.95		%		70-130	02-NOV-21
Tungsten (W)-Total			95.4		%		70-130	02-NOV-21
Uranium (U)-Total			95.6		%		70-130	02-NOV-21
Vanadium (V)-Total			103.3		%		70-130	02-NOV-21
Zinc (Zn)-Total			103.7		%		70-130	02-NOV-21
Zirconium (Zr)-Total			88.2		%		70-130	02-NOV-21
Batch R5636079								
WG3651199-4 DUP		**WG3651199-3**						
Aluminum (Al)-Total		0.136	0.141		mg/L	3.9	20	04-NOV-21
Antimony (Sb)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	04-NOV-21
Arsenic (As)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	04-NOV-21
Barium (Ba)-Total		0.0229	0.0230		mg/L	0.1	20	04-NOV-21
Beryllium (Be)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	04-NOV-21
Bismuth (Bi)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	04-NOV-21
Boron (B)-Total		<0.10	<0.10	RPD-NA	mg/L	N/A	20	04-NOV-21
Cadmium (Cd)-Total		<0.000050	<0.000050	RPD-NA	mg/L	N/A	20	04-NOV-21
Calcium (Ca)-Total		39.8	40.3		mg/L	1.3	20	04-NOV-21
Chromium (Cr)-Total		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	04-NOV-21
Cesium (Cs)-Total		0.00010	0.00012		mg/L	14	20	04-NOV-21
Cobalt (Co)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	04-NOV-21
Copper (Cu)-Total		0.0340	0.0341		mg/L	0.3	20	04-NOV-21
Iron (Fe)-Total		0.15	0.16		mg/L	10	20	04-NOV-21
Lead (Pb)-Total		0.00150	0.00159		mg/L	5.7	20	04-NOV-21
Lithium (Li)-Total		<0.010	<0.010	RPD-NA	mg/L	N/A	20	04-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5636079								
WG3651199-4 DUP		**WG3651199-3**						
Magnesium (Mg)-Total		10.8	10.7		mg/L	1.2	20	04-NOV-21
Manganese (Mn)-Total		0.0137	0.0142		mg/L	3.6	20	04-NOV-21
Molybdenum (Mo)-Total		0.00181	0.00177		mg/L	2.0	20	04-NOV-21
Nickel (Ni)-Total		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	04-NOV-21
Phosphorus (P)-Total		11.3	11.4		mg/L	1.1	20	04-NOV-21
Potassium (K)-Total		67.4	67.9		mg/L	0.7	20	04-NOV-21
Rubidium (Rb)-Total		0.0454	0.0441		mg/L	2.8	20	04-NOV-21
Selenium (Se)-Total		0.00116	0.00088	J	mg/L	0.00028	0.001	04-NOV-21
Silicon (Si)-Total		<1.0	<1.0	RPD-NA	mg/L	N/A	20	04-NOV-21
Silver (Ag)-Total		<0.00050	<0.00050	RPD-NA	mg/L	N/A	20	04-NOV-21
Sodium (Na)-Total		82.9	79.2		mg/L	4.6	20	04-NOV-21
Strontium (Sr)-Total		0.200	0.195		mg/L	2.6	20	04-NOV-21
Sulfur (S)-Total		20.5	21.4		mg/L	4.6	20	04-NOV-21
Thallium (Tl)-Total		<0.00010	<0.00010	RPD-NA	mg/L	N/A	20	04-NOV-21
Tellurium (Te)-Total		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	04-NOV-21
Thorium (Th)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	04-NOV-21
Tin (Sn)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	04-NOV-21
Titanium (Ti)-Total		0.0050	0.0073	J	mg/L	0.0023	0.006	04-NOV-21
Tungsten (W)-Total		<0.0010	<0.0010	RPD-NA	mg/L	N/A	20	04-NOV-21
Uranium (U)-Total		0.00012	0.00013		mg/L	11	20	04-NOV-21
Vanadium (V)-Total		<0.0050	<0.0050	RPD-NA	mg/L	N/A	20	04-NOV-21
Zinc (Zn)-Total		0.067	0.067		mg/L	0.1	20	04-NOV-21
Zirconium (Zr)-Total		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	04-NOV-21
WG3651199-2 LCS								
Aluminum (Al)-Total			101.5		%		80-120	04-NOV-21
Antimony (Sb)-Total			102.1		%		80-120	04-NOV-21
Arsenic (As)-Total			101.4		%		80-120	04-NOV-21
Barium (Ba)-Total			98.9		%		80-120	04-NOV-21
Beryllium (Be)-Total			93.1		%		80-120	04-NOV-21
Bismuth (Bi)-Total			99.0		%		80-120	04-NOV-21
Boron (B)-Total			88.3		%		80-120	04-NOV-21
Cadmium (Cd)-Total			100.2		%		80-120	04-NOV-21
Calcium (Ca)-Total			94.3		%		80-120	04-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5636079								
WG3651199-2 LCS								
Chromium (Cr)-Total			97.3		%		80-120	04-NOV-21
Cesium (Cs)-Total			97.8		%		80-120	04-NOV-21
Cobalt (Co)-Total			98.4		%		80-120	04-NOV-21
Copper (Cu)-Total			98.6		%		80-120	04-NOV-21
Iron (Fe)-Total			97.0		%		80-120	04-NOV-21
Lead (Pb)-Total			99.0		%		80-120	04-NOV-21
Lithium (Li)-Total			92.9		%		80-120	04-NOV-21
Magnesium (Mg)-Total			106.0		%		80-120	04-NOV-21
Manganese (Mn)-Total			100.2		%		80-120	04-NOV-21
Molybdenum (Mo)-Total			98.1		%		80-120	04-NOV-21
Nickel (Ni)-Total			97.8		%		80-120	04-NOV-21
Phosphorus (P)-Total			96.4		%		70-130	04-NOV-21
Potassium (K)-Total			96.3		%		80-120	04-NOV-21
Rubidium (Rb)-Total			104.4		%		80-120	04-NOV-21
Selenium (Se)-Total			98.1		%		80-120	04-NOV-21
Silicon (Si)-Total			100.3		%		60-140	04-NOV-21
Silver (Ag)-Total			96.0		%		80-120	04-NOV-21
Sodium (Na)-Total			101.0		%		80-120	04-NOV-21
Strontium (Sr)-Total			99.5		%		80-120	04-NOV-21
Sulfur (S)-Total			93.0		%		80-120	04-NOV-21
Thallium (Tl)-Total			99.8		%		80-120	04-NOV-21
Tellurium (Te)-Total			98.0		%		80-120	04-NOV-21
Thorium (Th)-Total			97.0		%		80-120	04-NOV-21
Tin (Sn)-Total			98.0		%		80-120	04-NOV-21
Titanium (Ti)-Total			97.3		%		80-120	04-NOV-21
Tungsten (W)-Total			98.0		%		80-120	04-NOV-21
Uranium (U)-Total			97.6		%		80-120	04-NOV-21
Vanadium (V)-Total			99.8		%		80-120	04-NOV-21
Zinc (Zn)-Total			98.1		%		80-120	04-NOV-21
Zirconium (Zr)-Total			95.6		%		80-120	04-NOV-21
WG3651199-1 MB								
Aluminum (Al)-Total			<0.0050		mg/L		0.005	04-NOV-21
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	04-NOV-21
Arsenic (As)-Total			<0.00010		mg/L		0.0001	04-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5636079								
WG3651199-1 MB								
Barium (Ba)-Total			<0.00010		mg/L		0.0001	04-NOV-21
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	04-NOV-21
Bismuth (Bi)-Total			<0.000050		mg/L		0.00005	04-NOV-21
Boron (B)-Total			<0.010		mg/L		0.01	04-NOV-21
Cadmium (Cd)-Total			<0.000005(		mg/L		0.000005	04-NOV-21
Calcium (Ca)-Total			<0.050		mg/L		0.05	04-NOV-21
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	04-NOV-21
Cesium (Cs)-Total			<0.000010		mg/L		0.00001	04-NOV-21
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	04-NOV-21
Copper (Cu)-Total			<0.00050		mg/L		0.0005	04-NOV-21
Iron (Fe)-Total			<0.010		mg/L		0.01	04-NOV-21
Lead (Pb)-Total			<0.000050		mg/L		0.00005	04-NOV-21
Lithium (Li)-Total			<0.0010		mg/L		0.001	04-NOV-21
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	04-NOV-21
Manganese (Mn)-Total			<0.00050		mg/L		0.0005	04-NOV-21
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	04-NOV-21
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	04-NOV-21
Phosphorus (P)-Total			<0.050		mg/L		0.05	04-NOV-21
Potassium (K)-Total			<0.050		mg/L		0.05	04-NOV-21
Rubidium (Rb)-Total			<0.00020		mg/L		0.0002	04-NOV-21
Selenium (Se)-Total			<0.000050		mg/L		0.00005	04-NOV-21
Silicon (Si)-Total			<0.10		mg/L		0.1	04-NOV-21
Silver (Ag)-Total			<0.000050		mg/L		0.00005	04-NOV-21
Sodium (Na)-Total			<0.050		mg/L		0.05	04-NOV-21
Strontium (Sr)-Total			<0.0010		mg/L		0.001	04-NOV-21
Sulfur (S)-Total			<0.50		mg/L		0.5	04-NOV-21
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	04-NOV-21
Tellurium (Te)-Total			<0.00020		mg/L		0.0002	04-NOV-21
Thorium (Th)-Total			<0.00010		mg/L		0.0001	04-NOV-21
Tin (Sn)-Total			<0.00010		mg/L		0.0001	04-NOV-21
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	04-NOV-21
Tungsten (W)-Total			<0.00010		mg/L		0.0001	04-NOV-21
Uranium (U)-Total			<0.000010		mg/L		0.00001	04-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5636079								
WG3651199-1 MB								
Vanadium (V)-Total			<0.00050		mg/L		0.0005	04-NOV-21
Zinc (Zn)-Total			<0.0030		mg/L		0.003	04-NOV-21
Zirconium (Zr)-Total			<0.00020		mg/L		0.0002	04-NOV-21
WG3651199-5 MS		**WG3651199-3**						
Aluminum (Al)-Total			N/A	MS-B	%		-	04-NOV-21
Antimony (Sb)-Total			102.2		%		70-130	04-NOV-21
Arsenic (As)-Total			112.4		%		70-130	04-NOV-21
Barium (Ba)-Total			N/A	MS-B	%		-	04-NOV-21
Beryllium (Be)-Total			103.6		%		70-130	04-NOV-21
Bismuth (Bi)-Total			109.5		%		70-130	04-NOV-21
Boron (B)-Total			102.5		%		70-130	04-NOV-21
Cadmium (Cd)-Total			112.5		%		70-130	04-NOV-21
Calcium (Ca)-Total			N/A	MS-B	%		-	04-NOV-21
Chromium (Cr)-Total			109.2		%		70-130	04-NOV-21
Cesium (Cs)-Total			103.7		%		70-130	04-NOV-21
Cobalt (Co)-Total			109.5		%		70-130	04-NOV-21
Copper (Cu)-Total			N/A	MS-B	%		-	04-NOV-21
Iron (Fe)-Total			N/A	MS-B	%		-	04-NOV-21
Lead (Pb)-Total			110.7		%		70-130	04-NOV-21
Lithium (Li)-Total			103.7		%		70-130	04-NOV-21
Magnesium (Mg)-Total			N/A	MS-B	%		-	04-NOV-21
Manganese (Mn)-Total			N/A	MS-B	%		-	04-NOV-21
Molybdenum (Mo)-Total			108.7		%		70-130	04-NOV-21
Nickel (Ni)-Total			108.1		%		70-130	04-NOV-21
Phosphorus (P)-Total			N/A	MS-B	%		-	04-NOV-21
Potassium (K)-Total			N/A	MS-B	%		-	04-NOV-21
Rubidium (Rb)-Total			N/A	MS-B	%		-	04-NOV-21
Selenium (Se)-Total			110.0		%		70-130	04-NOV-21
Silicon (Si)-Total			N/A	MS-B	%		-	04-NOV-21
Silver (Ag)-Total			102.3		%		70-130	04-NOV-21
Sodium (Na)-Total			N/A	MS-B	%		-	04-NOV-21
Strontium (Sr)-Total			N/A	MS-B	%		-	04-NOV-21
Sulfur (S)-Total			N/A	MS-B	%		-	04-NOV-21
Thallium (Tl)-Total			107.4		%		70-130	04-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5636079								
WG3651199-5 MS		**WG3651199-3**						
Tellurium (Te)-Total			92.5		%		70-130	04-NOV-21
Tin (Sn)-Total			100.6		%		70-130	04-NOV-21
Titanium (Ti)-Total			127.4		%		70-130	04-NOV-21
Tungsten (W)-Total			107.1		%		70-130	04-NOV-21
Uranium (U)-Total			110.1		%		70-130	04-NOV-21
Vanadium (V)-Total			111.7		%		70-130	04-NOV-21
Zinc (Zn)-Total			N/A	MS-B	%		-	04-NOV-21
NH3-COL-WP	**Water**							
Batch R5637863								
WG3654492-7 DUP		**L2654687-2**						
Ammonia, Total (as N)		0.011	0.013		mg/L	10	20	08-NOV-21
WG3654492-6 LCS								
Ammonia, Total (as N)			106.3		%		85-115	08-NOV-21
WG3654492-5 MB								
Ammonia, Total (as N)			<0.010		mg/L		0.01	08-NOV-21
WG3654492-8 MS		**L2654687-2**						
Ammonia, Total (as N)			89.6		%		75-125	08-NOV-21
NO2-IC-WT	**Water**							
Batch R5635989								
WG3651635-4 DUP		**WG3651635-3**						
Nitrite (as N)		<0.010	<0.010	RPD-NA	mg/L	N/A	20	03-NOV-21
WG3651635-2 LCS								
Nitrite (as N)			98.1		%		90-110	03-NOV-21
WG3651635-1 MB								
Nitrite (as N)			<0.010		mg/L		0.01	03-NOV-21
WG3651635-5 MS		**WG3651635-3**						
Nitrite (as N)			106.0		%		75-125	03-NOV-21
Batch R5659846								
WG3667607-20 DUP		**WG3667607-18**						
Nitrite (as N)		<0.010	<0.010	RPD-NA	mg/L	N/A	20	29-NOV-21
WG3667607-17 LCS								
Nitrite (as N)			99.9		%		90-110	29-NOV-21
WG3667607-16 MB								
Nitrite (as N)			<0.010		mg/L		0.01	29-NOV-21
WG3667607-19 MS		**WG3667607-18**						
Nitrite (as N)			100.4		%		75-125	29-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NO3-IC-WT	**Water**							
Batch R5635989								
WG3651635-4 DUP		**WG3651635-3**						
Nitrate (as N)		4.51	4.50		mg/L	0.0	20	03-NOV-21
WG3651635-2 LCS								
Nitrate (as N)			97.9		%		90-110	03-NOV-21
WG3651635-1 MB								
Nitrate (as N)			<0.020		mg/L		0.02	03-NOV-21
WG3651635-5 MS		**WG3651635-3**						
Nitrate (as N)			N/A	MS-B	%		-	03-NOV-21
Batch R5659846								
WG3667607-20 DUP		**WG3667607-18**						
Nitrate (as N)		<0.020	<0.020	RPD-NA	mg/L	N/A	20	29-NOV-21
WG3667607-17 LCS								
Nitrate (as N)			99.6		%		90-110	29-NOV-21
WG3667607-16 MB								
Nitrate (as N)			<0.020		mg/L		0.02	29-NOV-21
WG3667607-19 MS		**WG3667607-18**						
Nitrate (as N)			98.5		%		75-125	29-NOV-21
P-T-L-COL-WP	**Water**							
Batch R5654469								
WG3660185-3 DUP		**L2660557-10**						
Phosphorus (P)-Total		0.0011	0.0011		mg/L	0.9	20	19-NOV-21
WG3660185-2 LCS								
Phosphorus (P)-Total			83.1		%		80-120	19-NOV-21
WG3660185-1 MB								
Phosphorus (P)-Total			<0.0010		mg/L		0.001	19-NOV-21
WG3660185-4 MS		**L2661574-1**						
Phosphorus (P)-Total			92.0		%		70-130	19-NOV-21
PH-WT	**Water**							
Batch R5634430								
WG3650445-4 DUP		**WG3650445-3**						
pH		7.24	7.28	J	pH units	0.04	0.2	02-NOV-21
WG3650445-2 LCS								
pH			7.01		pH units		6.9-7.1	02-NOV-21
Batch R5659948								
WG3668028-4 DUP		**WG3668028-3**						
pH		7.94	8.01	J	pH units	0.07	0.2	01-DEC-21
WG3668028-2 LCS								

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PH-WT	**Water**							
Batch R5659948								
WG3668028-2 LCS								
pH			7.03		pH units		6.9-7.1	01-DEC-21
SO4-IC-N-WT	**Water**							
Batch R5635989								
WG3651635-4 DUP		**WG3651635-3**						
Sulfate (SO4)		23.4	23.4		mg/L	0.0	20	03-NOV-21
WG3651635-2 LCS								
Sulfate (SO4)			98.9		%		90-110	03-NOV-21
WG3651635-1 MB								
Sulfate (SO4)			<0.30		mg/L		0.3	03-NOV-21
WG3651635-5 MS		**WG3651635-3**						
Sulfate (SO4)			108.0		%		75-125	03-NOV-21
Batch R5659846								
WG3667607-20 DUP		**WG3667607-18**						
Sulfate (SO4)		<0.30	<0.30	RPD-NA	mg/L	N/A	20	29-NOV-21
WG3667607-17 LCS								
Sulfate (SO4)			101.2		%		90-110	29-NOV-21
WG3667607-16 MB								
Sulfate (SO4)			<0.30		mg/L		0.3	29-NOV-21
WG3667607-19 MS		**WG3667607-18**						
Sulfate (SO4)			102.6		%		75-125	29-NOV-21
SOLIDS-TDS-WT	**Water**							
Batch R5637098								
WG3653236-3 DUP		**L2657555-10**						
Total Dissolved Solids		455	459		mg/L	1.0	20	05-NOV-21
WG3653236-2 LCS								
Total Dissolved Solids			91.4		%		85-115	05-NOV-21
WG3653236-1 MB								
Total Dissolved Solids			<10		mg/L		10	05-NOV-21
Batch R5660082								
WG3667524-3 DUP		**L2667038-36**						
Total Dissolved Solids		522	526		mg/L	0.8	20	30-NOV-21
WG3667524-2 LCS								
Total Dissolved Solids			96.7		%		85-115	30-NOV-21
WG3667524-1 MB								
Total Dissolved Solids			<10		mg/L		10	30-NOV-21

Quality Control Report

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
SOLIDS-TSS-WT	**Water**							
Batch R5636099								
WG3650997-3 DUP		**L2657585-10**						
Total Suspended Solids		246	305	DUP-H	mg/L	21	20	04-NOV-21
WG3650997-2 LCS								
Total Suspended Solids			100.8		%		85-115	04-NOV-21
WG3650997-1 MB								
Total Suspended Solids			<3.0		mg/L		3	04-NOV-21
Batch R5660040								
WG3667526-3 DUP		**L2666567-2**						
Total Suspended Solids		20.8	17.6		mg/L	17	20	01-DEC-21
WG3667526-2 LCS								
Total Suspended Solids			100.0		%		85-115	01-DEC-21
WG3667526-1 MB								
Total Suspended Solids			<3.0		mg/L		3	01-DEC-21

Quality Control Report

Workorder: L2657407 Report Date: 14-DEC-21

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Legend:

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

Sample Parameter Qualifier Definitions:

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

Quality Control Report

Workorder: L2657407 Report Date: 14-DEC-21

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Physical Tests							
Conductivity							
	4	28-OCT-21	01-DEC-21 00:00	28	34	days	EHT
Suspended solids							
	4	28-OCT-21	01-DEC-21 00:00	7	34	days	EHT
Total Dissolved Solids							
	1	28-OCT-21 11:00	05-NOV-21 00:00	7	8	days	EHT
	2	28-OCT-21 11:45	05-NOV-21 00:00	7	8	days	EHT
	4	28-OCT-21	30-NOV-21 00:00	7	33	days	EHT
pH							
	1	28-OCT-21 11:00	02-NOV-21 00:00	4	5	days	EHT
	2	28-OCT-21 11:45	02-NOV-21 00:00	4	5	days	EHT
	4	28-OCT-21	01-DEC-21 00:00	4	34	days	EHT
Leachable Anions & Nutrients							
Bromide in Water by IC							
	4	28-OCT-21	29-NOV-21 11:05	28	32	days	EHT
Chloride by IC							
	4	28-OCT-21	29-NOV-21 11:05	28	32	days	EHT
Fluoride in Water by IC							
	4	28-OCT-21	29-NOV-21 11:05	28	32	days	EHT
Nitrate in Water by IC							
	4	28-OCT-21	29-NOV-21 11:05	7	32	days	EHT
Nitrite in Water by IC							
	4	28-OCT-21	29-NOV-21 11:05	7	32	days	EHT
Sulfate in Water by IC							
	4	28-OCT-21	29-NOV-21 11:05	28	32	days	EHT
Anions and Nutrients							
Alkalinity, Total (as CaCO3)							
	4	28-OCT-21	01-DEC-21 00:00	14	34	days	EHT
Inorganic Parameters							
Acidity (as CaCO3)							
	4	28-OCT-21	01-DEC-21 00:00	14	34	days	EHT

Legend & Qualifier Definitions:

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

Notes*:
Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes.
Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2657407 were received on 30-OCT-21 09:21.

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

Quality Control Report

Workorder: L2657407 Report Date: 14-DEC-21

Client: Wood Environment & Infrastructure Solutions
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

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

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

Tuesday, December 07, 2021

Gayle Braun
ALS Environmental
60 Northland Rd, Unit 1
Waterloo Canada, ON N2V 2B8

Re: ALS Workorder: 2111172
Project Name:
Project Number: L2657407

Dear Braun:

Three water samples were received from ALS Environmental, on 11/5/2021. The samples were scheduled for the following analysis:

Isotopic Radium

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

For
ALS Environmental
Kelley M. Beyers
Project Manager

Accreditations: ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
Arizona	AZ0828
California (CA)	2926
Colorado (CO)	CO01099
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
Oklahoma	1301
PJLA (DoD ELAP/ISO 170250)	95377
PJLA (DOE-AP/ISO 17025)	95377
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO010992018-1
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	TN02976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280
Virginia	460305

40 CFR Part 136: All analyses for Clean Water Act samples are analyzed using the 40 CFR Part 136 specified method and include all the QC requirements.

2111172

Isotopic Radium:

The samples were analyzed for the presence of isotopic radium by alpha spectroscopy according to the current revision of SOP 714.

All acceptance criteria were met.

ALS -- Fort Collins

Sample Number(s) Cross-Reference Table

OrderNum: 2111172
Client Name: ALS Environmental
Client Project Name:
Client Project Number: L2657407
Client PO Number: L2657407

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
L2657407-1	2111172-1		WATER	28-Oct-21	
L2657407-2	2111172-2		WATER	28-Oct-21	
L2657407-2	2111172-3		WATER	28-Oct-21	

L2657407

MISSISSAUGA

ALS Environmental

KMB 2111172

Subcontract Request Form

Subcontract To:

ALS ENVIRONMENTAL - FORT COLLINS, COLORADO, USA
225 COMMERCE DRIVE
FORT COLLINS,CO 80524

NOTES: Please reference on final report and invoice: PO# *L2657407*
ALS requires QC data to be provided with your final results.

Please see enclosed 3 sample(s) in 3 Container(s)

SAMPLE NUMBER	ANALYTICAL REQUIRED	DATE SAMPLED / DUE DATE	Priority Flag
L2657407-1 MATR-01		**10/28/2021**	
	Ra226 by Alpha Spec, MDC=0.01 Bq/L (RA226-ALPHASPEC-FC 1)	11/24/2021	
L2657407-2 MATR-02		**10/28/2021**	
	Ra226 by Alpha Spec, MDC=0.01 Bq/L (RA226-ALPHASPEC-FC 1)	11/24/2021	
L2657407-3 DUP-01		**10/28/2021**	
	Ra226 by Alpha Spec, MDC=0.01 Bq/L (RA226-ALPHASPEC-FC 1)	11/24/2021	

Subcontract Info Contact: Amanda Fazekas (905) 507-6910
Analysis and reporting info contact: Gayle Braun
5730 COOPERS AVENUE, UNIT #26
MISSISSAUGA,ON L4Z 2E9
Phone: (905) 507-6910 Email: gayle.braun@alsglobal.com

Please email confirmation of receipt to: gayle.braun@alsglobal.com

Shipped By: _____ Date Shipped: _____

Received By: <original signed by> Date Received: 10-27-21 1400

Verified By: _____ Date Verified: _____

Temperature: 8.9°C

Sample Integrity Issues: _____

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: ALS CANADA Workorder No: 2111172

Project Manager: KMB Initials: KC Date: 11/05/2021

		N/A	YES	NO
1.	Are airbills / shipping documents present and/or removable?		X	
	Tracking number: 61 1360 1174			
2.	Are custody seals on shipping containers intact?	X		
3.	Are custody seals on sample containers intact?	X		
4.	Is there a COC (chain-of-custody) present?		X	
5.	Is the COC in agreement with samples received? (IDs, dates, times, # of samples, # of containers, matrix, requested analyses, etc.)			X
6.	Are short-hold samples present?			X
7.	Are all samples within holding times for the requested analyses?		X	
8.	Were all sample containers received intact? (not broken or leaking)		X	
9.	Is there sufficient sample for the requested analyses?		X	
10.	Are samples in proper containers for requested analyses? (form 250, *Sample Handling Guidelines*)		X	
11.	Are all aqueous samples preserved correctly, if required? (excluding volatiles)		X	
12.	Are all samples requiring no headspace (VOC, GRO, RSK/MEE, radon) free of bubbles > 6 mm (1/4 inch) diameter? (i.e. size of green pea)	X		
13.	Were the samples shipped on ice?		X	
14.	Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #5	RAD ONLY		X

Cooler #:	1						
Temperature (°C):	8.9						
# of custody seals on cooler:	0						
External µR/hr reading:	9						
Background µR/hr reading:	11						

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? YES

* Please provide details here for NO responses to boxes above - for 2 thru 5 & 7 thru 12, notify PM & continue w/ login.

COC STATES 3 BOTTLES, RECEIVED 4 BOTTLES (SAMPLE 2 HAD 2 BOTTLES)

Were unpreserved bottles pH checked? NA All client bottle ID's vs ALS lab ID's double-checked by:KC

If applicable, was the client contacted? YES / NO / NA Contact: _____ Date/Time: _____

Project Manager Signature / Dat<original signed by> _____

Form 201r29.xls
(10/15/2019)

*IR Gun #3, VWR SN 170647571
*IR Gun #5, VWR SN 192272629

Client:	ALS Environmental	**Date:**	*07-Dec-21*
Project:	L2657407	**Work Order:**	2111172
Sample ID:	L2657407-1	**Lab ID:**	2111172-1
Legal Location:		**Matrix:**	WATER
Collection Date:	10/28/2021	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Isotopic Radium by Alpha Spectroscopy			**SOP 714**	Prep Date: **11/18/2021**	PrepBy: **HLR**	
Tracer: At-217	*64.9*		*30-110*	*%REC*	DL = NA	11/24/2021 16:13
Ra-226	0.0012 (+/- 0.00060)	U	0.002	BQ/l	NA	11/24/2021 16:13

Client:	ALS Environmental	**Date:**	*07-Dec-21*
Project:	L2657407	**Work Order:**	2111172
Sample ID:	L2657407-2	**Lab ID:**	2111172-2
Legal Location:		**Matrix:**	WATER
Collection Date:	10/28/2021	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Isotopic Radium by Alpha Spectroscopy			**SOP 714**		Prep Date: **11/18/2021**	PrepBy: **HLR**
Tracer: At-217	*65.2*		*30-110*	*%REC*	DL = NA	11/24/2021 16:13
Ra-226	**0.0022 (+/- 0.00070)**		**0.0017**	**BQ/l**	NA	11/24/2021 16:13

Client:	ALS Environmental	**Date:**	*07-Dec-21*
Project:	L2657407	**Work Order:**	2111172
Sample ID:	L2657407-2	**Lab ID:**	2111172-3
Legal Location:		**Matrix:**	WATER
Collection Date:	10/28/2021	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Isotopic Radium by Alpha Spectroscopy			**SOP 714**		Prep Date: **11/18/2021**	PrepBy: **HLR**
Tracer: At-217	*61.1*		*30-110*	*%REC*	DL = NA	11/24/2021 16:13
Ra-226	**0.0021 (+/- 0.00070)**		**0.0018**	**BQ/l**	NA	11/24/2021 16:13

Client:	ALS Environmental	**Date:**	*07-Dec-21*
Project:	L2657407	**Work Order:**	2111172
Sample ID:	L2657407-2	**Lab ID:**	2111172-3
Legal Location:		**Matrix:**	WATER
Collection Date:	10/28/2021	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed

Explanation of Qualifiers

Radiochemistry:

- "Report Limit" is the MDC

U or ND - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.
# - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.
G - Sample density differs by more than 15% of LCS density.
D - DER is greater than Control Limit

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).

U or ND - Indicates that the compound was analyzed for but not detected.

E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.

M - Duplicate injection precision was not met.

N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.

Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.

* - Duplicate analysis (relative percent difference) not within control limits.

S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.

B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.

E - Analyte concentration exceeds the upper level of the calibration range.

J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).

A - A tentatively identified compound is a suspected aldol-condensation product.

X - The analyte was diluted below an accurate quantitation level.

* - The spike recovery is equal to or outside the control criteria used.

+ - The relative percent difference (RPD) equals or exceeds the control criteria.

G - A pattern resembling gasoline was detected in this sample.

D - A pattern resembling diesel was detected in this sample.

M - A pattern resembling motor oil was detected in this sample.

C - A pattern resembling crude oil was detected in this sample.

4 - A pattern resembling JP-4 was detected in this sample.

5 - A pattern resembling JP-5 was detected in this sample.

H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.

L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.

Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
- gasoline
- JP-8
- diesel
- mineral spirits
- motor oil
- Stoddard solvent
- bunker C

Batch ID: **RAS211118-1-1** Instrument ID **AlphaSpec2** Method: **Isotopic Radium by Alpha Spect**

DUP Sample ID: **2111172-2** Units: **BQ/l** Analysis Date: **11/24/2021 16:13**
Client ID: **L2657407-2** Run ID: **RAS211118-1** Prep Date: **11/18/2021** DF: **NA**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	DER Ref	DER	DER Limit	Qual
Tracer: At-217	0.0182	0.000157	0.0279		65.2	30-110		0.0182			
Ra-226	0.0023 (+/- 0.00080)	0.0025						0.0022	0.06	2.1	U

LCS Sample ID: **RAS211118-1** Units: **BQ/l** Analysis Date: **11/24/2021 16:13**
Client ID: Run ID: **RAS211118-1** Prep Date: **11/18/2021** DF: **NA**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	DER Ref	DER	DER Limit	Qual
Tracer: At-217	0.0187	0.000151	0.0279		67	30-110					
Ra-226	0.333 (+/- 0.0218)	0.0022	0.3435		96.9	80-120					P

MB Sample ID: **RAS211118-1** Units: **BQ/l** Analysis Date: **11/24/2021 16:13**
Client ID: Run ID: **RAS211118-1** Prep Date: **11/18/2021** DF: **NA**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	DER Ref	DER	DER Limit	Qual
Tracer: At-217	0.0202	0.000159	0.0279		72.6	30-110					
Ra-226	0.0015 (+/- 0.00060)	0.0022									U

The following samples were analyzed in this batch: 2111172-1 2111172-2 2111172-3

Chain of Custody (COC) / Analytical Request Form

COC Number: **20 -**

Page of

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Report To	Contact and company name below will appear on the final report
Company:	Wood E&IS
Contact:	Dale Klodnicki
Phone:	(647) 993-4243
	Company address below will appear on the final report
Street:	2020 Winston Park Dirve, Suite 600
City/Province:	Oakville, ON
Postal Code:	L6H 6X7
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Wood E&IS
Contact:	Dale Klodnicki

Reports / Recipients	
Select Report Format:	☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Merge QC/QCI Reports with COA	☑ YES ☐ NO ☐ N/A
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	dale.klodnicki@woodplc.com
Email 2	michael.godard@woodplc.com
Email 3	

Invoice Recipients	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	APInvoice.Canada@woodplc.com
Email 2	dale.klodnicki@woodplc.com

Project Information	
ALS Account # / Quote #:	Q86725
Job #:	OMEMA2002
PO / AFE:	OMEMA2002.2021C.200.5120.573000
LSD:	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (ALS use only):

ALS Contact: Gayle Braun **Sampler:** RD / MG

Turnaround Time (TAT) Requested

- ☑ Routine [R] if received by 3pm M-F - no surcharges apply
- ☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
- ☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
- ☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
- ☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
- ☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.

Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests.

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

AFFIX ALS BARCODE LABEL HERE (ALS use only)

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	F	Dissolved Metals	Total Metals	Acidity, Alkalinity, Hardness, pH	Anions, Conductivity	Total & Free Cyanide	Cyanide WAD	Total Mercury by CVAFS (Ultra)	Total Mthylmercury by GCAFS	Ammonia, Total Phosphorus	Radium 226	Total Suspended Solids	Total Dissolved Solids			SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	MatR-01	28-Oct-21	11:00	SW	8	R	R	R	R	R	R	R	R	R	R	R	R					
	MatR-02	28-Oct-21	11:45	SW	8	R	R	R	R	R	R	R	R	R	R	R	R					
	Dup-01	28-Oct-21			8	R	R	R	R	R	R	R	R	R	R	R	R					
		-	-																			
		-	-																			
		-	-																			
		-	-																			
		-	-																			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

[Combined] - Ontario PWQO+CCME-FAL-WATER

Federal CCME Canadian Environmental Quality Guidelines (JUL, 2012)

MatR-01 – Field Temp: 9.4 / pH: 7.75 | MatR-02 – Field Temp: 8.9 / pH: 7.70

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☐ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)		
Released by: M.Godard	Date: 30-Oct-21 09:00	Time:

INITIAL SHIPMENT RECEPTION (ALS use only)		
Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (ALS use only)		
Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY AUG 2020 FRONT

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

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

Wood Environment and Infrastructure
Solutions Canada Limited
ATTN: Dale Klodnicki
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7

Date Received: 01-JUN-22
Report Date: 06-JUL-22 09:51 (MT)
Version: FINAL

Client Phone: 905-568-2929

Certificate of Analysis

Lab Work Order #: L2711537

Project P.O. #: NOT SUBMITTED
Job Reference: OMEMA2022
C of C Numbers: 20-1000906
Legal Site Desc:

<original signed by>

Gayle Braun
Senior Account Manager

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L2711537-1	L2711537-2	L2711537-3	L2711537-4	L2711537-5
Description	WATER	WATER	WATER	WATER	WATER
Sampled Date	30-MAY-22	29-MAY-22	29-MAY-22	29-MAY-22	29-MAY-22
Sampled Time	11:45	14:00	13:15	10:30	
Client ID	NDR-S-04	NDR-P-01	NDR-S-01	JC-S-01	TRIP BLANK
Grouping / **Analyte**					
WATER					
Physical Tests Conductivity (umhos/cm)	74.6	49.1	38.5	47.5	<1.0
Hardness (as CaCO3) (mg/L)	40.4	34.3	28.7	16.6	<0.50
pH (pH units)	7.05	6.59	6.40	5.31	5.76
Total Suspended Solids (mg/L)	9.6	5.2	<3.0	<3.0	<3.0
Total Dissolved Solids (mg/L)	105 DLDS	83	79	57	<10
Anions and Nutrients Alkalinity, Total (as CaCO3) (mg/L)	28.4	22.3	11.7	2.4	<1.0
Ammonia, Total (as N) (mg/L)	0.019	0.016	0.015	<0.010	0.031
Bromide (Br) (mg/L)	<0.10	<0.10	<0.10	<0.10	<0.10
Chloride (Cl) (mg/L)	4.55	<0.50	<0.50	6.54	<0.50
Fluoride (F) (mg/L)	0.021	<0.020	<0.020	<0.020	<0.020
Nitrate (as N) (mg/L)	0.248	0.027	0.034	0.048	<0.020
Nitrite (as N) (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
Phosphorus, Total (mg/L)	0.0124	0.0163	0.0117	0.0074	<0.0030
Sulfate (SO4) (mg/L)	<0.30	<0.30	<0.30	<0.30	<0.30
Cyanides Cyanide, Weak Acid Diss (mg/L)	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Cyanide, Total (mg/L)	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Cyanide, Free (mg/L)	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Inorganic Parameters Acidity (as CaCO3) (mg/L)	6.5	13.0	10.5	14.8	<2.0
Total Metals Aluminum (Al)-Total (mg/L)	0.326	0.213	0.237	0.111	<0.0050
Antimony (Sb)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Total (mg/L)	0.00086	0.00099	0.00085	0.00069	<0.00010
Barium (Ba)-Total (mg/L)	0.00711	0.00556	0.00464	0.00326	<0.00010
Beryllium (Be)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Total (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron (B)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Total (mg/L)	0.0000219	0.0000301	0.0000236	0.0000428	<0.0000050
Calcium (Ca)-Total (mg/L)	10.5	9.37	8.10	4.78	<0.050
Cesium (Cs)-Total (mg/L)	0.000018	<0.000010	<0.000010	<0.000010	<0.000010
Chromium (Cr)-Total (mg/L)	0.00088	0.00059	0.00066	<0.00050	<0.00050
Cobalt (Co)-Total (mg/L)	0.00019	0.00021	<0.00010	0.00012	<0.00010
Copper (Cu)-Total (mg/L)	0.00122	0.00084	0.00152	0.00125	<0.00050
Iron (Fe)-Total (mg/L)	0.508	0.430	0.329	0.251	<0.010
Lead (Pb)-Total (mg/L)	0.000196	0.000310	0.000163	0.000773	<0.000050
Lithium (Li)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Magnesium (Mg)-Total (mg/L)	2.97	2.15	1.89	1.05	<0.0050
Manganese (Mn)-Total (mg/L)	0.0555	0.0490 DTC	0.0152	0.0405	<0.00050

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2711537-6	L2711537-7			
	Description	WATER	WATER			
	Sampled Date	30-MAY-22	30-MAY-22			
	Sampled Time	10:50				
	Client ID	NDR-P-04	CNC-DUP-01			
Grouping	**Analyte**					
WATER						
Physical Tests	Conductivity (umhos/cm)	122	75.1			
	Hardness (as CaCO3) (mg/L)	68.2	40.2			
	pH (pH units)	7.65	7.10			
	Total Suspended Solids (mg/L)	<3.0	6.7			
	Total Dissolved Solids (mg/L)	77 DLDS	100 DLDS			
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	72.8	28.8			
	Ammonia, Total (as N) (mg/L)	0.014	0.035			
	Bromide (Br) (mg/L)	<0.10	<0.10			
	Chloride (Cl) (mg/L)	0.51	4.58			
	Fluoride (F) (mg/L)	0.029	0.021			
	Nitrate (as N) (mg/L)	<0.020	0.037			
	Nitrite (as N) (mg/L)	<0.010	<0.010			
	Phosphorus, Total (mg/L)	0.0130	0.0194			
	Sulfate (SO4) (mg/L)	<0.30	<0.30			
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0020	<0.0020			
	Cyanide, Total (mg/L)	<0.0020	<0.0020			
	Cyanide, Free (mg/L)	<0.0020	<0.0020			
Inorganic Parameters	Acidity (as CaCO3) (mg/L)	4.3	5.8			
Total Metals	Aluminum (Al)-Total (mg/L)	0.0207	0.351			
	Antimony (Sb)-Total (mg/L)	<0.00010	<0.00010			
	Arsenic (As)-Total (mg/L)	0.00033	0.00086			
	Barium (Ba)-Total (mg/L)	0.00513	0.00690			
	Beryllium (Be)-Total (mg/L)	<0.00010	<0.00010			
	Bismuth (Bi)-Total (mg/L)	<0.000050	<0.000050			
	Boron (B)-Total (mg/L)	<0.010	<0.010			
	Cadmium (Cd)-Total (mg/L)	<0.0000050	0.0000240			
	Calcium (Ca)-Total (mg/L)	19.0	10.8			
	Cesium (Cs)-Total (mg/L)	<0.000010	0.000024			
	Chromium (Cr)-Total (mg/L)	<0.00050	0.00091			
	Cobalt (Co)-Total (mg/L)	<0.00010	0.00022			
	Copper (Cu)-Total (mg/L)	<0.00050	0.00136			
	Iron (Fe)-Total (mg/L)	0.088	0.539			
	Lead (Pb)-Total (mg/L)	<0.000050	0.000228			
	Lithium (Li)-Total (mg/L)	<0.0010	<0.0010			
	Magnesium (Mg)-Total (mg/L)	3.78	3.03			
	Manganese (Mn)-Total (mg/L)	0.0109 DTC	0.0654			

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L2711537-1	L2711537-2	L2711537-3	L2711537-4	L2711537-5
Description	WATER	WATER	WATER	WATER	WATER
Sampled Date	30-MAY-22	29-MAY-22	29-MAY-22	29-MAY-22	29-MAY-22
Sampled Time	11:45	14:00	13:15	10:30	
Client ID	NDR-S-04	NDR-P-01	NDR-S-01	JC-S-01	TRIP BLANK
Grouping / **Analyte**					
WATER					
Total Metals Mercury (Hg)-Total (ug/L)	0.00446	0.00340	0.00648	0.00290	<0.00050
Molybdenum (Mo)-Total (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Nickel (Ni)-Total (mg/L)	0.00094	0.00079	0.00088	0.00053	<0.00050
Phosphorus (P)-Total (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total (mg/L)	0.205	0.172	0.057	0.083	<0.050
Rubidium (Rb)-Total (mg/L)	0.00081	0.00029	0.00026	0.00024	<0.00020
Selenium (Se)-Total (mg/L)	0.000152	0.000151	0.000160	0.000132	<0.000050
Silicon (Si)-Total (mg/L)	0.84	0.19	0.24	0.70	<0.10
Silver (Ag)-Total (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Sodium (Na)-Total (mg/L)	3.46	0.470	0.570	4.16	<0.050
Strontium (Sr)-Total (mg/L)	0.0206	0.0171	0.0150	0.0093	<0.0010
Sulfur (S)-Total (mg/L)	<0.50	<0.50	<0.50	<0.50	<0.50
Tellurium (Te)-Total (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium (Tl)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thorium (Th)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total (mg/L)	0.0103	0.00293	0.00364	0.00182	<0.00030
Tungsten (W)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium (U)-Total (mg/L)	0.000039	0.000017	0.000024	<0.000010	<0.000010
Vanadium (V)-Total (mg/L)	0.00080	<0.00050	0.00053	<0.00050	<0.00050
Zinc (Zn)-Total (mg/L)	0.0065	0.0249	0.0083	0.0100	<0.0030
Zirconium (Zr)-Total (mg/L)	0.00043	0.00023	0.00035	<0.00020	<0.00020
Dissolved Metals Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved (mg/L)	0.175	0.231	0.240	0.106	<0.0050
Antimony (Sb)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Dissolved (mg/L)	0.00090	0.00105	0.00089	0.00070	<0.00010
Barium (Ba)-Dissolved (mg/L)	0.00582	0.00626	0.00459	0.00326	<0.00010
Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron (B)-Dissolved (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Dissolved (mg/L)	0.0000237	0.0000348	0.0000288	0.0000503	<0.0000050
Calcium (Ca)-Dissolved (mg/L)	11.4	10.2	8.32	4.87	<0.050
Cesium (Cs)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Chromium (Cr)-Dissolved (mg/L)	0.00051	<0.00050	0.00058	<0.00050	<0.00050
Cobalt (Co)-Dissolved (mg/L)	0.00011	0.00027	0.00010	0.00011	<0.00010
Copper (Cu)-Dissolved (mg/L)	0.00108	0.00092	0.00150	0.00124	<0.00020
Iron (Fe)-Dissolved (mg/L)	0.330	0.444	0.325	0.242	<0.010

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2711537-6	L2711537-7			
	Description	WATER	WATER			
	Sampled Date	30-MAY-22	30-MAY-22			
	Sampled Time	10:50				
	Client ID	NDR-P-04	CNC-DUP-01			
Grouping	**Analyte**					
WATER						
Total Metals	Mercury (Hg)-Total (ug/L)	0.00148	0.00480			
	Molybdenum (Mo)-Total (mg/L)	<0.000050	0.000055			
	Nickel (Ni)-Total (mg/L)	<0.00050	0.00099			
	Phosphorus (P)-Total (mg/L)	<0.050	<0.050			
	Potassium (K)-Total (mg/L)	0.783	0.321			
	Rubidium (Rb)-Total (mg/L)	0.00085	0.00088			
	Selenium (Se)-Total (mg/L)	<0.000050	0.000126			
	Silicon (Si)-Total (mg/L)	1.06	0.81			
	Silver (Ag)-Total (mg/L)	<0.000050	<0.000050			
	Sodium (Na)-Total (mg/L)	0.606	3.54			
	Strontium (Sr)-Total (mg/L)	0.0215	0.0208			
	Sulfur (S)-Total (mg/L)	<0.50	<0.50			
	Tellurium (Te)-Total (mg/L)	<0.00020	<0.00020			
	Thallium (Tl)-Total (mg/L)	<0.000010	<0.000010			
	Thorium (Th)-Total (mg/L)	<0.00010	<0.00010			
	Tin (Sn)-Total (mg/L)	<0.00010	<0.00010			
	Titanium (Ti)-Total (mg/L)	0.00063	0.0121			
	Tungsten (W)-Total (mg/L)	<0.00010	<0.00010			
	Uranium (U)-Total (mg/L)	<0.000010	0.000038			
	Vanadium (V)-Total (mg/L)	<0.00050	0.00087			
	Zinc (Zn)-Total (mg/L)	0.0071	0.0160			
	Zirconium (Zr)-Total (mg/L)	<0.00020	0.00041			
Dissolved Metals	Dissolved Metals Filtration Location	FIELD	FIELD			
	Aluminum (Al)-Dissolved (mg/L)	0.0129	0.172			
	Antimony (Sb)-Dissolved (mg/L)	<0.00010	<0.00010			
	Arsenic (As)-Dissolved (mg/L)	0.00034	0.00086			
	Barium (Ba)-Dissolved (mg/L)	0.00521	0.00561			
	Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00010			
	Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050			
	Boron (B)-Dissolved (mg/L)	<0.010	<0.010			
	Cadmium (Cd)-Dissolved (mg/L)	<0.0000050	0.0000180			
	Calcium (Ca)-Dissolved (mg/L)	21.1	11.5			
	Cesium (Cs)-Dissolved (mg/L)	<0.000010	<0.000010			
	Chromium (Cr)-Dissolved (mg/L)	<0.00050	<0.00050			
	Cobalt (Co)-Dissolved (mg/L)	<0.00010	<0.00010			
	Copper (Cu)-Dissolved (mg/L)	0.00025	0.00104			
	Iron (Fe)-Dissolved (mg/L)	0.081	0.340			

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L2711537-1 WATER 30-MAY-22 11:45 NDR-S-04	L2711537-2 WATER 29-MAY-22 14:00 NDR-P-01	L2711537-3 WATER 29-MAY-22 13:15 NDR-S-01	L2711537-4 WATER 29-MAY-22 10:30 JC-S-01	L2711537-5 WATER 29-MAY-22 TRIP BLANK
WATER						
Dissolved Metals	Lead (Pb)-Dissolved (mg/L)	0.000113	0.000344	0.000160	0.000816	<0.000050
	Lithium (Li)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Magnesium (Mg)-Dissolved (mg/L)	2.89	2.14	1.91	1.08	<0.0050
	Manganese (Mn)-Dissolved (mg/L)	0.0478	0.0723	0.0163	0.0419	<0.00050
	Molybdenum (Mo)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Nickel (Ni)-Dissolved (mg/L)	0.00061	0.00077	0.00076	<0.00050	<0.00050
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	0.160	0.184	<0.050	0.090	<0.050
	Rubidium (Rb)-Dissolved (mg/L)	0.00045	0.00030	0.00020	0.00024	<0.00020
	Selenium (Se)-Dissolved (mg/L)	0.000167	0.000168	0.000184	0.000134	<0.000050
	Silicon (Si)-Dissolved (mg/L)	0.441	0.173	0.197	0.670	<0.050
	Silver (Ag)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Sodium (Na)-Dissolved (mg/L)	3.80	0.556	0.629	4.41	<0.050
	Strontium (Sr)-Dissolved (mg/L)	0.0217	0.0194	0.0166	0.0097	<0.0010
	Sulfur (S)-Dissolved (mg/L)	<0.50	<0.50	<0.50	<0.50	<0.50
	Tellurium (Te)-Dissolved (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Thorium (Th)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium (Ti)-Dissolved (mg/L)	0.00314	0.00309	0.00331	0.00133	<0.00030
	Tungsten (W)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Uranium (U)-Dissolved (mg/L)	0.000034	0.000019	0.000025	<0.000010	<0.000010
	Vanadium (V)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Zinc (Zn)-Dissolved (mg/L)	0.0059	0.0175	0.0080	0.0115	<0.0010
	Zirconium (Zr)-Dissolved (mg/L)	0.00033	0.00029	0.00041	<0.00020	<0.00020
Speciated Metals	Methylmercury (as MeHg)-Total (ug/L)	0.000217	0.000172	0.000233	0.000234	<0.000020

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2711537-6	L2711537-7			
	Description	WATER	WATER			
	Sampled Date	30-MAY-22	30-MAY-22			
	Sampled Time	10:50				
	Client ID	NDR-P-04	CNC-DUP-01			
Grouping	**Analyte**					
WATER						
Dissolved Metals	Lead (Pb)-Dissolved (mg/L)	<0.000050	0.000111			
	Lithium (Li)-Dissolved (mg/L)	<0.0010	<0.0010			
	Magnesium (Mg)-Dissolved (mg/L)	3.73	2.79			
	Manganese (Mn)-Dissolved (mg/L)	0.0157	0.0454			
	Molybdenum (Mo)-Dissolved (mg/L)	<0.000050	0.000054			
	Nickel (Ni)-Dissolved (mg/L)	<0.00050	0.00062			
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050			
	Potassium (K)-Dissolved (mg/L)	0.734	0.155			
	Rubidium (Rb)-Dissolved (mg/L)	0.00076	0.00049			
	Selenium (Se)-Dissolved (mg/L)	<0.000050	0.000148			
	Silicon (Si)-Dissolved (mg/L)	1.08	0.454			
	Silver (Ag)-Dissolved (mg/L)	<0.000050	<0.000050			
	Sodium (Na)-Dissolved (mg/L)	0.571	3.66			
	Strontium (Sr)-Dissolved (mg/L)	0.0219	0.0207			
	Sulfur (S)-Dissolved (mg/L)	<0.50	<0.50			
	Tellurium (Te)-Dissolved (mg/L)	<0.00020	<0.00020			
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010			
	Thorium (Th)-Dissolved (mg/L)	<0.00010	<0.00010			
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010			
	Titanium (Ti)-Dissolved (mg/L)	0.00036	0.00338			
	Tungsten (W)-Dissolved (mg/L)	<0.00010	<0.00010			
	Uranium (U)-Dissolved (mg/L)	<0.000010	0.000035			
	Vanadium (V)-Dissolved (mg/L)	<0.00050	<0.00050			
	Zinc (Zn)-Dissolved (mg/L)	0.0039	0.0053			
	Zirconium (Zr)-Dissolved (mg/L)	<0.00020	0.00034			
Speciated Metals	Methylmercury (as MeHg)-Total (ug/L)	0.000054	0.000230			

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Method Blank	Methylmercury (as MeHg)-Total	B	L2711537-1, -2, -3, -4, -5, -7
Matrix Spike	Mercury (Hg)-Total	MS-B	L2711537-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L2711537-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L2711537-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Magnesium (Mg)-Dissolved	MS-B	L2711537-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Silicon (Si)-Dissolved	MS-B	L2711537-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L2711537-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L2711537-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Sulfur (S)-Dissolved	MS-B	L2711537-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Aluminum (Al)-Total	MS-B	L2711537-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Barium (Ba)-Total	MS-B	L2711537-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Boron (B)-Total	MS-B	L2711537-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Calcium (Ca)-Total	MS-B	L2711537-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Iron (Fe)-Total	MS-B	L2711537-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Magnesium (Mg)-Total	MS-B	L2711537-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Manganese (Mn)-Total	MS-B	L2711537-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Potassium (K)-Total	MS-B	L2711537-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Silicon (Si)-Total	MS-B	L2711537-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Sodium (Na)-Total	MS-B	L2711537-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Strontium (Sr)-Total	MS-B	L2711537-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Sulfur (S)-Total	MS-B	L2711537-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Titanium (Ti)-Total	MS-B	L2711537-1, -2, -3, -4, -5, -6, -7

Qualifiers for Individual Parameters Listed:

Qualifier	Description
B	Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ACIDITY-WT	Water	Acidity (as CaCO3)	APHA 2310 B - Potentiometric Titration
ALK-WT	Water	Alkalinity, Total (as CaCO3)	APHA 2320B

This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint.

BR-IC-N-WT	Water	Bromide in Water by IC	EPA 300.1 (mod)

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

CL-IC-N-WT	Water	Chloride by IC	EPA 300.1 (mod)

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

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

CN-FREE-CFA-WT	Water	Free Cyanide in water by CFA	ASTM 7237

This analysis is carried out using procedures adapted from ASTM Method 7237 "Free Cyanide with Flow Injection Analysis (FIA) Utilizing Gas Diffusion Separation and Amperometric Detection". Free cyanide is determined by in-line gas diffusion at pH 6 with final determination by colourimetric analysis.

CN-TOT-WT	Water	Cyanide, Total	ISO 14403-2

Total cyanide is determined by the combination of UV digestion and distillation. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

Reference Information

When using this method, high levels of thiocyanate in samples can cause false positives at ~1-2% of the thiocyanate concentration. For samples with detectable cyanide analyzed by this method, ALS recommends analysis for thiocyanate to check for this potential interference

CN-WAD-WT	Water	Cyanide, Weak Acid Diss	APHA 4500CN I-Weak acid Dist Colorimet

Weak acid dissociable cyanide (WAD) is determined by undergoing a distillation procedure. Cyanide is converted to cyanogen chloride by reacting with chloramine-T, the cyanogen chloride then reacts with a combination of barbituric acid and isonicotinic acid to form a highly colored complex.

EC-SCREEN-WT	Water	Conductivity Screen (Internal Use Only)	APHA 2510

Qualitative analysis of conductivity where required during preparation of other tests - e.g. TDS, metals, etc.

EC-WT	Water	Conductivity	APHA 2510 B

Water samples can be measured directly by immersing the conductivity cell into the sample.

F-IC-N-WT	Water	Fluoride in Water by IC	EPA 300.1 (mod)

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

HARDNESS-CALC-WT	Water	Hardness	APHA 2340 B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-T-U-CVAF-VA	Water	Total Mercury in Water by CVAFS (Ultra)	EPA 1631 REV. E

This analysis is carried out using procedures adapted from Method 1631 Rev. E. by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to a purge and trap concentration step and final reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry.

MEHG-T-GCAF-VA	Water	Total Methylmercury in Water by GCAFS	EPA 1630 (mod)

This method follows Method 1630 of the US EPA. Samples are distilled under an inert gas flow to isolate methylmercury and minimize matrix interferences. The distillate is analyzed by aqueous phase ethylation, purge and trap, desorption and GC separation. The separated species are then pyrolized to elemental Hg and quantified by cold vapour atomic flourescence spectroscopy. Results are reported "as MeHg".

MET-D-CCMS-WT	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030B/6020A (mod)

Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

MET-T-CCMS-WT	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act (July 1, 2011).

NH3-F-WT	Water	Ammonia in Water by Fluorescence	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NO2-IC-WT	Water	Nitrite in Water by IC	EPA 300.1 (mod)

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

NO3-IC-WT	Water	Nitrate in Water by IC	EPA 300.1 (mod)

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

P-T-COL-WT	Water	Total P in Water by Colour	APHA 4500-P PHOSPHORUS

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorus is deteremined colourimetrically after persulphate digestion of the sample.

PH-WT	Water	pH	APHA 4500 H-Electrode

Water samples are analyzed directly by a calibrated pH meter.

Analysis conducted in accordance with the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the

Reference Information

Environmental Protection Act (July 1, 2011). Holdtime for samples under this regulation is 28 days

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

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

SOLIDS-TDS-WT	Water	Total Dissolved Solids	APHA 2540C

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

SOLIDS-TSS-WT	Water	Suspended solids	APHA 2540 D-Gravimetric

A well-mixed sample is filtered through a weighed standard glass fibre filter and the residue retained is dried in an oven at 104–1°C for a minimum of four hours or until a constant weight is achieved.

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

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

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

20-1000906

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.
mg/kg - milligrams per kilogram based on dry weight of sample.
mg/kg wwt - milligrams per kilogram based on wet weight of sample.
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.
mg/L - milligrams per litre.
< - Less than.
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Quality Control Report

Workorder: L2711537 Report Date: 06-JUL-22

Client: Wood Environment and Infrastructure Solutions Canada Limited
160 Traders Blvd. East, Suite 110
Mississauga ON L4Z 3K7
Contact: Dale Klodnicki

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
ACIDITY-WT	**Water**							
Batch R5793996								
WG3734535-2 LCS								
Acidity (as CaCO3)			110.7		%		85-115	03-JUN-22
WG3734535-1 MB								
Acidity (as CaCO3)			<2.0		mg/L		3	03-JUN-22
ALK-WT	**Water**							
Batch R5793619								
WG3734529-2 LCS								
Alkalinity, Total (as CaCO3)			102.7		%		85-115	02-JUN-22
WG3734529-1 MB								
Alkalinity, Total (as CaCO3)			<1.0		mg/L		1	02-JUN-22
BR-IC-N-WT	**Water**							
Batch R5794631								
WG3735384-7 LCS								
Bromide (Br)			102.3		%		85-115	03-JUN-22
WG3735384-6 MB								
Bromide (Br)			<0.10		mg/L		0.1	03-JUN-22
CL-IC-N-WT	**Water**							
Batch R5794631								
WG3735384-7 LCS								
Chloride (Cl)			99.95		%		90-110	03-JUN-22
WG3735384-6 MB								
Chloride (Cl)			<0.50		mg/L		0.5	03-JUN-22
CN-FREE-CFA-WT	**Water**							
Batch R5795609								
WG3736539-8 DUP		**L2711537-7**						
Cyanide, Free		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	07-JUN-22
WG3736539-2 LCS								
Cyanide, Free			109.7		%		80-120	07-JUN-22
WG3736539-7 LCS								
Cyanide, Free			108.7		%		80-120	07-JUN-22
WG3736539-1 MB								
Cyanide, Free			<0.0020		mg/L		0.002	07-JUN-22
WG3736539-6 MB								
Cyanide, Free			<0.0020		mg/L		0.002	07-JUN-22
WG3736539-9 MS		**L2711537-7**						
Cyanide, Free			106.3		%		75-125	07-JUN-22
CN-TOT-WT	**Water**							

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
CN-TOT-WT	**Water**							
Batch R5795609								
WG3736539-8 DUP		**L2711537-7**						
Cyanide, Total		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	07-JUN-22
WG3736539-2 LCS								
Cyanide, Total			100.1		%		80-120	07-JUN-22
WG3736539-7 LCS								
Cyanide, Total			104.0		%		80-120	07-JUN-22
WG3736539-1 MB								
Cyanide, Total			<0.0020		mg/L		0.002	07-JUN-22
WG3736539-6 MB								
Cyanide, Total			<0.0020		mg/L		0.002	07-JUN-22
WG3736539-9 MS		**L2711537-7**						
Cyanide, Total			88.6		%		70-130	07-JUN-22
CN-WAD-WT	**Water**							
Batch R5795609								
WG3736539-8 DUP		**L2711537-7**						
Cyanide, Weak Acid Diss		<0.0020	<0.0020	RPD-NA	mg/L	N/A	20	07-JUN-22
WG3736539-2 LCS								
Cyanide, Weak Acid Diss			110.3		%		80-120	07-JUN-22
WG3736539-7 LCS								
Cyanide, Weak Acid Diss			108.2		%		80-120	07-JUN-22
WG3736539-1 MB								
Cyanide, Weak Acid Diss			<0.0020		mg/L		0.002	07-JUN-22
WG3736539-6 MB								
Cyanide, Weak Acid Diss			<0.0020		mg/L		0.002	07-JUN-22
WG3736539-9 MS		**L2711537-7**						
Cyanide, Weak Acid Diss			103.4		%		75-125	07-JUN-22
EC-WT	**Water**							
Batch R5793619								
WG3734529-2 LCS								
Conductivity			98.9		%		90-110	02-JUN-22
WG3734529-1 MB								
Conductivity			<1.0		umhos/cm		1	02-JUN-22
F-IC-N-WT	**Water**							
Batch R5794631								
WG3735384-7 LCS								
Fluoride (F)			99.96		%		90-110	03-JUN-22
WG3735384-6 MB								
Fluoride (F)			<0.020		mg/L		0.02	03-JUN-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
HG-T-U-CVAF-VA	**Water**							
Batch R5795684								
WG3736674-2 LCS								
Mercury (Hg)-Total			99.6		%		80-120	08-JUN-22
WG3736674-1 MB								
Mercury (Hg)-Total			<0.00050		ug/L		0.0005	08-JUN-22
WG3736674-4 MS		**L2711537-3**						
Mercury (Hg)-Total			N/A	MS-B	%		-	08-JUN-22
MEHG-T-GCAF-VA	**Water**							
Batch R5813123								
WG3746285-3 LCS								
Methylmercury (as MeHg)-Total			81.8		%		70-130	04-JUL-22
WG3746683-3 LCS								
Methylmercury (as MeHg)-Total			81.8		%		70-130	05-JUL-22
WG3746285-1 MB								
Methylmercury (as MeHg)-Total			0.000033	B	ug/L		0.00002	04-JUL-22
WG3746683-1 MB								
Methylmercury (as MeHg)-Total			<0.000020		ug/L		0.00002	05-JUL-22
MET-D-CCMS-WT	**Water**							
Batch R5794024								
WG3734941-2 LCS								
Aluminum (Al)-Dissolved			105.2		%		80-120	03-JUN-22
Antimony (Sb)-Dissolved			98.6		%		80-120	03-JUN-22
Arsenic (As)-Dissolved			97.4		%		80-120	03-JUN-22
Barium (Ba)-Dissolved			104.5		%		80-120	03-JUN-22
Beryllium (Be)-Dissolved			99.9		%		80-120	03-JUN-22
Bismuth (Bi)-Dissolved			103.1		%		80-120	03-JUN-22
Boron (B)-Dissolved			98.7		%		80-120	03-JUN-22
Cadmium (Cd)-Dissolved			97.3		%		80-120	03-JUN-22
Calcium (Ca)-Dissolved			105.7		%		80-120	03-JUN-22
Cesium (Cs)-Dissolved			106.8		%		80-120	03-JUN-22
Chromium (Cr)-Dissolved			102.0		%		80-120	03-JUN-22
Cobalt (Co)-Dissolved			101.2		%		80-120	03-JUN-22
Copper (Cu)-Dissolved			98.3		%		80-120	03-JUN-22
Iron (Fe)-Dissolved			101.6		%		80-120	03-JUN-22
Lead (Pb)-Dissolved			104.6		%		80-120	03-JUN-22
Lithium (Li)-Dissolved			104.8		%		80-120	03-JUN-22
Magnesium (Mg)-Dissolved			102.4		%		80-120	03-JUN-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WT	**Water**							
Batch R5794024								
WG3734941-2 LCS								
Manganese (Mn)-Dissolved			102.7		%		80-120	03-JUN-22
Molybdenum (Mo)-Dissolved			103.3		%		80-120	03-JUN-22
Nickel (Ni)-Dissolved			100.3		%		80-120	03-JUN-22
Phosphorus (P)-Dissolved			101.2		%		80-120	03-JUN-22
Potassium (K)-Dissolved			98.9		%		80-120	03-JUN-22
Rubidium (Rb)-Dissolved			104.4		%		80-120	03-JUN-22
Selenium (Se)-Dissolved			90.2		%		80-120	03-JUN-22
Silicon (Si)-Dissolved			100.6		%		60-140	03-JUN-22
Silver (Ag)-Dissolved			102.1		%		80-120	03-JUN-22
Sodium (Na)-Dissolved			104.7		%		80-120	03-JUN-22
Strontium (Sr)-Dissolved			108.5		%		80-120	03-JUN-22
Sulfur (S)-Dissolved			99.4		%		80-120	03-JUN-22
Tellurium (Te)-Dissolved			88.3		%		80-120	03-JUN-22
Thallium (Tl)-Dissolved			105.8		%		80-120	03-JUN-22
Thorium (Th)-Dissolved			107.3		%		80-120	03-JUN-22
Tin (Sn)-Dissolved			102.1		%		80-120	03-JUN-22
Titanium (Ti)-Dissolved			102.8		%		80-120	03-JUN-22
Tungsten (W)-Dissolved			103.4		%		80-120	03-JUN-22
Uranium (U)-Dissolved			104.7		%		80-120	03-JUN-22
Vanadium (V)-Dissolved			104.1		%		80-120	03-JUN-22
Zinc (Zn)-Dissolved			95.0		%		80-120	03-JUN-22
Zirconium (Zr)-Dissolved			102.1		%		80-120	03-JUN-22
WG3734941-1 MB								
Aluminum (Al)-Dissolved			<0.0050		mg/L		0.005	03-JUN-22
Antimony (Sb)-Dissolved			<0.00010		mg/L		0.0001	03-JUN-22
Arsenic (As)-Dissolved			<0.00010		mg/L		0.0001	03-JUN-22
Barium (Ba)-Dissolved			<0.00010		mg/L		0.0001	03-JUN-22
Beryllium (Be)-Dissolved			<0.00010		mg/L		0.0001	03-JUN-22
Bismuth (Bi)-Dissolved			<0.000050		mg/L		0.00005	03-JUN-22
Boron (B)-Dissolved			<0.010		mg/L		0.01	03-JUN-22
Cadmium (Cd)-Dissolved			<0.000005C		mg/L		0.000005	03-JUN-22
Calcium (Ca)-Dissolved			<0.050		mg/L		0.05	03-JUN-22
Cesium (Cs)-Dissolved			<0.000010		mg/L		0.00001	03-JUN-22
Chromium (Cr)-Dissolved			<0.00050		mg/L		0.0005	03-JUN-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-D-CCMS-WT	**Water**							
Batch R5794024								
WG3734941-1 MB								
Cobalt (Co)-Dissolved			<0.00010		mg/L		0.0001	03-JUN-22
Copper (Cu)-Dissolved			<0.00020		mg/L		0.0002	03-JUN-22
Iron (Fe)-Dissolved			<0.010		mg/L		0.01	03-JUN-22
Lead (Pb)-Dissolved			<0.000050		mg/L		0.00005	03-JUN-22
Lithium (Li)-Dissolved			<0.0010		mg/L		0.001	03-JUN-22
Magnesium (Mg)-Dissolved			<0.0050		mg/L		0.005	03-JUN-22
Manganese (Mn)-Dissolved			<0.00050		mg/L		0.0005	03-JUN-22
Molybdenum (Mo)-Dissolved			<0.000050		mg/L		0.00005	03-JUN-22
Nickel (Ni)-Dissolved			<0.00050		mg/L		0.0005	03-JUN-22
Phosphorus (P)-Dissolved			<0.050		mg/L		0.05	03-JUN-22
Potassium (K)-Dissolved			<0.050		mg/L		0.05	03-JUN-22
Rubidium (Rb)-Dissolved			<0.00020		mg/L		0.0002	03-JUN-22
Selenium (Se)-Dissolved			<0.000050		mg/L		0.00005	03-JUN-22
Silicon (Si)-Dissolved			<0.050		mg/L		0.05	03-JUN-22
Silver (Ag)-Dissolved			<0.000050		mg/L		0.00005	03-JUN-22
Sodium (Na)-Dissolved			<0.050		mg/L		0.05	03-JUN-22
Strontium (Sr)-Dissolved			<0.0010		mg/L		0.001	03-JUN-22
Sulfur (S)-Dissolved			<0.50		mg/L		0.5	03-JUN-22
Tellurium (Te)-Dissolved			<0.00020		mg/L		0.0002	03-JUN-22
Thallium (Tl)-Dissolved			<0.000010		mg/L		0.00001	03-JUN-22
Thorium (Th)-Dissolved			<0.00010		mg/L		0.0001	03-JUN-22
Tin (Sn)-Dissolved			<0.00010		mg/L		0.0001	03-JUN-22
Titanium (Ti)-Dissolved			<0.00030		mg/L		0.0003	03-JUN-22
Tungsten (W)-Dissolved			<0.00010		mg/L		0.0001	03-JUN-22
Uranium (U)-Dissolved			<0.000010		mg/L		0.00001	03-JUN-22
Vanadium (V)-Dissolved			<0.00050		mg/L		0.0005	03-JUN-22
Zinc (Zn)-Dissolved			<0.0010		mg/L		0.001	03-JUN-22
Zirconium (Zr)-Dissolved			<0.00020		mg/L		0.0002	03-JUN-22
MET-T-CCMS-WT	**Water**							
Batch R5794253								
WG3734405-2 LCS								
Aluminum (Al)-Total			102.1		%		80-120	03-JUN-22
Antimony (Sb)-Total			98.7		%		80-120	03-JUN-22
Arsenic (As)-Total			101.9		%		80-120	03-JUN-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5794253								
WG3734405-2 LCS								
Barium (Ba)-Total			102.1		%		80-120	03-JUN-22
Beryllium (Be)-Total			97.2		%		80-120	03-JUN-22
Bismuth (Bi)-Total			97.8		%		80-120	03-JUN-22
Boron (B)-Total			90.7		%		80-120	03-JUN-22
Cadmium (Cd)-Total			100.9		%		80-120	03-JUN-22
Calcium (Ca)-Total			96.7		%		80-120	03-JUN-22
Chromium (Cr)-Total			101.6		%		80-120	03-JUN-22
Cesium (Cs)-Total			98.6		%		80-120	03-JUN-22
Cobalt (Co)-Total			100.8		%		80-120	03-JUN-22
Copper (Cu)-Total			100.2		%		80-120	03-JUN-22
Iron (Fe)-Total			101.2		%		80-120	03-JUN-22
Lead (Pb)-Total			96.1		%		80-120	03-JUN-22
Lithium (Li)-Total			92.0		%		80-120	03-JUN-22
Magnesium (Mg)-Total			103.7		%		80-120	03-JUN-22
Manganese (Mn)-Total			98.7		%		80-120	03-JUN-22
Molybdenum (Mo)-Total			98.3		%		80-120	03-JUN-22
Nickel (Ni)-Total			101.7		%		80-120	03-JUN-22
Phosphorus (P)-Total			103.6		%		70-130	03-JUN-22
Potassium (K)-Total			101.9		%		80-120	03-JUN-22
Rubidium (Rb)-Total			101.8		%		80-120	03-JUN-22
Selenium (Se)-Total			98.6		%		80-120	03-JUN-22
Silicon (Si)-Total			103.7		%		60-140	03-JUN-22
Silver (Ag)-Total			94.2		%		80-120	03-JUN-22
Sodium (Na)-Total			107.1		%		80-120	03-JUN-22
Strontium (Sr)-Total			98.7		%		80-120	03-JUN-22
Sulfur (S)-Total			95.7		%		80-120	03-JUN-22
Thallium (Tl)-Total			97.3		%		80-120	03-JUN-22
Tellurium (Te)-Total			95.6		%		80-120	03-JUN-22
Thorium (Th)-Total			95.0		%		80-120	03-JUN-22
Tin (Sn)-Total			99.5		%		80-120	03-JUN-22
Titanium (Ti)-Total			95.8		%		80-120	03-JUN-22
Tungsten (W)-Total			94.0		%		80-120	03-JUN-22
Uranium (U)-Total			99.2		%		80-120	03-JUN-22
Vanadium (V)-Total			103.4		%		80-120	03-JUN-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5794253								
WG3734405-2 LCS								
Zinc (Zn)-Total			101.2		%		80-120	03-JUN-22
Zirconium (Zr)-Total			94.1		%		80-120	03-JUN-22
WG3734405-1 MB								
Aluminum (Al)-Total			<0.0050		mg/L		0.005	03-JUN-22
Antimony (Sb)-Total			<0.00010		mg/L		0.0001	03-JUN-22
Arsenic (As)-Total			<0.00010		mg/L		0.0001	03-JUN-22
Barium (Ba)-Total			<0.00010		mg/L		0.0001	03-JUN-22
Beryllium (Be)-Total			<0.00010		mg/L		0.0001	03-JUN-22
Bismuth (Bi)-Total			<0.000050		mg/L		0.00005	03-JUN-22
Boron (B)-Total			<0.010		mg/L		0.01	03-JUN-22
Cadmium (Cd)-Total			<0.000005C		mg/L		0.000005	03-JUN-22
Calcium (Ca)-Total			<0.050		mg/L		0.05	03-JUN-22
Chromium (Cr)-Total			<0.00050		mg/L		0.0005	03-JUN-22
Cesium (Cs)-Total			<0.000010		mg/L		0.00001	03-JUN-22
Cobalt (Co)-Total			<0.00010		mg/L		0.0001	03-JUN-22
Copper (Cu)-Total			<0.00050		mg/L		0.0005	03-JUN-22
Iron (Fe)-Total			<0.010		mg/L		0.01	03-JUN-22
Lead (Pb)-Total			<0.000050		mg/L		0.00005	03-JUN-22
Lithium (Li)-Total			<0.0010		mg/L		0.001	03-JUN-22
Magnesium (Mg)-Total			<0.0050		mg/L		0.005	03-JUN-22
Manganese (Mn)-Total			<0.00050		mg/L		0.0005	03-JUN-22
Molybdenum (Mo)-Total			<0.000050		mg/L		0.00005	03-JUN-22
Nickel (Ni)-Total			<0.00050		mg/L		0.0005	06-JUN-22
Phosphorus (P)-Total			<0.050		mg/L		0.05	03-JUN-22
Potassium (K)-Total			<0.050		mg/L		0.05	03-JUN-22
Rubidium (Rb)-Total			<0.00020		mg/L		0.0002	03-JUN-22
Selenium (Se)-Total			<0.000050		mg/L		0.00005	03-JUN-22
Silicon (Si)-Total			<0.10		mg/L		0.1	03-JUN-22
Silver (Ag)-Total			<0.000050		mg/L		0.00005	03-JUN-22
Sodium (Na)-Total			<0.050		mg/L		0.05	03-JUN-22
Strontium (Sr)-Total			<0.0010		mg/L		0.001	03-JUN-22
Sulfur (S)-Total			<0.50		mg/L		0.5	03-JUN-22
Thallium (Tl)-Total			<0.000010		mg/L		0.00001	03-JUN-22
Tellurium (Te)-Total			<0.00020		mg/L		0.0002	03-JUN-22

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
MET-T-CCMS-WT	**Water**							
Batch R5794253								
WG3734405-1 MB								
Thorium (Th)-Total			<0.00010		mg/L		0.0001	03-JUN-22
Tin (Sn)-Total			<0.00010		mg/L		0.0001	03-JUN-22
Titanium (Ti)-Total			<0.00030		mg/L		0.0003	03-JUN-22
Tungsten (W)-Total			<0.00010		mg/L		0.0001	03-JUN-22
Uranium (U)-Total			<0.000010		mg/L		0.00001	03-JUN-22
Vanadium (V)-Total			<0.00050		mg/L		0.0005	03-JUN-22
Zinc (Zn)-Total			<0.0030		mg/L		0.003	03-JUN-22
Zirconium (Zr)-Total			<0.00020		mg/L		0.0002	03-JUN-22
NH3-F-WT	**Water**							
Batch R5794479								
WG3735067-2 LCS								
Ammonia, Total (as N)			102.2		%		85-115	03-JUN-22
WG3735067-1 MB								
Ammonia, Total (as N)			<0.010		mg/L		0.01	03-JUN-22
Batch R5794490								
WG3734685-2 LCS								
Ammonia, Total (as N)			101.0		%		85-115	03-JUN-22
WG3734685-1 MB								
Ammonia, Total (as N)			<0.010		mg/L		0.01	03-JUN-22
NO2-IC-WT	**Water**							
Batch R5794631								
WG3735384-7 LCS								
Nitrite (as N)			99.5		%		90-110	03-JUN-22
WG3735384-6 MB								
Nitrite (as N)			<0.010		mg/L		0.01	03-JUN-22
NO3-IC-WT	**Water**							
Batch R5794631								
WG3735384-7 LCS								
Nitrate (as N)			98.9		%		90-110	03-JUN-22
WG3735384-6 MB								
Nitrate (as N)			<0.020		mg/L		0.02	03-JUN-22
P-T-COL-WT	**Water**							
Batch R5795152								
WG3734670-2 LCS								
Phosphorus, Total			99.5		%		80-120	07-JUN-22
WG3735070-2 LCS								

Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
P-T-COL-WT	**Water**							
Batch R5795152								
WG3735070-2 LCS								
Phosphorus, Total			99.2		%		80-120	07-JUN-22
WG3734670-1 MB								
Phosphorus, Total			<0.0030		mg/L		0.003	07-JUN-22
WG3735070-1 MB								
Phosphorus, Total			<0.0030		mg/L		0.003	07-JUN-22
PH-WT	**Water**							
Batch R5793619								
WG3734529-2 LCS								
pH			7.06		pH units		6.9-7.1	02-JUN-22
SO4-IC-N-WT	**Water**							
Batch R5794631								
WG3735384-7 LCS								
Sulfate (SO4)			100.6		%		90-110	03-JUN-22
WG3735384-6 MB								
Sulfate (SO4)			<0.30		mg/L		0.3	03-JUN-22
SOLIDS-TDS-WT	**Water**							
Batch R5795255								
WG3735212-2 LCS								
Total Dissolved Solids			87.0		%		85-115	03-JUN-22
WG3735212-1 MB								
Total Dissolved Solids			<10		mg/L		10	03-JUN-22
SOLIDS-TSS-WT	**Water**							
Batch R5795258								
WG3735213-2 LCS								
Total Suspended Solids			109.0		%		85-115	04-JUN-22
WG3735213-1 MB								
Total Suspended Solids			<3.0		mg/L		3	04-JUN-22

Legend:

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

Sample Parameter Qualifier Definitions:

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

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

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

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

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

L2711537-COFC

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

COC Number: 20 - 1000906

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	WOOD PLC
Contact:	DALE KLODNICKI
Phone:	647-993-4293
Company address below will appear on the final report	
Street:	2020 Winston Park Dr, Suite 600
City/Province:	Oakville ON
Postal Code:	L6H 6X7
Invoice To	Same as Report To ☒ YES ☐ NO
	Copy of Invoice with Report ☒ YES ☐ NO
Company:	
Contact:	

Reports / Recipients

Select Report Format: ☐ PDF ☐ EXCEL ☐ EDD (DIGITAL)

Merge QC/QCI Reports with COA ☐ YES ☐ NO ☐ N/A

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: dale.klodnicki@woodplc.com

Email 2:

Email 3:

Invoice Recipients

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: dale.klodnicki@woodplc.com

Email 2:

Turnaround Time (TAT) Requested

☐ Routine [R] if received by 3pm M-F - no surcharges apply

☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum

☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum

☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum

☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum

☐ Same day [E2] if received by 10am M-S - 200% rush surcharge. Additional fees may apply to rush requests on weekends, statutory holidays and non-routine tests

AFFIX ALS BARCODE LABEL HERE (ALS use only)

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For all tests with rush TATs requested, please contact your AM to confirm availability.

Project Information

ALS Account # / Quote #:	21500
Job #:	OMEMA2002
PO / AFE:	—
LSD:	—
ALS Lab Work Order # (ALS use only):	L2711537

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	
ALS Contact:	Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	CN	DISSOLVED METALS (F)	Gen Chem (F)	Low T Mercury (F)	Metals	Mans	NH3/TP	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	NDR-S-04	30-MAY-22	11:45	SW	7	1	1	1	1	1	1	1			
	NDR-P-01	29-MAY-22	14:00												
	NDR-S-01	"	13:15												
	JC-S-01	"	10:30												
	TRIP BLANK	"	—												
	NDR-P-04	30 MAY 22	10:50												
	CNC-DUP-01	30MAY22	—												

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☒ NO

Are samples for human consumption/ use? ☐ YES ☒ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

NDR-P-01 Diss. Metals needs preservative

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☐ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				21.4			

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
R. Nibbley	30MAY2022	15:45

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:
BB	June 1/22	12:30

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

ADC 2020 FRONT

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

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

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WT2204941**	Page	: 1 of 6
Client	: **Wood Canada Ltd.**	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 2020 Winston Park Drive Suite 600 Mississauga ON Canada L6H 6X7	Address	: 60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2002	Date Samples Received	: 03-Jun-2022 09:30
PO	: ----	Date Analysis Commenced	: 04-Jun-2022
C-O-C number	: 20-1000904	Issue Date	: 20-Jun-2022 11:39
Sampler	: CLIENT		
Site	: ----		
Quote number	: OMEMA2002		
No. of samples received	: 5		
No. of samples analysed	: 5		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Caleb Deroche	Lab Analyst	Metals, Burnaby, British Columbia
Greg Pokocky	Supervisor - Inorganic	Inorganics, Waterloo, Ontario
Jon Fisher	Department Manager - Inorganics	Inorganics, Waterloo, Ontario
Jon Fisher	Department Manager - Inorganics	Metals, Waterloo, Ontario
Kinny Wu	Lab Analyst	Metals, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
mg/L	milligrams per litre
ng/L	nanograms per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

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

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	*Description*
DLDS	*Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.*

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-P-07	NDR-S-06	NDR-S-05	NDR-1-02	NDR-C40R
					Client sampling date / time	01-Jun-2022 10:00	01-Jun-2022 12:00	01-Jun-2022 11:00	31-May-2022 15:10	01-Jun-2022 08:40
						WT2204941-001	WT2204941-002	WT2204941-003	WT2204941-004	WT2204941-005
						Result	Result	Result	Result	Result
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L		5.0	4.7	5.3	<2.0	2.7
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		6.6	7.1	7.2	127	34.6
conductivity	----	E100	1.0	µS/cm		27.6	26.8	27.1	228	77.6
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L		20.6	18.6	18.2	107	42.0
pH	----	E108	0.10	pH units		6.15	6.45	6.41	8.36	7.44
solids, total dissolved [TDS]	----	E162	10	mg/L		70	44	45	120 DLDS	102 DLDS
solids, total suspended [TSS]	----	E160	3.0	mg/L		<3.0	<3.0	8.0	<3.0	12.8
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		0.0095	<0.0050	0.0053	<0.0050	0.0249
chloride	16887-00-6	E235.Cl	0.50	mg/L		<0.50	<0.50	<0.50	<0.50	3.12
fluoride	16984-48-8	E235.F	0.020	mg/L		<0.020	<0.020	<0.020	<0.020	<0.020
nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L		<0.020	<0.020	<0.020	<0.020	<0.020
nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L		0.0106	0.0160	0.0215	0.0083	0.0289
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		<0.30	<0.30	<0.30	<0.30	<0.30
Cyanides										
cyanide, free	----	E339	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
cyanide, strong acid dissociable (total)	----	E333	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
cyanide, weak acid dissociable	----	E336	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L		0.0921	0.105	0.161	0.0226	0.560
antimony, total	7440-36-0	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
arsenic, total	7440-38-2	E420	0.00010	mg/L		0.00076	0.00062	0.00066	0.00059	0.00094
barium, total	7440-39-3	E420	0.00010	mg/L		0.00253	0.00276	0.00413	0.00247	0.00841
beryllium, total	7440-41-7	E420	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	0.000027
bismuth, total	7440-69-9	E420	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, total	7440-42-8	E420	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
cadmium, total	7440-43-9	E420	0.0000050	mg/L		0.0000242	0.0000158	0.0000209	0.0000066	0.0000293
calcium, total	7440-70-2	E420	0.050	mg/L		4.94	4.80	4.86	36.1	11.4
cesium, total	7440-46-2	E420	0.000010	mg/L		<0.000010	<0.000010	0.000015	<0.000010	0.000051

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-P-07	NDR-S-06	NDR-S-05	NDR-1-02	NDR-C40R
					Client sampling date / time	01-Jun-2022 10:00	01-Jun-2022 12:00	01-Jun-2022 11:00	31-May-2022 15:10	01-Jun-2022 08:40
						WT2204941-001	WT2204941-002	WT2204941-003	WT2204941-004	WT2204941-005
						Result	Result	Result	Result	Result
Total Metals										
chromium, total	7440-47-3	E420	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	0.00138
cobalt, total	7440-48-4	E420	0.00010	mg/L		<0.00010	0.00011	0.00016	<0.00010	0.00034
copper, total	7440-50-8	E420	0.00050	mg/L		0.00066	<0.00050	0.00078	<0.00050	0.00179
iron, total	7439-89-6	E420	0.010	mg/L		0.239	0.278	0.302	0.081	0.773
lead, total	7439-92-1	E420	0.000050	mg/L		0.000488	0.000263	0.000459	<0.000050	0.000369
lithium, total	7439-93-2	E420	0.0010	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
magnesium, total	7439-95-4	E420	0.0050	mg/L		1.69	1.56	1.52	4.64	3.35
manganese, total	7439-96-5	E420	0.00010	mg/L		0.0248	0.0262	0.0300	0.0216	0.0833
mercury, total	7439-97-6	E508-L	0.50	ng/L		0.60	0.73	<0.50	<0.50	1.51
molybdenum, total	7439-98-7	E420	0.000050	mg/L		<0.000050	<0.000050	<0.000050	0.000281	0.000062
nickel, total	7440-02-0	E420	0.00050	mg/L		0.00055	<0.00050	0.00057	<0.00050	0.00144
phosphorus, total	7723-14-0	E420	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
potassium, total	7440-09-7	E420	0.050	mg/L		0.085	0.080	0.153	2.16	0.523
rubidium, total	7440-17-7	E420	0.00020	mg/L		0.00037	0.00034	0.00060	0.00175	0.00157
selenium, total	7782-49-2	E420	0.000050	mg/L		0.000120	0.000090	0.000114	<0.000050	0.000142
silicon, total	7440-21-3	E420	0.10	mg/L		0.38	0.16	0.36	0.58	1.27
silver, total	7440-22-4	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, total	7440-23-5	E420	0.050	mg/L		0.424	0.279	0.697	0.326	2.87
strontium, total	7440-24-6	E420	0.00020	mg/L		0.00914	0.00938	0.00932	0.0183	0.0218
sulfur, total	7704-34-9	E420	0.50	mg/L		<0.50	<0.50	<0.50	<0.50	<0.50
tellurium, total	13494-80-9	E420	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
thallium, total	7440-28-0	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
thorium, total	7440-29-1	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	0.00011
tin, total	7440-31-5	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, total	7440-32-6	E420	0.00030	mg/L		0.00160	0.00221	0.00496	0.00089	0.0216
tungsten, total	7440-33-7	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
uranium, total	7440-61-1	E420	0.000010	mg/L		<0.000010	0.000013	0.000020	0.000014	0.000050
vanadium, total	7440-62-2	E420	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	0.00134
zinc, total	7440-66-6	E420	0.0030	mg/L		0.0065	0.0058	0.0114	<0.0030	0.0232
zirconium, total	7440-67-7	E420	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	0.00055
Dissolved Metals										

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-P-07	NDR-S-06	NDR-S-05	NDR-1-02	NDR-C40R
					Client sampling date / time	01-Jun-2022 10:00	01-Jun-2022 12:00	01-Jun-2022 11:00	31-May-2022 15:10	01-Jun-2022 08:40
						WT2204941-001	WT2204941-002	WT2204941-003	WT2204941-004	WT2204941-005
						Result	Result	Result	Result	Result
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.0902	0.105	0.103	0.0031	0.156
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00081	0.00059	0.00067	0.00066	0.00088
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.00332	0.00241	0.00288	0.00211	0.00569
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, dissolved	7440-42-8	E421	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		0.0000230	0.0000152	0.0000179	<0.0000050	0.0000179
calcium, dissolved	7440-70-2	E421	0.050	mg/L		5.25	4.86	4.73	34.8	11.4
cesium, dissolved	7440-46-2	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	0.00011
copper, dissolved	7440-50-8	E421	0.00020	mg/L		0.00105	0.00038	0.00049	<0.00020	0.00110
iron, dissolved	7439-89-6	E421	0.010	mg/L		0.222	0.259	0.238	0.032	0.333
lead, dissolved	7439-92-1	E421	0.000050	mg/L		0.000445	0.000238	0.000315	<0.000050	0.000112
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L		1.82	1.56	1.56	4.95	3.28
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.0238	0.0240	0.0229	0.00913	0.0801
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	0.000250	0.000052
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	0.00056
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
potassium, dissolved	7440-09-7	E421	0.050	mg/L		0.148	0.084	0.124	2.39	0.203
rubidium, dissolved	7440-17-7	E421	0.00020	mg/L		0.00036	0.00034	0.00046	0.00164	0.00062
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.000164	0.000126	0.000132	0.000051	0.000172
silicon, dissolved	7440-21-3	E421	0.050	mg/L		0.447	0.124	0.162	0.545	0.528
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, dissolved	7440-23-5	E421	0.050	mg/L		0.825	0.323	0.350	0.361	2.73
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		0.00964	0.00916	0.00830	0.0173	0.0199
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		<0.50	<0.50	<0.50	<0.50	<0.50
tellurium, dissolved	13494-80-9	E421	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID: NDR-P-07	NDR-S-06	NDR-S-05	NDR-1-02	NDR-C40R
					Client sampling date / time: 01-Jun-2022 10:00	01-Jun-2022 12:00	01-Jun-2022 11:00	31-May-2022 15:10	01-Jun-2022 08:40
					WT2204941-001	WT2204941-002	WT2204941-003	WT2204941-004	WT2204941-005
					Result	Result	Result	Result	Result
Dissolved Metals									
thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	0.00144	0.00178	0.00202	<0.00030	0.00400
tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000014	0.000013	0.000012	0.000014	0.000038
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	0.00058
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0107	0.0061	0.0105	0.0025	0.0045
zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	0.00034
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field
Speciated Metals									
methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L	0.000237	0.000102	0.000110	0.000096	0.000197

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2204941**	Page	: 1 of 19
Client	: **Wood Canada Ltd.**	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 2020 Winston Park Drive Suite 600 Mississauga ON Canada L6H 6X7	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2002	Date Samples Received	: 03-Jun-2022 09:30
PO	: ----	Issue Date	: 20-Jun-2022 11:39
C-O-C number	: 20-1000904		
Sampler	: CLIENT		
Site	: ----		
Quote number	: OMEMA2002		
No. of samples received	: 5		
No. of samples analysed	: 5		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) NDR-C40R	E298	01-Jun-2022	06-Jun-2022	----	----		06-Jun-2022	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) NDR-P-07	E298	01-Jun-2022	06-Jun-2022	----	----		06-Jun-2022	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) NDR-S-05	E298	01-Jun-2022	06-Jun-2022	----	----		06-Jun-2022	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) NDR-S-06	E298	01-Jun-2022	06-Jun-2022	----	----		06-Jun-2022	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) NDR-1-02	E298	31-May-2022	06-Jun-2022	----	----		06-Jun-2022	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-C40R	E235.Cl	01-Jun-2022	----	----	----		06-Jun-2022	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-P-07	E235.Cl	01-Jun-2022	----	----	----		06-Jun-2022	28 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-S-05	E235.Cl	01-Jun-2022	----	----	----		06-Jun-2022	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-S-06	E235.Cl	01-Jun-2022	----	----	----		06-Jun-2022	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-1-02	E235.Cl	31-May-2022	----	----	----		06-Jun-2022	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-C40R	E235.F	01-Jun-2022	----	----	----		06-Jun-2022	28 days	5 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-P-07	E235.F	01-Jun-2022	----	----	----		06-Jun-2022	28 days	5 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-S-05	E235.F	01-Jun-2022	----	----	----		06-Jun-2022	28 days	5 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-S-06	E235.F	01-Jun-2022	----	----	----		06-Jun-2022	28 days	5 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-1-02	E235.F	31-May-2022	----	----	----		06-Jun-2022	28 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-C40R	E235.NO3	01-Jun-2022	----	----	----		06-Jun-2022	7 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-P-07	E235.NO3	01-Jun-2022	----	----	----		06-Jun-2022	7 days	5 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-S-05	E235.NO3	01-Jun-2022	----	----	----		06-Jun-2022	7 days	5 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-S-06	E235.NO3	01-Jun-2022	----	----	----		06-Jun-2022	7 days	5 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-1-02	E235.NO3	31-May-2022	----	----	----		06-Jun-2022	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-C40R	E235.NO2	01-Jun-2022	----	----	----		06-Jun-2022	7 days	5 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-P-07	E235.NO2	01-Jun-2022	----	----	----		06-Jun-2022	7 days	5 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-S-05	E235.NO2	01-Jun-2022	----	----	----		06-Jun-2022	7 days	5 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-S-06	E235.NO2	01-Jun-2022	----	----	----		06-Jun-2022	7 days	5 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-1-02	E235.NO2	31-May-2022	----	----	----		06-Jun-2022	7 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDR-C40R	E235.SO4	01-Jun-2022	----	----	----		06-Jun-2022	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDR-P-07	E235.SO4	01-Jun-2022	----	----	----		06-Jun-2022	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDR-S-05	E235.SO4	01-Jun-2022	----	----	----		06-Jun-2022	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDR-S-06	E235.SO4	01-Jun-2022	----	----	----		06-Jun-2022	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDR-1-02	E235.SO4	31-May-2022	----	----	----		06-Jun-2022	28 days	6 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) NDR-C40R	E372-U	01-Jun-2022	07-Jun-2022	----	----		08-Jun-2022	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) NDR-P-07	E372-U	01-Jun-2022	07-Jun-2022	----	----		08-Jun-2022	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) NDR-S-05	E372-U	01-Jun-2022	07-Jun-2022	----	----		08-Jun-2022	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) NDR-S-06	E372-U	01-Jun-2022	07-Jun-2022	----	----		08-Jun-2022	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
NDR-1-02	E372-U	31-May-2022	07-Jun-2022	----	----		08-Jun-2022	28 days	8 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
NDR-1-02	E339	31-May-2022	----	----	----		10-Jun-2022	14 days	10 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
NDR-C40R	E339	01-Jun-2022	----	----	----		10-Jun-2022	14 days	9 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
NDR-P-07	E339	01-Jun-2022	----	----	----		10-Jun-2022	14 days	9 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
NDR-S-05	E339	01-Jun-2022	----	----	----		10-Jun-2022	14 days	9 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
NDR-S-06	E339	01-Jun-2022	----	----	----		10-Jun-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide)										
NDR-1-02	E333	31-May-2022	----	----	----		10-Jun-2022	14 days	10 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide)										
NDR-C40R	E333	01-Jun-2022	----	----	----		10-Jun-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide)										
NDR-P-07	E333	01-Jun-2022	----	----	----		10-Jun-2022	14 days	9 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide) NDR-S-05	E333	01-Jun-2022	----	----	----		10-Jun-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide) NDR-S-06	E333	01-Jun-2022	----	----	----		10-Jun-2022	14 days	9 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) NDR-1-02	E336	31-May-2022	----	----	----		10-Jun-2022	14 days	10 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) NDR-C40R	E336	01-Jun-2022	----	----	----		10-Jun-2022	14 days	9 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) NDR-P-07	E336	01-Jun-2022	----	----	----		10-Jun-2022	14 days	9 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) NDR-S-05	E336	01-Jun-2022	----	----	----		10-Jun-2022	14 days	9 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) NDR-S-06	E336	01-Jun-2022	----	----	----		10-Jun-2022	14 days	9 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDR-C40R	E421	01-Jun-2022	06-Jun-2022	----	----		08-Jun-2022	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDR-P-07	E421	01-Jun-2022	06-Jun-2022	----	----		08-Jun-2022	180 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDR-S-05	E421	01-Jun-2022	06-Jun-2022	----	----		08-Jun-2022	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDR-S-06	E421	01-Jun-2022	06-Jun-2022	----	----		08-Jun-2022	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDR-1-02	E421	31-May-2022	06-Jun-2022	----	----		08-Jun-2022	180 days	8 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-C40R	E283	01-Jun-2022	----	----	----		11-Jun-2022	14 days	10 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-P-07	E283	01-Jun-2022	----	----	----		11-Jun-2022	14 days	10 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-S-05	E283	01-Jun-2022	----	----	----		11-Jun-2022	14 days	10 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-S-06	E283	01-Jun-2022	----	----	----		11-Jun-2022	14 days	10 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-1-02	E283	31-May-2022	----	----	----		11-Jun-2022	14 days	11 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-C40R	E290	01-Jun-2022	----	----	----		04-Jun-2022	14 days	3 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-P-07	E290	01-Jun-2022	----	----	----		04-Jun-2022	14 days	3 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-S-05	E290	01-Jun-2022	----	----	----		04-Jun-2022	14 days	3 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-S-06	E290	01-Jun-2022	----	----	----		04-Jun-2022	14 days	3 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-1-02	E290	31-May-2022	----	----	----		04-Jun-2022	14 days	4 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-C40R	E100	01-Jun-2022	----	----	----		04-Jun-2022	28 days	3 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-P-07	E100	01-Jun-2022	----	----	----		04-Jun-2022	28 days	3 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-S-05	E100	01-Jun-2022	----	----	----		04-Jun-2022	28 days	3 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-S-06	E100	01-Jun-2022	----	----	----		04-Jun-2022	28 days	3 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-1-02	E100	31-May-2022	----	----	----		04-Jun-2022	28 days	4 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-C40R	E108	01-Jun-2022	----	----	----		04-Jun-2022	4 days	3 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-P-07	E108	01-Jun-2022	----	----	----		04-Jun-2022	4 days	3 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-S-05	E108	01-Jun-2022	----	----	----		04-Jun-2022	4 days	3 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-S-06	E108	01-Jun-2022	----	----	----		04-Jun-2022	4 days	3 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-1-02	E108	31-May-2022	----	----	----		04-Jun-2022	4 days	4 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-C40R	E162	01-Jun-2022	----	----	----		06-Jun-2022	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-P-07	E162	01-Jun-2022	----	----	----		06-Jun-2022	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-S-05	E162	01-Jun-2022	----	----	----		06-Jun-2022	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-S-06	E162	01-Jun-2022	----	----	----		06-Jun-2022	7 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP]										
NDR-1-02	E162	31-May-2022	----	----	----		06-Jun-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
NDR-C40R	E160	01-Jun-2022	----	----	----		06-Jun-2022	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
NDR-P-07	E160	01-Jun-2022	----	----	----		06-Jun-2022	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
NDR-S-05	E160	01-Jun-2022	----	----	----		06-Jun-2022	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
NDR-S-06	E160	01-Jun-2022	----	----	----		06-Jun-2022	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
NDR-1-02	E160	31-May-2022	----	----	----		06-Jun-2022	7 days	6 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass (hydrochloric acid)										
NDR-1-02	E536	31-May-2022	16-Jun-2022	180 days	15 days	✓	16-Jun-2022	165 days	0 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass (hydrochloric acid)										
NDR-C40R	E536	01-Jun-2022	16-Jun-2022	180 days	15 days	✓	16-Jun-2022	165 days	0 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass (hydrochloric acid)										
NDR-P-07	E536	01-Jun-2022	16-Jun-2022	180 days	15 days	✓	16-Jun-2022	165 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass (hydrochloric acid)										
NDR-S-05	E536	01-Jun-2022	16-Jun-2022	180 days	15 days	✓	16-Jun-2022	165 days	0 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass (hydrochloric acid)										
NDR-S-06	E536	01-Jun-2022	16-Jun-2022	180 days	15 days	✓	16-Jun-2022	165 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved)										
NDR-C40R	E508-L	01-Jun-2022	----	----	----		08-Jun-2022	28 days	7 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved)										
NDR-P-07	E508-L	01-Jun-2022	----	----	----		08-Jun-2022	28 days	7 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved)										
NDR-S-05	E508-L	01-Jun-2022	----	----	----		08-Jun-2022	28 days	7 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved)										
NDR-S-06	E508-L	01-Jun-2022	----	----	----		08-Jun-2022	28 days	7 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved)										
NDR-1-02	E508-L	31-May-2022	----	----	----		08-Jun-2022	28 days	8 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
NDR-C40R	E420	01-Jun-2022	----	----	----		06-Jun-2022	180 days	5 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
NDR-P-07	E420	01-Jun-2022	----	----	----		06-Jun-2022	180 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDR-S-05	E420	01-Jun-2022	----	----	----		06-Jun-2022	180 days	5 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDR-S-06	E420	01-Jun-2022	----	----	----		06-Jun-2022	180 days	5 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDR-1-02	E420	31-May-2022	----	----	----		06-Jun-2022	180 days	6 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	510964	1	5	20.0	5.0	✓
Alkalinity Species by Titration	E290	510961	1	7	14.2	5.0	✓
Ammonia by Fluorescence	E298	512140	1	17	5.8	5.0	✓
Chloride in Water by IC	E235.Cl	510959	1	14	7.1	5.0	✓
Conductivity in Water	E100	510962	1	16	6.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	513154	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	510956	1	7	14.2	5.0	✓
Free Cyanide	E339	518976	1	16	6.2	5.0	✓
Nitrate in Water by IC	E235.NO3	510957	1	11	9.0	5.0	✓
Nitrite in Water by IC	E235.NO2	510958	1	7	14.2	5.0	✓
pH by Meter	E108	510963	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	510960	1	7	14.2	5.0	✓
TDS by Gravimetry	E162	512461	1	19	5.2	5.0	✓
Total Cyanide	E333	518975	1	16	6.2	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	515817	1	18	5.5	5.0	✓
Total Metals in Water by CRC ICPMS	E420	512093	1	20	5.0	5.0	✓
Total Methylmercury in Water by GCAFS	E536	521857	1	9	11.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	512139	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	512476	1	5	20.0	4.7	✓
WAD Cyanide	E336	518974	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	510964	1	5	20.0	5.0	✓
Alkalinity Species by Titration	E290	510961	1	7	14.2	5.0	✓
Ammonia by Fluorescence	E298	512140	1	17	5.8	5.0	✓
Chloride in Water by IC	E235.Cl	510959	1	14	7.1	5.0	✓
Conductivity in Water	E100	510962	1	16	6.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	513154	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	510956	1	7	14.2	5.0	✓
Free Cyanide	E339	518976	1	16	6.2	5.0	✓
Nitrate in Water by IC	E235.NO3	510957	1	11	9.0	5.0	✓
Nitrite in Water by IC	E235.NO2	510958	1	7	14.2	5.0	✓
pH by Meter	E108	510963	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	510960	1	7	14.2	5.0	✓
TDS by Gravimetry	E162	512461	1	19	5.2	5.0	✓
Total Cyanide	E333	518975	1	16	6.2	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	515817	1	18	5.5	5.0	✓
Total Metals in Water by CRC ICPMS	E420	512093	1	20	5.0	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Total Methylmercury in Water by GCAFS	E536	521857	1	9	11.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	512139	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	512476	1	5	20.0	4.7	✓
WAD Cyanide	E336	518974	1	20	5.0	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	510964	1	5	20.0	5.0	✓
Alkalinity Species by Titration	E290	510961	1	7	14.2	5.0	✓
Ammonia by Fluorescence	E298	512140	1	17	5.8	5.0	✓
Chloride in Water by IC	E235.Cl	510959	1	14	7.1	5.0	✓
Conductivity in Water	E100	510962	1	16	6.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	513154	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	510956	1	7	14.2	5.0	✓
Free Cyanide	E339	518976	1	16	6.2	5.0	✓
Nitrate in Water by IC	E235.NO3	510957	1	11	9.0	5.0	✓
Nitrite in Water by IC	E235.NO2	510958	1	7	14.2	5.0	✓
Sulfate in Water by IC	E235.SO4	510960	1	7	14.2	5.0	✓
TDS by Gravimetry	E162	512461	1	19	5.2	5.0	✓
Total Cyanide	E333	518975	1	16	6.2	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	515817	1	18	5.5	5.0	✓
Total Metals in Water by CRC ICPMS	E420	512093	1	20	5.0	5.0	✓
Total Methylmercury in Water by GCAFS	E536	521857	1	9	11.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	512139	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	512476	1	5	20.0	4.7	✓
WAD Cyanide	E336	518974	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	512140	1	17	5.8	5.0	✓
Chloride in Water by IC	E235.Cl	510959	1	14	7.1	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	513154	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	510956	1	7	14.2	5.0	✓
Free Cyanide	E339	518976	1	16	6.2	5.0	✓
Nitrate in Water by IC	E235.NO3	510957	1	11	9.0	5.0	✓
Nitrite in Water by IC	E235.NO2	510958	1	7	14.2	5.0	✓
Sulfate in Water by IC	E235.SO4	510960	1	7	14.2	5.0	✓
Total Cyanide	E333	518975	1	16	6.2	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	515817	1	18	5.5	5.0	✓
Total Metals in Water by CRC ICPMS	E420	512093	1	20	5.0	5.0	✓
Total Methylmercury in Water by GCAFS	E536	521857	1	9	11.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	512139	1	20	5.0	5.0	✓
WAD Cyanide	E336	518974	1	20	5.0	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Waterloo - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Waterloo - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry	E160 Waterloo - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Waterloo - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Chloride in Water by IC	E235.Cl Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC	E235.NO2 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC	E235.NO3 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Waterloo - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Waterloo - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Waterloo - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).
Total Cyanide	E333 Waterloo - Environmental	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336 Waterloo - Environmental	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339 Waterloo - Environmental	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Waterloo - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total Metals in Water by CRC ICPMS	E420 Waterloo - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 Waterloo - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Total Methylmercury in Water by GCAFS	E536 Vancouver - Environmental	Water	EPA 1630 (mod)	This method follows Method 1630 of the US EPA. Samples are distilled under an inert gas flow to isolate methylmercury and minimize matrix interferences. The distillate is analyzed by aqueous phase ethylation, purge and trap, desorption and GC separation. The separated species are then pyrolized to elemental Hg and quantified by cold vapour atomic flourescence spectroscopy. Results are reported "as MeHg".

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Hardness (Calculated)	EC100 Waterloo - Environmental	Water	APHA 2340B	“Hardness (as CaCO3), dissolved” is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. “Total Hardness” refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Waterloo - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for Total Phosphorus in water	EP372 Waterloo - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Waterloo - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Total Methylmercury Water Preparation	EP536 Vancouver - Environmental	Water	EPA 1630	This method follows Method 1630 of the US EPA. Samples are distilled under an inert gas flow to isolate methylmercury and minimize matrix interferences. The distillate is analyzed by aqueous phase ethylation, purge and trap, desorption and GC separation. The separated species are then pyrolized to elemental Hg and quantified by cold vapour atomic flourescence spectroscopy. Results are reported "as MeHg".

QUALITY CONTROL REPORT

Work Order	: **WT2204941**	Page	: 1 of 18
Client	: Wood Canada Ltd.	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 2020 Winston Park Drive Suite 600 Mississauga ON Canada L6H 6X7	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2002	Date Samples Received	: 03-Jun-2022 09:30
PO	: ----	Date Analysis Commenced	: 04-Jun-2022
C-O-C number	: 20-1000904	Issue Date	: 20-Jun-2022 11:39
Sampler	: CLIENT		
Site	: ----		
Quote number	: OMEMA2002		
No. of samples received	: 5		
No. of samples analysed	: 5		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Caleb Deroche	Lab Analyst	Vancouver Metals, Burnaby, British Columbia
Greg Pokocky	Supervisor - Inorganic	Waterloo Inorganics, Waterloo, Ontario
Jon Fisher	Department Manager - Inorganics	Waterloo Inorganics, Waterloo, Ontario
Jon Fisher	Department Manager - Inorganics	Waterloo Metals, Waterloo, Ontario
Kinny Wu	Lab Analyst	Vancouver Metals, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 510961)											
WT2204941-001	NDR-P-07	alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	6.6	5.8	0.9	Diff <2x LOR	----
Physical Tests (QC Lot: 510962)											
WT2204941-001	NDR-P-07	conductivity	----	E100	1.0	µS/cm	27.6	27.8	0.722%	10%	----
Physical Tests (QC Lot: 510963)											
WT2204941-001	NDR-P-07	pH	----	E108	0.10	pH units	6.15	6.08	0.07	Diff <2x LOR	----
Physical Tests (QC Lot: 510964)											
WT2204941-001	NDR-P-07	acidity (as CaCO3)	----	E283	2.0	mg/L	5.0	4.6	0.4	Diff <2x LOR	----
Physical Tests (QC Lot: 512461)											
WT2204941-001	NDR-P-07	solids, total dissolved [TDS]	----	E162	10	mg/L	70	70	0.8	Diff <2x LOR	----
Physical Tests (QC Lot: 512476)											
WT2204941-001	NDR-P-07	solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 510956)											
WT2204843-001	Anonymous	fluoride	16984-48-8	E235.F	0.020	mg/L	0.046	0.045	0.001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 510957)											
WT2204843-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	0.968	0.970	0.180%	20%	----
Anions and Nutrients (QC Lot: 510958)											
WT2204843-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 510959)											
WT2204843-001	Anonymous	chloride	16887-00-6	E235.Cl	0.50	mg/L	240	240	0.0672%	20%	----
Anions and Nutrients (QC Lot: 510960)											
WT2204843-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	50.5	50.5	0.0737%	20%	----
Anions and Nutrients (QC Lot: 512139)											
WT2204894-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0082	0.0054	0.0028	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 512140)											
WT2204894-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0531	0.0534	0.563%	20%	----
Cyanides (QC Lot: 518974)											
EO2204007-017	Anonymous	cyanide, weak acid dissociable	----	E336	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Cyanides (QC Lot: 518975)											
WT2204941-001	NDR-P-07	cyanide, strong acid dissociable (total)	----	E333	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Cyanides (QC Lot: 518976)											
WT2204941-001	NDR-P-07	cyanide, free	----	E339	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 512093)											
WT2204890-001	Anonymous	aluminum, total	7429-90-5	E420	0.0300	mg/L	1.19	1.17	1.50%	20%	----
		antimony, total	7440-36-0	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00100	mg/L	0.00164	0.00165	0.00001	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00100	mg/L	0.0194	0.0188	2.97%	20%	----
		beryllium, total	7440-41-7	E420	0.000200	mg/L	<0.000200	<0.000200	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000500	mg/L	<0.000500	<0.000500	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.100	mg/L	0.157	0.161	0.004	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000500	mg/L	0.0150	0.0150	0.172%	20%	----
		calcium, total	7440-70-2	E420	0.500	mg/L	418	425	1.84%	20%	----
		cesium, total	7440-46-2	E420	0.000100	mg/L	0.00340	0.00338	0.546%	20%	----
		chromium, total	7440-47-3	E420	0.00500	mg/L	<0.00500	<0.00500	0	Diff <2x LOR	----
		cobalt, total	7440-48-4	E420	0.00100	mg/L	0.0169	0.0170	0.983%	20%	----
		copper, total	7440-50-8	E420	0.00500	mg/L	0.0450	0.0448	0.00022	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.100	mg/L	0.912	0.917	0.005	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000500	mg/L	0.00628	0.00634	0.981%	20%	----
		lithium, total	7439-93-2	E420	0.0100	mg/L	0.0680	0.0674	0.0006	Diff <2x LOR	----
		magnesium, total	7439-95-4	E420	0.0500	mg/L	58.8	58.1	1.17%	20%	----
		manganese, total	7439-96-5	E420	0.00100	mg/L	3.50	3.57	2.20%	20%	----
		molybdenum, total	7439-98-7	E420	0.000500	mg/L	0.0231	0.0229	1.13%	20%	----
		nickel, total	7440-02-0	E420	0.00500	mg/L	0.0367	0.0365	0.00016	Diff <2x LOR	----
		phosphorus, total	7723-14-0	E420	0.500	mg/L	<0.500	<0.500	0	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.500	mg/L	13.6	13.4	1.40%	20%	----
		rubidium, total	7440-17-7	E420	0.00200	mg/L	0.0287	0.0282	1.68%	20%	----
		selenium, total	7782-49-2	E420	0.000500	mg/L	0.00135	0.00131	0.000040	Diff <2x LOR	----
		silicon, total	7440-21-3	E420	1.00	mg/L	5.65	5.53	0.12	Diff <2x LOR	----
		silver, total	7440-22-4	E420	0.000100	mg/L	0.000125	0.000120	0.000005	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.500	mg/L	93.8	94.6	0.768%	20%	----
		strontium, total	7440-24-6	E420	0.00200	mg/L	1.20	1.22	1.06%	20%	----
		sulfur, total	7704-34-9	E420	5.00	mg/L	486	487	0.274%	20%	----
		tellurium, total	13494-80-9	E420	0.00200	mg/L	<0.00200	<0.00200	0	Diff <2x LOR	----
		thallium, total	7440-28-0	E420	0.000100	mg/L	0.000117	0.000118	0.000001	Diff <2x LOR	----
		thorium, total	7440-29-1	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00300	mg/L	0.0118	0.0108	0.00093	Diff <2x LOR	----
		tungsten, total	7440-33-7	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 512093) - continued											
WT2204890-001	Anonymous	uranium, total	7440-61-1	E420	0.000100	mg/L	0.000498	0.000517	0.000020	Diff <2x LOR	----
		vanadium, total	7440-62-2	E420	0.00500	mg/L	<0.00500	<0.00500	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0300	mg/L	9.03	9.32	3.24%	20%	----
		zirconium, total	7440-67-7	E420	0.00200	mg/L	<0.00200	<0.00200	0	Diff <2x LOR	----
Total Metals (QC Lot: 515817)											
CG2206861-002	Anonymous	mercury, total	7439-97-6	E508-L	0.50	ng/L	<0.00050 µg/L	<0.50	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 513154)											
WT2204829-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0102	0.0102	0.595%	20%	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00031	0.00030	0.00001	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.0439	0.0439	0.0152%	20%	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0532	0.0525	1.17%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.015	0.015	0.000001	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000669	0.0000703	4.96%	20%	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	90.8	93.9	3.30%	20%	----
		cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.00019	0.00019	0.000005	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00286	0.00290	1.46%	20%	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	0.692	0.706	2.05%	20%	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	0.000130	0.000129	0.000001	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0046	0.0046	0.000007	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	34.9	35.3	1.26%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0874	0.0887	1.48%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000723	0.000750	3.70%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00065	0.00064	0.000008	Diff <2x LOR	----
		phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	1.22	1.22	0.0741%	20%	----
		rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00024	0.00025	0.00001	Diff <2x LOR	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000073	0.000071	0.000002	Diff <2x LOR	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	8.65	8.66	0.109%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	23.5	23.8	1.60%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.598	0.591	1.05%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 513154) - continued											
WT2204829-001	Anonymous	sulfur, dissolved	7704-34-9	E421	0.50	mg/L	41.8	40.9	2.06%	20%	----
		tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	0.00077	0.00081	0.00004	Diff <2x LOR	----
		tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000372	0.000374	0.402%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0022	0.0022	0.00005	Diff <2x LOR	----
		zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 521857)											
VA22B1236-016	Anonymous	methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L	0.000056	0.000073	0.000017	Diff <2x LOR	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 510961)						
alkalinity, total (as CaCO3)	----	E290	1	mg/L	1.4	----
Physical Tests (QCLot: 510962)						
conductivity	----	E100	1	µS/cm	1.1	----
Physical Tests (QCLot: 510964)						
acidity (as CaCO3)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 512461)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 512476)						
solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Anions and Nutrients (QCLot: 510956)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 510957)						
nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 510958)						
nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 510959)						
chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 510960)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 512139)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 512140)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Cyanides (QCLot: 518974)						
cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 518975)						
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 518976)						
cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Total Metals (QCLot: 512093)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 512093) - continued						
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 515817)						
mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Dissolved Metals (QCLot: 513154)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 513154) - continued						
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Speciated Metals (QCLot: 521857)						
methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	<0.000020	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 510961)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	150 mg/L	104	85.0	115	----
Physical Tests (QCLot: 510962)									
conductivity	----	E100	1	µS/cm	1409 µS/cm	103	90.0	110	----
Physical Tests (QCLot: 510963)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 510964)									
acidity (as CaCO3)	----	E283	2	mg/L	50 mg/L	101	85.0	115	----
Physical Tests (QCLot: 512461)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	87.7	85.0	115	----
Physical Tests (QCLot: 512476)									
solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	98.0	85.0	115	----
Anions and Nutrients (QCLot: 510956)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 510957)									
nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	99.4	90.0	110	----
Anions and Nutrients (QCLot: 510958)									
nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	107	90.0	110	----
Anions and Nutrients (QCLot: 510959)									
chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 510960)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 512139)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.431 mg/L	102	80.0	120	----
Anions and Nutrients (QCLot: 512140)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	100.0	85.0	115	----
Cyanides (QCLot: 518974)									
cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	113	80.0	120	----
Cyanides (QCLot: 518975)									
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	0.25 mg/L	102	80.0	120	----
Cyanides (QCLot: 518976)									
cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	107	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 512093)									
aluminum, total	7429-90-5	E420	0.003	mg/L	0.1 mg/L	98.9	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	0.05 mg/L	101	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	0.05 mg/L	100	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.0125 mg/L	101	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.005 mg/L	95.1	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	0.05 mg/L	101	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	0.05 mg/L	94.0	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.005 mg/L	97.9	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	2.5 mg/L	99.2	80.0	120	----
cesium, total	7440-46-2	E420	0.00001	mg/L	0.0025 mg/L	106	80.0	120	----
chromium, total	7440-47-3	E420	0.0005	mg/L	0.0125 mg/L	96.2	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.0125 mg/L	97.2	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.0125 mg/L	94.4	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	0.05 mg/L	98.1	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.025 mg/L	103	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.0125 mg/L	96.7	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	2.5 mg/L	106	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.0125 mg/L	97.1	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.0125 mg/L	100	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.025 mg/L	96.1	80.0	120	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	0.5 mg/L	101	70.0	130	----
potassium, total	7440-09-7	E420	0.05	mg/L	2.5 mg/L	97.4	80.0	120	----
rubidium, total	7440-17-7	E420	0.0002	mg/L	0.005 mg/L	99.9	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	0.05 mg/L	97.0	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	0.5 mg/L	102	60.0	140	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.005 mg/L	96.0	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	2.5 mg/L	97.3	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.0125 mg/L	106	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	2.5 mg/L	94.0	80.0	120	----
tellurium, total	13494-80-9	E420	0.0002	mg/L	0.005 mg/L	102	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	0.05 mg/L	100	80.0	120	----
thorium, total	7440-29-1	E420	0.0001	mg/L	0.005 mg/L	102	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.025 mg/L	97.7	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.0125 mg/L	95.0	80.0	120	----
tungsten, total	7440-33-7	E420	0.0001	mg/L	0.005 mg/L	98.5	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.00025 mg/L	105	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.025 mg/L	99.0	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.025 mg/L	98.3	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 512093) - continued									
zirconium, total	7440-67-7	E420	0.0002	mg/L	0.005 mg/L	99.0	80.0	120	----
Total Metals (QCLot: 515817)									
mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	97.3	80.0	120	----
Dissolved Metals (QCLot: 513154)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	0.1 mg/L	105	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	0.05 mg/L	99.5	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	0.05 mg/L	97.5	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.0125 mg/L	101	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.005 mg/L	95.5	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	0.05 mg/L	97.1	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	0.05 mg/L	96.2	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.005 mg/L	97.8	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	2.5 mg/L	99.9	80.0	120	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.0025 mg/L	101	80.0	120	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.0125 mg/L	103	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.0125 mg/L	102	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.0125 mg/L	99.5	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	0.05 mg/L	102	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.025 mg/L	99.4	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.0125 mg/L	96.4	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	2.5 mg/L	108	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.0125 mg/L	103	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.0125 mg/L	101	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.025 mg/L	102	80.0	120	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	0.5 mg/L	100	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	2.5 mg/L	106	80.0	120	----
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.005 mg/L	107	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	0.05 mg/L	91.0	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	0.5 mg/L	104	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.005 mg/L	97.2	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	2.5 mg/L	106	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.0125 mg/L	102	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	2.5 mg/L	103	80.0	120	----
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.005 mg/L	91.3	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	0.05 mg/L	97.4	80.0	120	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.005 mg/L	99.3	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 513154) - continued									
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.025 mg/L	102	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.0125 mg/L	99.2	80.0	120	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.005 mg/L	97.7	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.00025 mg/L	100	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.025 mg/L	103	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.025 mg/L	98.9	80.0	120	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.005 mg/L	98.5	80.0	120	----
Speciated Metals (QCLot: 521857)									
methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	0.0025 µg/L	71.9	70.0	130	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 510956)										
WT2204843-001	Anonymous	fluoride	16984-48-8	E235.F	1.00 mg/L	1 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 510957)										
WT2204843-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3	2.70 mg/L	2.5 mg/L	108	75.0	125	----
Anions and Nutrients (QCLot: 510958)										
WT2204843-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2	0.497 mg/L	0.5 mg/L	99.3	75.0	125	----
Anions and Nutrients (QCLot: 510959)										
WT2204843-001	Anonymous	chloride	16887-00-6	E235.Cl	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 510960)										
WT2204843-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	102 mg/L	100 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 512139)										
WT2204894-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0922 mg/L	0.1 mg/L	92.2	70.0	130	----
Anions and Nutrients (QCLot: 512140)										
WT2204894-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.106 mg/L	0.1 mg/L	106	75.0	125	----
Cyanides (QCLot: 518974)										
EO2204007-017	Anonymous	cyanide, weak acid dissociable	----	E336	0.147 mg/L	0.125 mg/L	117	70.0	130	----
Cyanides (QCLot: 518975)										
WT2204941-001	NDR-P-07	cyanide, strong acid dissociable (total)	----	E333	0.246 mg/L	0.25 mg/L	98.6	70.0	130	----
Cyanides (QCLot: 518976)										
WT2204941-001	NDR-P-07	cyanide, free	----	E339	0.155 mg/L	0.125 mg/L	124	70.0	730	----
Total Metals (QCLot: 512093)										
WT2204890-002	Anonymous	aluminum, total	7429-90-5	E420	ND mg/L	0.1 mg/L	ND	70.0	130	----
		antimony, total	7440-36-0	E420	0.0506 mg/L	0.05 mg/L	101	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0508 mg/L	0.05 mg/L	102	70.0	130	----
		barium, total	7440-39-3	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		beryllium, total	7440-41-7	E420	0.00457 mg/L	0.005 mg/L	91.3	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0458 mg/L	0.05 mg/L	91.7	70.0	130	----
		boron, total	7440-42-8	E420	ND mg/L	0.05 mg/L	ND	70.0	130	----
		cadmium, total	7440-43-9	E420	ND mg/L	0.005 mg/L	ND	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 512093) - continued										
WT2204890-002	Anonymous	cesium, total	7440-46-2	E420	ND mg/L	0.0025 mg/L	ND	70.0	130	----
		chromium, total	7440-47-3	E420	0.0116 mg/L	0.0125 mg/L	92.5	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0112 mg/L	0.0125 mg/L	90.0	70.0	130	----
		copper, total	7440-50-8	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		iron, total	7439-89-6	E420	ND mg/L	0.05 mg/L	ND	70.0	130	----
		lead, total	7439-92-1	E420	ND mg/L	0.025 mg/L	ND	70.0	130	----
		lithium, total	7439-93-2	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		molybdenum, total	7439-98-7	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		nickel, total	7440-02-0	E420	0.0229 mg/L	0.025 mg/L	91.5	70.0	130	----
		phosphorus, total	7723-14-0	E420	0.486 mg/L	0.5 mg/L	97.1	70.0	130	----
		potassium, total	7440-09-7	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		rubidium, total	7440-17-7	E420	ND mg/L	0.005 mg/L	ND	70.0	130	----
		selenium, total	7782-49-2	E420	0.0511 mg/L	0.05 mg/L	102	70.0	130	----
		silicon, total	7440-21-3	E420	ND mg/L	0.5 mg/L	ND	70.0	130	----
		silver, total	7440-22-4	E420	0.00410 mg/L	0.005 mg/L	81.9	70.0	130	----
		sodium, total	7440-23-5	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		tellurium, total	13494-80-9	E420	0.00377 mg/L	0.005 mg/L	75.3	70.0	130	----
		thallium, total	7440-28-0	E420	0.0463 mg/L	0.05 mg/L	92.6	70.0	130	----
		thorium, total	7440-29-1	E420	0.00450 mg/L	0.005 mg/L	90.1	70.0	130	----
		tin, total	7440-31-5	E420	0.0248 mg/L	0.025 mg/L	99.2	70.0	130	----
		titanium, total	7440-32-6	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		tungsten, total	7440-33-7	E420	0.00383 mg/L	0.005 mg/L	76.5	70.0	130	----
		uranium, total	7440-61-1	E420	ND mg/L	0.00025 mg/L	ND	70.0	130	----
		vanadium, total	7440-62-2	E420	0.0215 mg/L	0.025 mg/L	86.0	70.0	130	----
		zinc, total	7440-66-6	E420	ND mg/L	0.025 mg/L	ND	70.0	130	----
		zirconium, total	7440-67-7	E420	0.00423 mg/L	0.005 mg/L	84.5	70.0	130	----
Total Metals (QCLot: 515817)										
CG2206865-001	Anonymous	mercury, total	7439-97-6	E508-L	3.75 ng/L	5 ng/L	75.0	70.0	130	----
Dissolved Metals (QCLot: 513154)										
WT2204829-002	Anonymous	aluminum, dissolved	7429-90-5	E421	0.107 mg/L	0.1 mg/L	107	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0564 mg/L	0.05 mg/L	113	70.0	130	----
		barium, dissolved	7440-39-3	E421	ND mg/L	0.0125 mg/L	ND	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 513154) - continued										
WT2204829-002	Anonymous	beryllium, dissolved	7440-41-7	E421	0.00547 mg/L	0.005 mg/L	109	70.0	130	----
		boron, dissolved	7440-42-8	E421	ND mg/L	0.05 mg/L	ND	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00542 mg/L	0.005 mg/L	108	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		cesium, dissolved	7440-46-2	E421	0.00256 mg/L	0.0025 mg/L	102	70.0	130	----
		chromium, dissolved	7440-47-3	E421	0.0132 mg/L	0.0125 mg/L	105	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0130 mg/L	0.0125 mg/L	104	70.0	130	----
		iron, dissolved	7439-89-6	E421	0.050 mg/L	0.05 mg/L	100	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0252 mg/L	0.025 mg/L	101	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.0133 mg/L	0.0125 mg/L	106	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0110 mg/L	0.0125 mg/L	88.0	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0256 mg/L	0.025 mg/L	102	70.0	130	----
		phosphorus, dissolved	7723-14-0	E421	0.550 mg/L	0.5 mg/L	110	70.0	130	----
		potassium, dissolved	7440-09-7	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		rubidium, dissolved	7440-17-7	E421	0.00542 mg/L	0.005 mg/L	108	70.0	130	----
		silicon, dissolved	7440-21-3	E421	ND mg/L	0.5 mg/L	ND	70.0	130	----
		sodium, dissolved	7440-23-5	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0499 mg/L	0.05 mg/L	99.7	70.0	130	----
		thorium, dissolved	7440-29-1	E421	0.00482 mg/L	0.005 mg/L	96.5	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0204 mg/L	0.025 mg/L	81.5	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0132 mg/L	0.0125 mg/L	106	70.0	130	----
		tungsten, dissolved	7440-33-7	E421	0.00510 mg/L	0.005 mg/L	102	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.000261 mg/L	0.00025 mg/L	104	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.0272 mg/L	0.025 mg/L	109	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.0269 mg/L	0.025 mg/L	108	70.0	130	----
		zirconium, dissolved	7440-67-7	E421	0.00483 mg/L	0.005 mg/L	96.7	70.0	130	----
Speciated Metals (QCLot: 521857)										
WT2204941-001	NDR-P-07	methylmercury (as MeHg), total	22967-92-6	E536	0.00828 µg/L	0.0025 µg/L	82.8	70.0	130	----

Chain of Custody (COC) / Analytical Request Form

COC Number: 20 - 1000004

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Environmental Division
Waterloo
Work Order Reference
WT2204941

Telephone : +1 519 886 6910

Report To	Contact and company name below will appear on the final report
Company:	WOOD PLC
Contact:	DALE KLODNICKI
Phone:	647-993-6243
	Company address below will appear on the final report
Street:	2020 Winston Park Dr, Suite 600
City/Province:	Oakville, ON
Postal Code:	L6H 6X7
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	
Contact:	

Reports / Recipients

Select Report Format: ☐ PDF ☐ EXCEL ☐ EDD (DIGITAL)
Merge QC/QCI Reports with COA ☐ YES ☐ NO ☐ N/A
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: dale.klodnicki@woodplc.com
Email 2: roxanne.dibbley@woodplc.com
Email 3:

Invoice Recipients

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: dale.klodnicki@woodplc.com
Email 2:

Turnaround Time (TAT) Requested

☐ Routine [R] if received by 3pm M-F - no surcharges apply
☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
☐ Same day [E2] if received by 10am M-S - 200% rush surcharge. Addition may apply to rush requests on weekends, statutory holidays and non-routi

Date and Time Required for all E&P TATs:

For all tests with rush TATs requested, please conta

Project Information

ALS Account # / Quote #: 21500
Job #: OMEMA2002
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: | PO#:
Major/Minor Code: | Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (ALS use only): WT2204941

ALS Contact: | Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	CL2	FF	DISS METALS	GEN CHEM (0.5 ppb)	LOW T Mercury	METALS	Methyl Mercury	NH3/TP	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	NDR-P-07	01JUN22	10:00	SW	7	1		1	1	1	1	1	1			
	NDR-S-06	↓	12:00													
	NDR-S-05		11:00													
	NDR-P-02	31MAY22	15:10													
	NDR-C40R	01JUN22	8:40													

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?
☐ YES ☑ NO
Are samples for human consumption/ use?
☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

NDR-S-05 DISS METALS DOES NOT HAVE PRESERVATIVE

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☑ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED
Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO
Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
	10.9

SHIPMENT RELEASE (client use)

Released by: R.Dibbley | Date: 1 JUNE 2022 | Time: 10:10

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by: | Date: 06/01/2022 | Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by: BB | Date: June 3/22 | Time: 9:30

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

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

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

AM

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WT2205034**	Page	: 1 of 10
Client	: **Wood Canada Limited**	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 2020 Winston Park Drive Suite 600 Mississauga ON Canada L6H 6X7	Address	: 60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2002.2021C.400.5120.573000	Date Samples Received	: 03-Jun-2022 13:20
PO	: C026300187	Date Analysis Commenced	: 06-Jun-2022
C-O-C number	: 20-1000905	Issue Date	: 05-Jul-2022 08:44
Sampler	: ----		
Site	: ----		
Quote number	: OMEMA2002		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Greg Pokocky	Supervisor - Inorganic	Inorganics, Waterloo, Ontario
Jon Fisher	Department Manager - Inorganics	Inorganics, Waterloo, Ontario
Jon Fisher	Department Manager - Inorganics	Metals, Waterloo, Ontario
Kinny Wu	Lab Analyst	Metals, Burnaby, British Columbia
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General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
mg/L	milligrams per litre
ng/L	nanograms per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

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

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	*Description*
DLDS	*Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.*

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-GERLK	NDR-JACLK	NDR-DAVLK	CNC-DUP-02	NDR-P-03
					Client sampling date / time	03-Jun-2022 10:30	03-Jun-2022 11:30	03-Jun-2022 09:30	03-Jun-2022	02-Jun-2022 10:30
						WT2205034-001	WT2205034-002	WT2205034-003	WT2205034-004	WT2205034-005
						Result	Result	Result	Result	Result
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L		<2.0	<2.0	<2.0	<2.0	<2.0
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		122	196	138	116	36.2
conductivity	----	E100	1.0	µS/cm		202	249	229	203	71.6
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L		105	130	117	107	36.4
pH	----	E108	0.10	pH units		8.17	8.37	8.31	8.15	7.70
solids, total dissolved [TDS]	----	E162	10	mg/L		123 DLDS	102 DLDS	98 DLDS	113 DLDS	31 DLDS
solids, total suspended [TSS]	----	E160	3.0	mg/L		3.4	4.0	<3.0	<3.0	3.6
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		0.0185	0.0365	0.0108	0.0140	0.0201
chloride	16887-00-6	E235.Cl	0.50	mg/L		0.52	<0.50	<0.50	<0.50	<0.50
fluoride	16984-48-8	E235.F	0.020	mg/L		0.052	0.049	0.032	0.044	<0.020
nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L		<0.020	<0.020	<0.020	<0.020	<0.020
nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L		0.0177	0.0118	0.0072	0.0127	0.0152
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		1.03	2.02	2.48	0.98	<0.30
Cyanides										
cyanide, free	----	E339	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
cyanide, strong acid dissociable (total)	----	E333	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
cyanide, weak acid dissociable	----	E336	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L		0.0592	0.180	0.0077	0.0558	0.0561
antimony, total	7440-36-0	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
arsenic, total	7440-38-2	E420	0.00010	mg/L		0.00052	0.00029	0.00015	0.00050	0.00028
barium, total	7440-39-3	E420	0.00010	mg/L		0.0147	0.0153	0.00954	0.0145	0.0199
beryllium, total	7440-41-7	E420	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
bismuth, total	7440-69-9	E420	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, total	7440-42-8	E420	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
cadmium, total	7440-43-9	E420	0.0000050	mg/L		0.0000103	0.0000102	<0.0000050	<0.0000050	0.0000073
calcium, total	7440-70-2	E420	0.050	mg/L		31.2	37.4	33.2	30.2	10.7
cesium, total	7440-46-2	E420	0.000010	mg/L		<0.000010	0.000023	<0.000010	<0.000010	<0.000010

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-GERLK	NDR-JACLK	NDR-DAVLK	CNC-DUP-02	NDR-P-03
					Client sampling date / time	03-Jun-2022 10:30	03-Jun-2022 11:30	03-Jun-2022 09:30	03-Jun-2022	02-Jun-2022 10:30
						WT2205034-001	WT2205034-002	WT2205034-003	WT2205034-004	WT2205034-005
						Result	Result	Result	Result	Result
Total Metals										
chromium, total	7440-47-3	E420	0.00050	mg/L		<0.00050	0.00068	<0.00050	<0.00050	<0.00050
cobalt, total	7440-48-4	E420	0.00010	mg/L		<0.00010	0.00024	<0.00010	<0.00010	<0.00010
copper, total	7440-50-8	E420	0.00050	mg/L		0.00144	0.00092	<0.00050	0.00075	0.00140
iron, total	7439-89-6	E420	0.010	mg/L		0.226	0.299	<0.010	0.212	0.090
lead, total	7439-92-1	E420	0.000050	mg/L		0.000055	0.000265	<0.000050	<0.000050	0.000126
lithium, total	7439-93-2	E420	0.0010	mg/L		<0.0010	0.0012	<0.0010	<0.0010	<0.0010
magnesium, total	7439-95-4	E420	0.0050	mg/L		7.85	10.6	8.88	7.69	2.82
manganese, total	7439-96-5	E420	0.00010	mg/L		0.0365	0.0506	0.00988	0.0326	0.0130
mercury, total	7439-97-6	E508-L	0.50	ng/L		2.04	0.63	<0.50	1.67	1.00
molybdenum, total	7439-98-7	E420	0.000050	mg/L		0.000121	0.000107	<0.000050	0.000113	<0.000050
nickel, total	7440-02-0	E420	0.00050	mg/L		<0.00050	0.00060	<0.00050	<0.00050	0.00111
phosphorus, total	7723-14-0	E420	0.050	mg/L		0.139	<0.050	<0.050	<0.050	<0.050
potassium, total	7440-09-7	E420	0.050	mg/L		1.04	1.23	0.880	0.847	0.649
rubidium, total	7440-17-7	E420	0.00020	mg/L		0.00139	0.00172	0.00145	0.00130	0.00078
selenium, total	7782-49-2	E420	0.000050	mg/L		0.000086	<0.000050	<0.000050	0.000072	<0.000050
silicon, total	7440-21-3	E420	0.10	mg/L		1.87	1.72	2.52	1.88	0.37
silver, total	7440-22-4	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, total	7440-23-5	E420	0.050	mg/L		2.76	2.10	1.36	2.56	0.911
strontium, total	7440-24-6	E420	0.00020	mg/L		0.0558	0.0517	0.0393	0.0565	0.0149
sulfur, total	7704-34-9	E420	0.50	mg/L		0.57	0.78	1.11	<0.50	<0.50
tellurium, total	13494-80-9	E420	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
thallium, total	7440-28-0	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
thorium, total	7440-29-1	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
tin, total	7440-31-5	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, total	7440-32-6	E420	0.00030	mg/L		0.00135	0.00873	<0.00030	0.00128	0.00155
tungsten, total	7440-33-7	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
uranium, total	7440-61-1	E420	0.000010	mg/L		0.000033	0.000056	0.000093	0.000032	0.000013
vanadium, total	7440-62-2	E420	0.00050	mg/L		<0.00050	0.00061	<0.00050	<0.00050	<0.00050
zinc, total	7440-66-6	E420	0.0030	mg/L		0.0144	0.0193	<0.0030	0.0073	0.0112
zirconium, total	7440-67-7	E420	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Dissolved Metals										

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-GERLK	NDR-JACLK	NDR-DAVLK	CNC-DUP-02	NDR-P-03
					Client sampling date / time	03-Jun-2022 10:30	03-Jun-2022 11:30	03-Jun-2022 09:30	03-Jun-2022	02-Jun-2022 10:30
						WT2205034-001	WT2205034-002	WT2205034-003	WT2205034-004	WT2205034-005
						Result	Result	Result	Result	Result
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.0463	0.0076	0.0012	0.0436	0.0256
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00053	0.00021	0.00014	0.00051	0.00028
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.0135	0.0134	0.00960	0.0138	0.00287
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, dissolved	7440-42-8	E421	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		0.0000068	<0.0000050	<0.0000050	<0.0000050	<0.0000050
calcium, dissolved	7440-70-2	E421	0.050	mg/L		29.3	34.6	32.0	29.8	9.91
cesium, dissolved	7440-46-2	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
copper, dissolved	7440-50-8	E421	0.00020	mg/L		0.00058	<0.00020	<0.00020	0.00053	<0.00020
iron, dissolved	7439-89-6	E421	0.010	mg/L		0.167	0.012	<0.010	0.167	0.026
lead, dissolved	7439-92-1	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		<0.0010	0.0012	0.0010	0.0010	<0.0010
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L		7.67	10.5	8.93	7.82	2.82
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.0151	0.0187	0.00147	0.0147	0.00104
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		0.000099	0.000092	<0.000050	0.000104	<0.000050
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
potassium, dissolved	7440-09-7	E421	0.050	mg/L		0.835	1.06	0.913	0.835	0.339
rubidium, dissolved	7440-17-7	E421	0.00020	mg/L		0.00123	0.00131	0.00131	0.00122	0.00053
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.000075	<0.000050	0.000053	0.000091	0.000070
silicon, dissolved	7440-21-3	E421	0.050	mg/L		1.89	1.55	2.54	1.89	0.324
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, dissolved	7440-23-5	E421	0.050	mg/L		2.51	1.79	1.38	2.54	0.506
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		0.0522	0.0486	0.0392	0.0537	0.0140
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		0.53	0.90	1.01	<0.50	<0.50
tellurium, dissolved	13494-80-9	E421	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-GERLK	NDR-JACLK	NDR-DAVLK	CNC-DUP-02	NDR-P-03
					Client sampling date / time	03-Jun-2022 10:30	03-Jun-2022 11:30	03-Jun-2022 09:30	03-Jun-2022	02-Jun-2022 10:30
						WT2205034-001	WT2205034-002	WT2205034-003	WT2205034-004	WT2205034-005
						Result	Result	Result	Result	Result
Dissolved Metals										
thorium, dissolved	7440-29-1	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		0.00095	<0.00030	<0.00030	0.00078	<0.00030
tungsten, dissolved	7440-33-7	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		0.000032	0.000045	0.000084	0.000031	0.000010
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		0.0018	0.0019	<0.0010	0.0016	<0.0010
zirconium, dissolved	7440-67-7	E421	0.00030	mg/L		<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
dissolved metals filtration location	----	EP421	-	-		Field	Field	Field	Field	Field
Speciated Metals										
methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L		0.000275	0.000039	0.000036	0.000163	0.000047

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID: NDR-MARLK	----	----	----	----
					Client sampling date / time: 02-Jun-2022 09:50	----	----	----	----
					WT2205034-006	--------	--------	--------	--------
					Result	----	----	----	----
Physical Tests									
acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	----	----	----	----
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	42.0	----	----	----	----
conductivity	----	E100	1.0	µS/cm	20.0	----	----	----	----
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	46.0	----	----	----	----
pH	----	E108	0.10	pH units	7.29	----	----	----	----
solids, total dissolved [TDS]	----	E162	10	mg/L	62 DLDS	----	----	----	----
solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	----	----	----	----
Anions and Nutrients									
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0120	----	----	----	----
chloride	16887-00-6	E235.Cl	0.50	mg/L	<0.50	----	----	----	----
fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	----	----	----	----
nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	<0.020	----	----	----	----
nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	----	----	----	----
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0098	----	----	----	----
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	<0.30	----	----	----	----
Cyanides									
cyanide, free	----	E339	0.0020	mg/L	<0.0020	----	----	----	----
cyanide, strong acid dissociable (total)	----	E333	0.0020	mg/L	<0.0020	----	----	----	----
cyanide, weak acid dissociable	----	E336	0.0020	mg/L	<0.0020	----	----	----	----
Total Metals									
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0904	----	----	----	----
antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	----	----	----	----
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00051	----	----	----	----
barium, total	7440-39-3	E420	0.00010	mg/L	0.00847	----	----	----	----
beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	----	----	----	----
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	----	----	----	----
boron, total	7440-42-8	E420	0.010	mg/L	<0.010	----	----	----	----
cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000077	----	----	----	----
calcium, total	7440-70-2	E420	0.050	mg/L	12.9	----	----	----	----
cesium, total	7440-46-2	E420	0.000010	mg/L	<0.000010	----	----	----	----
chromium, total	7440-47-3	E420	0.00050	mg/L	<0.00050	----	----	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-MARLK	----	----	----	----
					Client sampling date / time	02-Jun-2022 09:50	----	----	----	----
						WT2205034-006	--------	--------	--------	--------
						Result	----	----	----	----
Total Metals										
cobalt, total	7440-48-4	E420	0.00010	mg/L		<0.00010	----	----	----	----
copper, total	7440-50-8	E420	0.00050	mg/L		0.00082	----	----	----	----
iron, total	7439-89-6	E420	0.010	mg/L		0.242	----	----	----	----
lead, total	7439-92-1	E420	0.000050	mg/L		0.000076	----	----	----	----
lithium, total	7439-93-2	E420	0.0010	mg/L		<0.0010	----	----	----	----
magnesium, total	7439-95-4	E420	0.0050	mg/L		3.58	----	----	----	----
manganese, total	7439-96-5	E420	0.00010	mg/L		0.0141	----	----	----	----
mercury, total	7439-97-6	E508-L	0.50	ng/L		2.47	----	----	----	----
molybdenum, total	7439-98-7	E420	0.000050	mg/L		<0.000050	----	----	----	----
nickel, total	7440-02-0	E420	0.00050	mg/L		0.00061	----	----	----	----
phosphorus, total	7723-14-0	E420	0.050	mg/L		<0.050	----	----	----	----
potassium, total	7440-09-7	E420	0.050	mg/L		0.400	----	----	----	----
rubidium, total	7440-17-7	E420	0.00020	mg/L		0.00067	----	----	----	----
selenium, total	7782-49-2	E420	0.000050	mg/L		0.000068	----	----	----	----
silicon, total	7440-21-3	E420	0.10	mg/L		0.93	----	----	----	----
silver, total	7440-22-4	E420	0.000010	mg/L		<0.000010	----	----	----	----
sodium, total	7440-23-5	E420	0.050	mg/L		1.09	----	----	----	----
strontium, total	7440-24-6	E420	0.00020	mg/L		0.0229	----	----	----	----
sulfur, total	7704-34-9	E420	0.50	mg/L		<0.50	----	----	----	----
tellurium, total	13494-80-9	E420	0.00020	mg/L		<0.00020	----	----	----	----
thallium, total	7440-28-0	E420	0.000010	mg/L		<0.000010	----	----	----	----
thorium, total	7440-29-1	E420	0.00010	mg/L		<0.00010	----	----	----	----
tin, total	7440-31-5	E420	0.00010	mg/L		<0.00010	----	----	----	----
titanium, total	7440-32-6	E420	0.00030	mg/L		0.00249	----	----	----	----
tungsten, total	7440-33-7	E420	0.00010	mg/L		<0.00010	----	----	----	----
uranium, total	7440-61-1	E420	0.000010	mg/L		0.000028	----	----	----	----
vanadium, total	7440-62-2	E420	0.00050	mg/L		<0.00050	----	----	----	----
zinc, total	7440-66-6	E420	0.0030	mg/L		0.0061	----	----	----	----
zirconium, total	7440-67-7	E420	0.00020	mg/L		<0.00020	----	----	----	----
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.0583	----	----	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-MARLK	----	----	----	----
					Client sampling date / time	02-Jun-2022 09:50	----	----	----	----
						WT2205034-006	--------	--------	--------	--------
						Result	----	----	----	----
Dissolved Metals										
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		<0.00010	----	----	----	----
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00053	----	----	----	----
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.00574	----	----	----	----
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L		<0.000020	----	----	----	----
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	----	----	----	----
boron, dissolved	7440-42-8	E421	0.010	mg/L		<0.010	----	----	----	----
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		0.0000062	----	----	----	----
calcium, dissolved	7440-70-2	E421	0.050	mg/L		12.8	----	----	----	----
cesium, dissolved	7440-46-2	E421	0.000010	mg/L		<0.000010	----	----	----	----
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		<0.00050	----	----	----	----
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		<0.00010	----	----	----	----
copper, dissolved	7440-50-8	E421	0.00020	mg/L		0.00057	----	----	----	----
iron, dissolved	7439-89-6	E421	0.010	mg/L		0.178	----	----	----	----
lead, dissolved	7439-92-1	E421	0.000050	mg/L		<0.000050	----	----	----	----
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		<0.0010	----	----	----	----
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L		3.41	----	----	----	----
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.00742	----	----	----	----
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		<0.000050	----	----	----	----
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		<0.00050	----	----	----	----
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	----	----	----	----
potassium, dissolved	7440-09-7	E421	0.050	mg/L		0.361	----	----	----	----
rubidium, dissolved	7440-17-7	E421	0.00020	mg/L		0.00062	----	----	----	----
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.000087	----	----	----	----
silicon, dissolved	7440-21-3	E421	0.050	mg/L		0.864	----	----	----	----
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	----	----	----	----
sodium, dissolved	7440-23-5	E421	0.050	mg/L		1.05	----	----	----	----
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		0.0216	----	----	----	----
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		<0.50	----	----	----	----
tellurium, dissolved	13494-80-9	E421	0.00020	mg/L		<0.00020	----	----	----	----
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	----	----	----	----
thorium, dissolved	7440-29-1	E421	0.00010	mg/L		<0.00010	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	NDR-MARLK	----	----	----	----
					Client sampling date / time	02-Jun-2022 09:50	----	----	----	----
Analyte	CAS Number	Method	LOR	Unit		WT2205034-006	--------	--------	--------	--------
						Result	----	----	----	----
Dissolved Metals										
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	----	----	----	----
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		0.00124	----	----	----	----
tungsten, dissolved	7440-33-7	E421	0.00010	mg/L		<0.00010	----	----	----	----
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		0.000026	----	----	----	----
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		<0.00050	----	----	----	----
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		0.0039	----	----	----	----
zirconium, dissolved	7440-67-7	E421	0.00030	mg/L		<0.00030	----	----	----	----
dissolved metals filtration location	----	EP421	-	-		Field	----	----	----	----
Speciated Metals										
methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L		0.000091	----	----	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2205034**	Page	: 1 of 21
Client	: **Wood Canada Limited**	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 2020 Winston Park Drive Suite 600 Mississauga ON Canada L6H 6X7	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2002.2021C.400.5120.573000	Date Samples Received	: 03-Jun-2022 13:20
PO	: C026300187	Issue Date	: 05-Jul-2022 08:44
C-O-C number	: 20-1000905		
Sampler	: ----		
Site	: ----		
Quote number	: OMEMA2002		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) NDR-GERLK	E298	03-Jun-2022	06-Jun-2022	----	----		08-Jun-2022	28 days	5 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) NDR-DAVLK	E298	03-Jun-2022	08-Jun-2022	----	----		09-Jun-2022	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) NDR-JACLK	E298	03-Jun-2022	08-Jun-2022	----	----		09-Jun-2022	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) CNC-DUP-02	E298	03-Jun-2022	08-Jun-2022	----	----		09-Jun-2022	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) NDR-MARLK	E298	02-Jun-2022	08-Jun-2022	----	----		09-Jun-2022	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) NDR-P-03	E298	02-Jun-2022	08-Jun-2022	----	----		09-Jun-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-DAVLK	E235.Cl	03-Jun-2022	----	----	----		08-Jun-2022	28 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-GERLK	E235.Cl	03-Jun-2022	----	----	----		08-Jun-2022	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-JACLK	E235.Cl	03-Jun-2022	----	----	----		08-Jun-2022	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] CNC-DUP-02	E235.Cl	03-Jun-2022	----	----	----		08-Jun-2022	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-MARLK	E235.Cl	02-Jun-2022	----	----	----		08-Jun-2022	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-P-03	E235.Cl	02-Jun-2022	----	----	----		08-Jun-2022	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-DAVLK	E235.F	03-Jun-2022	----	----	----		08-Jun-2022	28 days	5 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-GERLK	E235.F	03-Jun-2022	----	----	----		08-Jun-2022	28 days	5 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-JACLK	E235.F	03-Jun-2022	----	----	----		08-Jun-2022	28 days	5 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] CNC-DUP-02	E235.F	03-Jun-2022	----	----	----		08-Jun-2022	28 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-MARLK	E235.F	02-Jun-2022	----	----	----		08-Jun-2022	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-P-03	E235.F	02-Jun-2022	----	----	----		08-Jun-2022	28 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-DAVLK	E235.NO3	03-Jun-2022	----	----	----		08-Jun-2022	7 days	5 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-GERLK	E235.NO3	03-Jun-2022	----	----	----		08-Jun-2022	7 days	5 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-JACLK	E235.NO3	03-Jun-2022	----	----	----		08-Jun-2022	7 days	5 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] CNC-DUP-02	E235.NO3	03-Jun-2022	----	----	----		08-Jun-2022	7 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-MARLK	E235.NO3	02-Jun-2022	----	----	----		08-Jun-2022	7 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-P-03	E235.NO3	02-Jun-2022	----	----	----		08-Jun-2022	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-DAVLK	E235.NO2	03-Jun-2022	----	----	----		08-Jun-2022	7 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-GERLK	E235.NO2	03-Jun-2022	----	----	----		08-Jun-2022	7 days	5 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-JACLK	E235.NO2	03-Jun-2022	----	----	----		08-Jun-2022	7 days	5 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] CNC-DUP-02	E235.NO2	03-Jun-2022	----	----	----		08-Jun-2022	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-MARLK	E235.NO2	02-Jun-2022	----	----	----		08-Jun-2022	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-P-03	E235.NO2	02-Jun-2022	----	----	----		08-Jun-2022	7 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDR-DAVLK	E235.SO4	03-Jun-2022	----	----	----		08-Jun-2022	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDR-GERLK	E235.SO4	03-Jun-2022	----	----	----		08-Jun-2022	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDR-JACLK	E235.SO4	03-Jun-2022	----	----	----		08-Jun-2022	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] CNC-DUP-02	E235.SO4	03-Jun-2022	----	----	----		08-Jun-2022	28 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
NDR-MARLK	E235.SO4	02-Jun-2022	----	----	----		08-Jun-2022	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
NDR-P-03	E235.SO4	02-Jun-2022	----	----	----		08-Jun-2022	28 days	6 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
NDR-DAVLK	E372-U	03-Jun-2022	08-Jun-2022	----	----		09-Jun-2022	28 days	6 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
NDR-GERLK	E372-U	03-Jun-2022	08-Jun-2022	----	----		09-Jun-2022	28 days	6 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
NDR-JACLK	E372-U	03-Jun-2022	08-Jun-2022	----	----		09-Jun-2022	28 days	6 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
CNC-DUP-02	E372-U	03-Jun-2022	08-Jun-2022	----	----		09-Jun-2022	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
NDR-MARLK	E372-U	02-Jun-2022	08-Jun-2022	----	----		09-Jun-2022	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
NDR-P-03	E372-U	02-Jun-2022	08-Jun-2022	----	----		09-Jun-2022	28 days	7 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
NDR-DAVLK	E339	03-Jun-2022	----	----	----		10-Jun-2022	14 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide) NDR-GERLK	E339	03-Jun-2022	----	----	----		10-Jun-2022	14 days	7 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide) NDR-JACLK	E339	03-Jun-2022	----	----	----		10-Jun-2022	14 days	7 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide) CNC-DUP-02	E339	03-Jun-2022	----	----	----		10-Jun-2022	14 days	8 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide) NDR-MARLK	E339	02-Jun-2022	----	----	----		10-Jun-2022	14 days	8 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide) NDR-P-03	E339	02-Jun-2022	----	----	----		10-Jun-2022	14 days	8 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide) NDR-DAVLK	E333	03-Jun-2022	----	----	----		10-Jun-2022	14 days	7 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide) NDR-GERLK	E333	03-Jun-2022	----	----	----		10-Jun-2022	14 days	7 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide) NDR-JACLK	E333	03-Jun-2022	----	----	----		10-Jun-2022	14 days	7 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide) CNC-DUP-02	E333	03-Jun-2022	----	----	----		10-Jun-2022	14 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide) NDR-MARLK	E333	02-Jun-2022	----	----	----		10-Jun-2022	14 days	8 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide) NDR-P-03	E333	02-Jun-2022	----	----	----		10-Jun-2022	14 days	8 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) NDR-DAVLK	E336	03-Jun-2022	----	----	----		10-Jun-2022	14 days	7 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) NDR-GERLK	E336	03-Jun-2022	----	----	----		10-Jun-2022	14 days	7 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) NDR-JACLK	E336	03-Jun-2022	----	----	----		10-Jun-2022	14 days	7 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) CNC-DUP-02	E336	03-Jun-2022	----	----	----		10-Jun-2022	14 days	8 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) NDR-MARLK	E336	02-Jun-2022	----	----	----		10-Jun-2022	14 days	8 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) NDR-P-03	E336	02-Jun-2022	----	----	----		10-Jun-2022	14 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) CNC-DUP-02	E421	03-Jun-2022	07-Jun-2022	----	----		08-Jun-2022	180 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDR-DAVLK	E421	03-Jun-2022	07-Jun-2022	----	----		08-Jun-2022	180 days	5 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDR-GERLK	E421	03-Jun-2022	07-Jun-2022	----	----		08-Jun-2022	180 days	5 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDR-JACLK	E421	03-Jun-2022	07-Jun-2022	----	----		08-Jun-2022	180 days	5 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDR-MARLK	E421	02-Jun-2022	07-Jun-2022	----	----		08-Jun-2022	180 days	6 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDR-P-03	E421	02-Jun-2022	07-Jun-2022	----	----		08-Jun-2022	180 days	6 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] CNC-DUP-02	E283	03-Jun-2022	----	----	----		09-Jun-2022	14 days	6 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-DAVLK	E283	03-Jun-2022	----	----	----		09-Jun-2022	14 days	6 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-GERLK	E283	03-Jun-2022	----	----	----		09-Jun-2022	14 days	6 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-JACLK	E283	03-Jun-2022	----	----	----		09-Jun-2022	14 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-MARLK	E283	02-Jun-2022	----	----	----		09-Jun-2022	14 days	7 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-P-03	E283	02-Jun-2022	----	----	----		09-Jun-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] CNC-DUP-02	E290	03-Jun-2022	----	----	----		07-Jun-2022	14 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-DAVLK	E290	03-Jun-2022	----	----	----		07-Jun-2022	14 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-GERLK	E290	03-Jun-2022	----	----	----		07-Jun-2022	14 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-JACLK	E290	03-Jun-2022	----	----	----		07-Jun-2022	14 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-MARLK	E290	02-Jun-2022	----	----	----		07-Jun-2022	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-P-03	E290	02-Jun-2022	----	----	----		07-Jun-2022	14 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] CNC-DUP-02	E100	03-Jun-2022	----	----	----		07-Jun-2022	28 days	4 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-DAVLK	E100	03-Jun-2022	----	----	----		07-Jun-2022	28 days	4 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-GERLK	E100	03-Jun-2022	----	----	----		07-Jun-2022	28 days	4 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-JACLK	E100	03-Jun-2022	----	----	----		07-Jun-2022	28 days	4 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-MARLK	E100	02-Jun-2022	----	----	----		07-Jun-2022	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-P-03	E100	02-Jun-2022	----	----	----		07-Jun-2022	28 days	5 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] CNC-DUP-02	E108	03-Jun-2022	----	----	----		07-Jun-2022	4 days	4 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-DAVLK	E108	03-Jun-2022	----	----	----		07-Jun-2022	4 days	4 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-GERLK	E108	03-Jun-2022	----	----	----		07-Jun-2022	4 days	4 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-JACLK	E108	03-Jun-2022	----	----	----		07-Jun-2022	4 days	4 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-MARLK	E108	02-Jun-2022	----	----	----		07-Jun-2022	4 days	5 days	× EHT
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-P-03	E108	02-Jun-2022	----	----	----		07-Jun-2022	4 days	5 days	× EHT
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-DAVLK	E162	03-Jun-2022	----	----	----		07-Jun-2022	7 days	4 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-GERLK	E162	03-Jun-2022	----	----	----		07-Jun-2022	7 days	4 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-JACLK	E162	03-Jun-2022	----	----	----		07-Jun-2022	7 days	4 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] CNC-DUP-02	E162	03-Jun-2022	----	----	----		07-Jun-2022	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-MARLK	E162	02-Jun-2022	----	----	----		07-Jun-2022	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-P-03	E162	02-Jun-2022	----	----	----		07-Jun-2022	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-DAVLK	E160	03-Jun-2022	----	----	----		07-Jun-2022	7 days	4 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-GERLK	E160	03-Jun-2022	----	----	----		07-Jun-2022	7 days	4 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-JACLK	E160	03-Jun-2022	----	----	----		07-Jun-2022	7 days	4 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] CNC-DUP-02	E160	03-Jun-2022	----	----	----		07-Jun-2022	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-MARLK	E160	02-Jun-2022	----	----	----		07-Jun-2022	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-P-03	E160	02-Jun-2022	----	----	----		07-Jun-2022	7 days	5 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Pre-cleaned FLPE - total (lab preserved) CNC-DUP-02	E536	03-Jun-2022	16-Jun-2022	----	----		17-Jun-2022	180 days	14 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Pre-cleaned FLPE - total (lab preserved) NDR-DAVLK	E536	03-Jun-2022	16-Jun-2022	----	----		17-Jun-2022	180 days	14 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Pre-cleaned FLPE - total (lab preserved) NDR-GERLK	E536	03-Jun-2022	16-Jun-2022	----	----		17-Jun-2022	180 days	14 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Pre-cleaned FLPE - total (lab preserved) NDR-JACLK	E536	03-Jun-2022	16-Jun-2022	----	----		17-Jun-2022	180 days	14 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Speciated Metals : Total Methylmercury in Water by GCAFS										
Pre-cleaned FLPE - total (lab preserved) NDR-MARLK	E536	02-Jun-2022	04-Jul-2022	----	----		04-Jul-2022	180 days	32 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Pre-cleaned FLPE - total (lab preserved) NDR-P-03	E536	02-Jun-2022	04-Jul-2022	----	----		04-Jul-2022	180 days	32 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved) NDR-DAVLK	E508-L	03-Jun-2022	----	----	----		28-Jun-2022	28 days	25 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved) NDR-GERLK	E508-L	03-Jun-2022	----	----	----		28-Jun-2022	28 days	25 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved) NDR-JACLK	E508-L	03-Jun-2022	----	----	----		28-Jun-2022	28 days	25 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved) CNC-DUP-02	E508-L	03-Jun-2022	----	----	----		28-Jun-2022	28 days	26 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved) NDR-MARLK	E508-L	02-Jun-2022	----	----	----		28-Jun-2022	28 days	26 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved) NDR-P-03	E508-L	02-Jun-2022	----	----	----		28-Jun-2022	28 days	26 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDR-DAVLK	E420	03-Jun-2022	----	----	----		07-Jun-2022	180 days	4 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDR-GERLK	E420	03-Jun-2022	----	----	----		07-Jun-2022	180 days	4 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDR-JACLK	E420	03-Jun-2022	----	----	----		07-Jun-2022	180 days	4 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) CNC-DUP-02	E420	03-Jun-2022	----	----	----		07-Jun-2022	180 days	5 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDR-MARLK	E420	02-Jun-2022	----	----	----		07-Jun-2022	180 days	5 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDR-P-03	E420	02-Jun-2022	----	----	----		07-Jun-2022	180 days	5 days	✓

Legend & Qualifier Definitions

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	513395	1	6	16.6	5.0	✓
Alkalinity Species by Titration	E290	513396	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	513212	2	34	5.8	5.0	✓
Chloride in Water by IC	E235.Cl	513400	1	20	5.0	5.0	✓
Conductivity in Water	E100	513398	1	10	10.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	513441	1	17	5.8	5.0	✓
Fluoride in Water by IC	E235.F	513403	1	6	16.6	5.0	✓
Free Cyanide	E339	518976	1	16	6.2	5.0	✓
Nitrate in Water by IC	E235.NO3	513401	1	20	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2	513402	1	20	5.0	5.0	✓
pH by Meter	E108	513397	1	10	10.0	5.0	✓
Sulfate in Water by IC	E235.SO4	513399	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	513917	1	19	5.2	5.0	✓
Total Cyanide	E333	518975	1	16	6.2	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	542127	1	14	7.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	513193	1	14	7.1	5.0	✓
Total Methylmercury in Water by GCAFS	E536	523523	2	32	6.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	515193	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	513921	1	7	14.2	4.7	✓
WAD Cyanide	E336	518974	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	513395	1	6	16.6	5.0	✓
Alkalinity Species by Titration	E290	513396	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	513212	2	34	5.8	5.0	✓
Chloride in Water by IC	E235.Cl	513400	1	20	5.0	5.0	✓
Conductivity in Water	E100	513398	1	10	10.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	513441	1	17	5.8	5.0	✓
Fluoride in Water by IC	E235.F	513403	1	6	16.6	5.0	✓
Free Cyanide	E339	518976	1	16	6.2	5.0	✓
Nitrate in Water by IC	E235.NO3	513401	1	20	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2	513402	1	20	5.0	5.0	✓
pH by Meter	E108	513397	1	10	10.0	5.0	✓
Sulfate in Water by IC	E235.SO4	513399	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	513917	1	19	5.2	5.0	✓
Total Cyanide	E333	518975	1	16	6.2	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	542127	1	14	7.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	513193	1	14	7.1	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Total Methylmercury in Water by GCAFS	E536	523523	2	32	6.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	515193	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	513921	1	7	14.2	4.7	✓
WAD Cyanide	E336	518974	1	20	5.0	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	513395	1	6	16.6	5.0	✓
Alkalinity Species by Titration	E290	513396	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	513212	2	34	5.8	5.0	✓
Chloride in Water by IC	E235.Cl	513400	1	20	5.0	5.0	✓
Conductivity in Water	E100	513398	1	10	10.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	513441	1	17	5.8	5.0	✓
Fluoride in Water by IC	E235.F	513403	1	6	16.6	5.0	✓
Free Cyanide	E339	518976	1	16	6.2	5.0	✓
Nitrate in Water by IC	E235.NO3	513401	1	20	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2	513402	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	513399	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	513917	1	19	5.2	5.0	✓
Total Cyanide	E333	518975	1	16	6.2	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	542127	1	14	7.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	513193	1	14	7.1	5.0	✓
Total Methylmercury in Water by GCAFS	E536	523523	2	32	6.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	515193	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	513921	1	7	14.2	4.7	✓
WAD Cyanide	E336	518974	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	513212	2	34	5.8	5.0	✓
Chloride in Water by IC	E235.Cl	513400	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	513441	1	17	5.8	5.0	✓
Fluoride in Water by IC	E235.F	513403	1	6	16.6	5.0	✓
Free Cyanide	E339	518976	1	16	6.2	5.0	✓
Nitrate in Water by IC	E235.NO3	513401	1	20	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2	513402	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	513399	1	20	5.0	5.0	✓
Total Cyanide	E333	518975	1	16	6.2	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	542127	1	14	7.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	513193	1	14	7.1	5.0	✓
Total Methylmercury in Water by GCAFS	E536	523523	2	32	6.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	515193	1	20	5.0	5.0	✓
WAD Cyanide	E336	518974	1	20	5.0	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Waterloo - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Waterloo - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry	E160 Waterloo - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Waterloo - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Chloride in Water by IC	E235.Cl Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC	E235.NO2 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC	E235.NO3 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Waterloo - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Waterloo - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Waterloo - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Cyanide	E333 Waterloo - Environmental	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336 Waterloo - Environmental	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339 Waterloo - Environmental	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Waterloo - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total Metals in Water by CRC ICPMS	E420 Waterloo - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 Waterloo - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Total Methylmercury in Water by GCAFS	E536 Vancouver - Environmental	Water	EPA 1630 (mod)	This method follows Method 1630 of the US EPA. Samples are distilled under an inert gas flow to isolate methylmercury and minimize matrix interferences. The distillate is analyzed by aqueous phase ethylation, purge and trap, desorption and GC separation. The separated species are then pyrolized to elemental Hg and quantified by cold vapour atomic flourescence spectroscopy. Results are reported "as MeHg".

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Hardness (Calculated)	EC100 Waterloo - Environmental	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Waterloo - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for Total Phosphorus in water	EP372 Waterloo - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Waterloo - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Total Methylmercury Water Preparation	EP536 Vancouver - Environmental	Water	EPA 1630	This method follows Method 1630 of the US EPA. Samples are distilled under an inert gas flow to isolate methylmercury and minimize matrix interferences. The distillate is analyzed by aqueous phase ethylation, purge and trap, desorption and GC separation. The separated species are then pyrolized to elemental Hg and quantified by cold vapour atomic flourescence spectroscopy. Results are reported "as MeHg".

QUALITY CONTROL REPORT

Work Order	: **WT2205034**	Page	: 1 of 18
Client	: Wood Canada Limited	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 2020 Winston Park Drive Suite 600 Mississauga ON Canada L6H 6X7	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2002.2021C.400.5120.573000	Date Samples Received	: 03-Jun-2022 13:20
PO	: C026300187	Date Analysis Commenced	: 06-Jun-2022
C-O-C number	: 20-1000905	Issue Date	: 05-Jul-2022 08:44
Sampler	: ----		
Site	: ----		
Quote number	: OMEMA2002		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Greg Pokocky	Supervisor - Inorganic	Waterloo Inorganics, Waterloo, Ontario
Jon Fisher	Department Manager - Inorganics	Waterloo Inorganics, Waterloo, Ontario
Jon Fisher	Department Manager - Inorganics	Waterloo Metals, Waterloo, Ontario
Kinny Wu	Lab Analyst	Vancouver Metals, Burnaby, British Columbia
Lilo Wang	Lab Analyst	Vancouver Metals, Burnaby, British Columbia
Woochan Song	Lab Analyst	Vancouver Metals, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 513395)											
WT2205034-006	NDR-MARLK	acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 513396)											
WT2205019-010	Anonymous	alkalinity, total (as CaCO3)	----	E290	2.0	mg/L	422	404	4.23%	20%	----
Physical Tests (QC Lot: 513397)											
WT2205019-010	Anonymous	pH	----	E108	0.10	pH units	8.00	8.00	0	Diff <2x LOR	----
Physical Tests (QC Lot: 513398)											
WT2205019-010	Anonymous	conductivity	----	E100	2.0	µS/cm	780	778	0.257%	10%	----
Physical Tests (QC Lot: 513917)											
WT2205034-003	NDR-DAVLK	solids, total dissolved [TDS]	----	E162	20	mg/L	98	97	0.5	Diff <2x LOR	----
Physical Tests (QC Lot: 513921)											
WT2205034-003	NDR-DAVLK	solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 513212)											
WT2204980-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.315	0.318	1.04%	20%	----
Anions and Nutrients (QC Lot: 513399)											
WT2205034-003	NDR-DAVLK	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	2.48	2.48	0.004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 513400)											
WT2205034-003	NDR-DAVLK	chloride	16887-00-6	E235.Cl	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 513401)											
WT2205034-003	NDR-DAVLK	nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 513402)											
WT2205034-003	NDR-DAVLK	nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 513403)											
WT2205034-003	NDR-DAVLK	fluoride	16984-48-8	E235.F	0.020	mg/L	0.032	0.031	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 514846)											
WT2205019-011	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 515193)											
WT2205042-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0155	0.0174	0.0020	Diff <2x LOR	----
Cyanides (QC Lot: 518974)											
EO2204007-017	Anonymous	cyanide, weak acid dissociable	----	E336	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Cyanides (QC Lot: 518975)											
WT2204941-001	Anonymous	cyanide, strong acid dissociable (total)	----	E333	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Cyanides (QC Lot: 518976)											
WT2204941-001	Anonymous	cyanide, free	----	E339	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Total Metals (QC Lot: 513193)											
WT2205000-001	Anonymous	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0065	0.0056	0.0010	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	0.00030	0.00030	0.000002	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00158	0.00150	4.99%	20%	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.182	0.190	4.12%	20%	----
		beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	0.016	0.017	0.0004	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000122	0.0000145	0.0000023	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.050	mg/L	84.5	87.8	3.89%	20%	----
		cesium, total	7440-46-2	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		chromium, total	7440-47-3	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	0.00018	0.00017	0.000005	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	0.00681	0.00674	1.11%	20%	----
		iron, total	7439-89-6	E420	0.010	mg/L	0.142	0.141	0.378%	20%	----
		lead, total	7439-92-1	E420	0.000050	mg/L	0.00101	0.00101	0.495%	20%	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.0055	0.0057	0.0002	Diff <2x LOR	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	38.5	37.7	2.10%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.00795	0.00775	2.54%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00164	0.00164	0.128%	20%	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	0.00156	0.00156	0.000008	Diff <2x LOR	----
		phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.050	mg/L	1.58	1.58	0.0188%	20%	----
		rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00114	0.00115	0.000007	Diff <2x LOR	----
		selenium, total	7782-49-2	E420	0.000050	mg/L	0.000186	0.000188	0.000002	Diff <2x LOR	----
		silicon, total	7440-21-3	E420	0.10	mg/L	7.46	7.42	0.545%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	22.1	21.6	2.61%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.239	0.242	1.41%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	15.9	15.9	0.0346%	20%	----
		tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 513193) - continued											
WT2205000-001	Anonymous	titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.000676	0.000674	0.193%	20%	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	0.0252	0.0244	0.0008	Diff <2x LOR	----
		zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 542127)											
WP2200807-001	Anonymous	mercury, total	7439-97-6	E508-L	0.50	ng/L	6.23	5.74	8.09%	20%	----
Dissolved Metals (QC Lot: 513441)											
WT2204977-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0037	0.0035	0.0001	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.37 µg/L	0.00038	0.00001	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.74 µg/L	0.00073	0.00001	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	313 µg/L	0.316	0.922%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.020 µg/L	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	44 µg/L	0.044	0.0005	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0078 µg/L	0.0000075	0.0000003	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	88.0	87.0	1.17%	20%	----
		cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.50 µg/L	<0.00050	0	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.67 µg/L	0.00068	0.000009	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.65 µg/L	0.00065	0.000002	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.050 µg/L	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0369	0.0376	1.96%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	62.8	62.8	0.0544%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0990	0.0988	0.252%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	3.11 µg/L	0.00322	3.43%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	1.72 µg/L	0.00176	0.00005	Diff <2x LOR	----
		phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	5.33	5.69	6.66%	20%	----
		rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00137	0.00138	0.00001	Diff <2x LOR	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.884 µg/L	0.000899	1.64%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	7.72	7.35	4.89%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.010 µg/L	<0.000010	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 513441) - continued											
WT2204977-001	Anonymous	sodium, dissolved	7440-23-5	E421	0.050	mg/L	31500 µg/L	31.6	0.245%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.782	0.792	1.28%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	45.5	45.6	0.122%	20%	----
		tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.010 µg/L	0.000010	0.0000005	Diff <2x LOR	----
		thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	0.00032	0.00033	0.00001	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	7.19 µg/L	0.00717	0.273%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	0.52 µg/L	<0.00050	0.00002	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	1.0 µg/L	<0.0010	0.0000009	Diff <2x LOR	----
		zirconium, dissolved	7440-67-7	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 523523)											
VA22B1331-001	Anonymous	methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L	0.000152	0.000162	0.000010	Diff <2x LOR	----
Speciated Metals (QC Lot: 544123)											
FJ2201421-007	Anonymous	methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L	<0.000020	<0.000020	0	Diff <2x LOR	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 513395)						
acidity (as CaCO3)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 513396)						
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 513398)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 513917)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 513921)						
solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Anions and Nutrients (QCLot: 513212)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 513399)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 513400)						
chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 513401)						
nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 513402)						
nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 513403)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 514846)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 515193)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 518974)						
cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 518975)						
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 518976)						
cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Total Metals (QCLot: 513193)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 513193) - continued						
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 513193) - continued						
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----
Total Metals (QCLot: 542127)						
mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Dissolved Metals (QCLot: 513441)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 513441) - continued						
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Speciated Metals (QCLot: 523523)						
methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	<0.000020	----
Speciated Metals (QCLot: 544123)						
methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	<0.000020	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 513395)									
acidity (as CaCO3)	----	E283	2	mg/L	50 mg/L	102	85.0	115	----
Physical Tests (QCLot: 513396)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	150 mg/L	102	85.0	115	----
Physical Tests (QCLot: 513397)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 513398)									
conductivity	----	E100	1	µS/cm	1409 µS/cm	99.6	90.0	110	----
Physical Tests (QCLot: 513917)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	95.8	85.0	115	----
Physical Tests (QCLot: 513921)									
solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	108	85.0	115	----
Anions and Nutrients (QCLot: 513212)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 513399)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 513400)									
chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	99.7	90.0	110	----
Anions and Nutrients (QCLot: 513401)									
nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	98.6	90.0	110	----
Anions and Nutrients (QCLot: 513402)									
nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	99.6	90.0	110	----
Anions and Nutrients (QCLot: 513403)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.8	90.0	110	----
Anions and Nutrients (QCLot: 514846)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	106	85.0	115	----
Anions and Nutrients (QCLot: 515193)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.431 mg/L	100	80.0	120	----
Cyanides (QCLot: 518974)									
cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	113	80.0	120	----
Cyanides (QCLot: 518975)									
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	0.25 mg/L	102	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Cyanides (QCLot: 518976)									
cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	107	80.0	120	----
Total Metals (QCLot: 513193)									
aluminum, total	7429-90-5	E420	0.003	mg/L	0.1 mg/L	102	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	0.05 mg/L	101	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	0.05 mg/L	98.1	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.0125 mg/L	106	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.005 mg/L	97.6	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	0.05 mg/L	104	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	0.05 mg/L	97.4	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.005 mg/L	99.9	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	2.5 mg/L	103	80.0	120	----
cesium, total	7440-46-2	E420	0.00001	mg/L	0.0025 mg/L	102	80.0	120	----
chromium, total	7440-47-3	E420	0.0005	mg/L	0.0125 mg/L	101	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.0125 mg/L	97.9	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.0125 mg/L	98.4	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	0.05 mg/L	102	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.025 mg/L	106	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.0125 mg/L	102	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	2.5 mg/L	108	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.0125 mg/L	100	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.0125 mg/L	99.2	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.025 mg/L	99.6	80.0	120	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	0.5 mg/L	101	70.0	130	----
potassium, total	7440-09-7	E420	0.05	mg/L	2.5 mg/L	101	80.0	120	----
rubidium, total	7440-17-7	E420	0.0002	mg/L	0.005 mg/L	106	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	0.05 mg/L	94.8	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	0.5 mg/L	99.8	60.0	140	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.005 mg/L	95.1	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	2.5 mg/L	104	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.0125 mg/L	105	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	2.5 mg/L	92.2	80.0	120	----
tellurium, total	13494-80-9	E420	0.0002	mg/L	0.005 mg/L	91.6	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	0.05 mg/L	106	80.0	120	----
thorium, total	7440-29-1	E420	0.0001	mg/L	0.005 mg/L	106	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.025 mg/L	98.5	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.0125 mg/L	98.7	80.0	120	----
tungsten, total	7440-33-7	E420	0.0001	mg/L	0.005 mg/L	101	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 513193) - continued									
uranium, total	7440-61-1	E420	0.00001	mg/L	0.00025 mg/L	105	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.025 mg/L	103	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.025 mg/L	95.4	80.0	120	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	0.005 mg/L	98.4	80.0	120	----
Total Metals (QCLot: 542127)									
mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	101	80.0	120	----
Dissolved Metals (QCLot: 513441)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	0.1 mg/L	105	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	0.05 mg/L	97.4	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	0.05 mg/L	98.0	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.0125 mg/L	100	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.005 mg/L	101	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	0.05 mg/L	97.6	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	0.05 mg/L	102	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.005 mg/L	98.8	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	2.5 mg/L	104	80.0	120	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.0025 mg/L	99.7	80.0	120	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.0125 mg/L	103	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.0125 mg/L	102	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.0125 mg/L	99.9	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	0.05 mg/L	102	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.025 mg/L	99.6	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.0125 mg/L	102	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	2.5 mg/L	112	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.0125 mg/L	103	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.0125 mg/L	100	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.025 mg/L	101	80.0	120	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	0.5 mg/L	101	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	2.5 mg/L	107	80.0	120	----
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.005 mg/L	108	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	0.05 mg/L	91.5	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	0.5 mg/L	104	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.005 mg/L	93.3	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	2.5 mg/L	105	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.0125 mg/L	99.4	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	2.5 mg/L	101	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 513441) - continued									
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.005 mg/L	88.9	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	0.05 mg/L	98.1	80.0	120	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.005 mg/L	99.6	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.025 mg/L	101	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.0125 mg/L	100	80.0	120	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.005 mg/L	97.6	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.00025 mg/L	102	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.025 mg/L	104	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.025 mg/L	97.8	80.0	120	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.005 mg/L	96.7	80.0	120	----
Speciated Metals (QCLot: 523523)									
methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	0.0025 µg/L	83.5	70.0	130	----
Speciated Metals (QCLot: 544123)									
methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	0.0025 µg/L	94.4	70.0	130	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 513212)										
WT2204980-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	ND mg/L	0.1 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 513399)										
WT2205034-003	NDR-DAVLK	sulfate (as SO4)	14808-79-8	E235.SO4	99.2 mg/L	100 mg/L	99.2	75.0	125	----
Anions and Nutrients (QCLot: 513400)										
WT2205034-003	NDR-DAVLK	chloride	16887-00-6	E235.Cl	98.0 mg/L	100 mg/L	98.0	75.0	125	----
Anions and Nutrients (QCLot: 513401)										
WT2205034-003	NDR-DAVLK	nitrate (as N)	14797-55-8	E235.NO3	2.37 mg/L	2.5 mg/L	94.7	75.0	125	----
Anions and Nutrients (QCLot: 513402)										
WT2205034-003	NDR-DAVLK	nitrite (as N)	14797-65-0	E235.NO2	0.486 mg/L	0.5 mg/L	97.2	75.0	125	----
Anions and Nutrients (QCLot: 513403)										
WT2205034-003	NDR-DAVLK	fluoride	16984-48-8	E235.F	0.985 mg/L	1 mg/L	98.5	75.0	125	----
Anions and Nutrients (QCLot: 514846)										
WT2205019-011	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.112 mg/L	0.1 mg/L	112	75.0	125	----
Anions and Nutrients (QCLot: 515193)										
WT2205042-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0958 mg/L	0.1 mg/L	95.8	70.0	130	----
Cyanides (QCLot: 518974)										
EO2204007-017	Anonymous	cyanide, weak acid dissociable	----	E336	0.147 mg/L	0.125 mg/L	117	70.0	130	----
Cyanides (QCLot: 518975)										
WT2204941-001	Anonymous	cyanide, strong acid dissociable (total)	----	E333	0.246 mg/L	0.25 mg/L	98.6	70.0	130	----
Cyanides (QCLot: 518976)										
WT2204941-001	Anonymous	cyanide, free	----	E339	0.155 mg/L	0.125 mg/L	124	70.0	730	----
Total Metals (QCLot: 513193)										
WT2205000-002	Anonymous	aluminum, total	7429-90-5	E420	0.104 mg/L	0.1 mg/L	104	70.0	130	----
		antimony, total	7440-36-0	E420	0.0555 mg/L	0.05 mg/L	111	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0516 mg/L	0.05 mg/L	103	70.0	130	----
		barium, total	7440-39-3	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		beryllium, total	7440-41-7	E420	0.00489 mg/L	0.005 mg/L	97.7	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0504 mg/L	0.05 mg/L	101	70.0	130	----
		boron, total	7440-42-8	E420	0.047 mg/L	0.05 mg/L	95.0	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 513193) - continued										
WT2205000-002	Anonymous	cadmium, total	7440-43-9	E420	0.00521 mg/L	0.005 mg/L	104	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		cesium, total	7440-46-2	E420	0.00261 mg/L	0.0025 mg/L	104	70.0	130	----
		chromium, total	7440-47-3	E420	0.0128 mg/L	0.0125 mg/L	102	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0119 mg/L	0.0125 mg/L	95.5	70.0	130	----
		copper, total	7440-50-8	E420	0.0120 mg/L	0.0125 mg/L	95.7	70.0	130	----
		iron, total	7439-89-6	E420	ND mg/L	0.05 mg/L	ND	70.0	130	----
		lead, total	7439-92-1	E420	0.0257 mg/L	0.025 mg/L	103	70.0	130	----
		lithium, total	7439-93-2	E420	0.0120 mg/L	0.0125 mg/L	96.0	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.0120 mg/L	0.0125 mg/L	96.1	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0130 mg/L	0.0125 mg/L	104	70.0	130	----
		nickel, total	7440-02-0	E420	0.0242 mg/L	0.025 mg/L	96.9	70.0	130	----
		phosphorus, total	7723-14-0	E420	0.513 mg/L	0.5 mg/L	103	70.0	130	----
		potassium, total	7440-09-7	E420	2.69 mg/L	2.5 mg/L	108	70.0	130	----
		rubidium, total	7440-17-7	E420	0.00528 mg/L	0.005 mg/L	106	70.0	130	----
		selenium, total	7782-49-2	E420	0.0507 mg/L	0.05 mg/L	101	70.0	130	----
		silicon, total	7440-21-3	E420	ND mg/L	0.5 mg/L	ND	70.0	130	----
		silver, total	7440-22-4	E420	0.00478 mg/L	0.005 mg/L	95.5	70.0	130	----
		sodium, total	7440-23-5	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		tellurium, total	13494-80-9	E420	0.00499 mg/L	0.005 mg/L	99.8	70.0	130	----
		thallium, total	7440-28-0	E420	0.0495 mg/L	0.05 mg/L	99.0	70.0	130	----
		thorium, total	7440-29-1	E420	0.00516 mg/L	0.005 mg/L	103	70.0	130	----
		tin, total	7440-31-5	E420	0.0256 mg/L	0.025 mg/L	102	70.0	130	----
		titanium, total	7440-32-6	E420	0.0127 mg/L	0.0125 mg/L	102	70.0	130	----
		tungsten, total	7440-33-7	E420	0.00497 mg/L	0.005 mg/L	99.5	70.0	130	----
		uranium, total	7440-61-1	E420	ND mg/L	0.00025 mg/L	ND	70.0	130	----
		vanadium, total	7440-62-2	E420	0.0261 mg/L	0.025 mg/L	104	70.0	130	----
		zinc, total	7440-66-6	E420	0.0234 mg/L	0.025 mg/L	93.5	70.0	130	----
		zirconium, total	7440-67-7	E420	0.00511 mg/L	0.005 mg/L	102	70.0	130	----
Total Metals (QCLot: 542127)										
WP2200807-002	Anonymous	mercury, total	7439-97-6	E508-L	ND ng/L	5 ng/L	ND	70.0	130	----
Dissolved Metals (QCLot: 513441)										
WT2204977-002	Anonymous	aluminum, dissolved	7429-90-5	E421	0.104 mg/L	0.1 mg/L	104	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 513441) - continued										
WT2204977-002	Anonymous	antimony, dissolved	7440-36-0	E421	0.0522 mg/L	0.05 mg/L	104	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0550 mg/L	0.05 mg/L	110	70.0	130	----
		barium, dissolved	7440-39-3	E421	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.00504 mg/L	0.005 mg/L	101	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0429 mg/L	0.05 mg/L	85.8	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.044 mg/L	0.05 mg/L	88.5	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00510 mg/L	0.005 mg/L	102	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		cesium, dissolved	7440-46-2	E421	0.00262 mg/L	0.0025 mg/L	105	70.0	130	----
		chromium, dissolved	7440-47-3	E421	0.0126 mg/L	0.0125 mg/L	101	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0122 mg/L	0.0125 mg/L	97.5	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0116 mg/L	0.0125 mg/L	92.6	70.0	130	----
		iron, dissolved	7439-89-6	E421	0.049 mg/L	0.05 mg/L	98.7	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0231 mg/L	0.025 mg/L	92.2	70.0	130	----
		lithium, dissolved	7439-93-2	E421	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0133 mg/L	0.0125 mg/L	106	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0237 mg/L	0.025 mg/L	94.9	70.0	130	----
		phosphorus, dissolved	7723-14-0	E421	0.575 mg/L	0.5 mg/L	115	70.0	130	----
		potassium, dissolved	7440-09-7	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		rubidium, dissolved	7440-17-7	E421	0.00518 mg/L	0.005 mg/L	104	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0578 mg/L	0.05 mg/L	116	70.0	130	----
		silicon, dissolved	7440-21-3	E421	ND mg/L	0.5 mg/L	ND	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00363 mg/L	0.005 mg/L	72.6	70.0	130	----
		sodium, dissolved	7440-23-5	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		tellurium, dissolved	13494-80-9	E421	0.00513 mg/L	0.005 mg/L	102	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0458 mg/L	0.05 mg/L	91.6	70.0	130	----
		thorium, dissolved	7440-29-1	E421	0.00462 mg/L	0.005 mg/L	92.5	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0260 mg/L	0.025 mg/L	104	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0129 mg/L	0.0125 mg/L	103	70.0	130	----
		tungsten, dissolved	7440-33-7	E421	0.00478 mg/L	0.005 mg/L	95.7	70.0	130	----
		uranium, dissolved	7440-61-1	E421	ND mg/L	0.00025 mg/L	ND	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.0263 mg/L	0.025 mg/L	105	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.0246 mg/L	0.025 mg/L	98.2	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 513441) - continued										
WT2204977-002	Anonymous	zirconium, dissolved	7440-67-7	E421	0.00513 mg/L	0.005 mg/L	103	70.0	130	----
Speciated Metals (QCLot: 523523)										
VA22B1464-002	Anonymous	methylmercury (as MeHg), total	22967-92-6	E536	0.00219 µg/L	0.0025 µg/L	87.8	70.0	130	----
Speciated Metals (QCLot: 544123)										
KS2201958-001	Anonymous	methylmercury (as MeHg), total	22967-92-6	E536	0.00228 µg/L	0.0025 µg/L	91.2	70.0	130	----

Chain of Custody (COC) / Analytical Request Form

COC Number: 20 - 94

COC Number: 20 - 1000005

ALS www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Page

Environmental Division Waterloo

Work Order Reference WT2205034

Telephone : +1 519 886 6910

Report To	Contact and company name below will appear on the final report
Company:	Wood PLC
Contact:	DALE KLODNICKI
Phone:	647-993-6243
	Company address below will appear on the final report
Street:	2020 Winston Park Dr, Suite 600
City/Province:	Oakville, ON
Postal Code:	L6H 6X7
Invoice To	Same as Report To ☒ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	
Contact:	

Reports / Recipients

Select Report Format: ☐ PDF ☐ EXCEL ☐ EDD (DIGITAL)

Merge QC/QCI Reports with COA ☐ YES ☐ NO ☐ N/A

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: dale.klodnicki@woodplc.com

Email 2: roxanne.dilabbaye@woodplc.com

Email 3:

Invoice Recipients

Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: dale.klodnicki@woodplc.com

Email 2:

Turnaround Time (TAT) Requested

☐ Routine [R] if received by 3pm M-F - no surcharges apply

☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum

☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum

☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum

☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum

☐ Same day [E2] if received by 10am M-S - 200% rush surcharge. Additic may apply to rush requests on weekends, statutory holidays and non-rout

Date and Time Required for all E&P TATs:

For all tests with rush TATs requested, please contact your AM to confirm availability.

Project Information

ALS Account # / Quote #: 21500

Job #: OMEMA2002

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (ALS use only): WT2205034

ALS Contact: Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	CN	DISS METALS FF	GEN CHEM	LOW LEVEL MERCURY	METHYL MERCURY	NH3/TP	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED
	NDR-GerLk	03-JUN-22	10:30	SW	1	-	-	-	-	-	-		
	NDR-JacLk		11:30										
	NDR-DavLk		09:30										
	CNC-DUP-02												
	NDR-P-03	02-JUN-22	10:30										
	NDR-MarLk2	11	09:50										

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☒ NO

Are samples for human consumption/ use? ☐ YES ☒ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☐ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				19			

SHIPMENT RELEASE (client use)

Released by: Roxanne D... Date: 03 JUN 2022 Time: 13:20

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by: Date: June 03/22 Time: 13:20

FINAL SHIPMENT RECEPTION (ALS use only)

Received by: BP Date: 06/06/22 Time: 1:00

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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

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

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

AUG 2020 FRONT

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WT2205383**	Page	: 1 of 6
Client	: **Wood Environment & Infrastructure Solutions Canada Limited**	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 2020 Winston Park Drive Suite 600 Mississauga ON Canada L6H 6X7	Address	: 60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2002.2021C.400.5120.573000	Date Samples Received	: 10-Jun-2022 10:00
PO	: C026300187	Date Analysis Commenced	: 10-Jun-2022
C-O-C number	: ----	Issue Date	: 18-Jul-2022 10:44
Sampler	: RD/DL		
Site	: ----		
Quote number	: OMEMA2002		
No. of samples received	: 2		
No. of samples analysed	: 2		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Hamideh Moradi	Analyst	Metals, Burnaby, British Columbia
Jon Fisher	Department Manager - Inorganics	Inorganics, Waterloo, Ontario
Jon Fisher	Department Manager - Inorganics	Metals, Waterloo, Ontario
Kinny Wu	Lab Analyst	Metals, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
mg/L	milligrams per litre
ng/L	nanograms per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

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

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	*Description*
DLDS	*Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.*

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MAT-R-01	MAT-R-02	----	----	----
					Client sampling date / time	08-Jun-2022 19:30	08-Jun-2022 19:00	----	----	----
						WT2205383-001	WT2205383-002	--------	--------	--------
						Result	Result	----	----	----
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L		<2.0	<2.0	----	----	----
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		39.9	38.3	----	----	----
conductivity	----	E100	1.0	µS/cm		82.8	83.1	----	----	----
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L		41.4	42.3	----	----	----
pH	----	E108	0.10	pH units		7.36	7.40	----	----	----
solids, total dissolved [TDS]	----	E162	10	mg/L		70 DLDS	66 DLDS	----	----	----
solids, total suspended [TSS]	----	E160	3.0	mg/L		5.0	6.4	----	----	----
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		0.0176	0.0203	----	----	----
chloride	16887-00-6	E235.Cl	0.50	mg/L		2.26	2.15	----	----	----
fluoride	16984-48-8	E235.F	0.020	mg/L		0.031	0.030	----	----	----
nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L		0.079	0.076	----	----	----
nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L		<0.010	<0.010	----	----	----
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L		0.0161	0.0157	----	----	----
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		2.55	2.54	----	----	----
Cyanides										
cyanide, free	----	E339	0.0020	mg/L		<0.0020	<0.0020	----	----	----
cyanide, strong acid dissociable (total)	----	E333	0.0020	mg/L		0.0029	<0.0020	----	----	----
cyanide, weak acid dissociable	----	E336	0.0020	mg/L		<0.0020	<0.0020	----	----	----
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L		0.308	0.318	----	----	----
antimony, total	7440-36-0	E420	0.00010	mg/L		<0.00010	<0.00010	----	----	----
arsenic, total	7440-38-2	E420	0.00010	mg/L		0.00059	0.00059	----	----	----
barium, total	7440-39-3	E420	0.00010	mg/L		0.00728	0.00714	----	----	----
beryllium, total	7440-41-7	E420	0.000020	mg/L		<0.000020	<0.000020	----	----	----
bismuth, total	7440-69-9	E420	0.000050	mg/L		<0.000050	<0.000050	----	----	----
boron, total	7440-42-8	E420	0.010	mg/L		<0.010	<0.010	----	----	----
cadmium, total	7440-43-9	E420	0.0000050	mg/L		0.0000126	0.0000146	----	----	----
calcium, total	7440-70-2	E420	0.050	mg/L		12.3	12.2	----	----	----
cesium, total	7440-46-2	E420	0.000010	mg/L		0.000032	0.000034	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)				Client sample ID	MAT-R-01	MAT-R-02	----	----	----
				Client sampling date / time	08-Jun-2022 19:30	08-Jun-2022 19:00	----	----	----
Analyte	CAS Number	Method	LOR	Unit	WT2205383-001	WT2205383-002	--------	--------	--------
					Result	Result	----	----	----
Total Metals									
chromium, total	7440-47-3	E420	0.00050	mg/L	0.00093	0.00089	----	----	----
cobalt, total	7440-48-4	E420	0.00010	mg/L	0.00022	0.00023	----	----	----
copper, total	7440-50-8	E420	0.00050	mg/L	0.00130	0.00130	----	----	----
iron, total	7439-89-6	E420	0.010	mg/L	0.462	0.472	----	----	----
lead, total	7439-92-1	E420	0.000050	mg/L	0.000190	0.000191	----	----	----
lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	<0.0010	----	----	----
magnesium, total	7439-95-4	E420	0.0050	mg/L	2.90	2.85	----	----	----
manganese, total	7439-96-5	E420	0.00010	mg/L	0.0297	0.0299	----	----	----
mercury, total	7439-97-6	E508-L	0.50	ng/L	3.62	6.89	----	----	----
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000105	0.000104	----	----	----
nickel, total	7440-02-0	E420	0.00050	mg/L	0.00077	0.00083	----	----	----
phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	----	----	----
potassium, total	7440-09-7	E420	0.050	mg/L	0.453	0.428	----	----	----
rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00142	0.00153	----	----	----
selenium, total	7782-49-2	E420	0.000050	mg/L	0.000093	0.000098	----	----	----
silicon, total	7440-21-3	E420	0.10	mg/L	2.70	2.75	----	----	----
silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	----	----	----
sodium, total	7440-23-5	E420	0.050	mg/L	2.11	2.22	----	----	----
strontium, total	7440-24-6	E420	0.00020	mg/L	0.0200	0.0208	----	----	----
sulfur, total	7704-34-9	E420	0.50	mg/L	1.06	1.00	----	----	----
tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	----	----	----
thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	----	----	----
thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	----	----	----
tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	----	----	----
titanium, total	7440-32-6	E420	0.00030	mg/L	0.0109	0.0116	----	----	----
tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	----	----	----
uranium, total	7440-61-1	E420	0.000010	mg/L	0.000080	0.000081	----	----	----
vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00090	0.00090	----	----	----
zinc, total	7440-66-6	E420	0.0030	mg/L	0.0036	0.0038	----	----	----
zirconium, total	7440-67-7	E420	0.00020	mg/L	0.00032	0.00033	----	----	----
Dissolved Metals									

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MAT-R-01	MAT-R-02	----	----	----
					Client sampling date / time	08-Jun-2022 19:30	08-Jun-2022 19:00	----	----	----
						WT2205383-001	WT2205383-002	--------	--------	--------
						Result	Result	----	----	----
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.0637	0.0606	----	----	----
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		<0.00010	<0.00010	----	----	----
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00052	0.00048	----	----	----
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.00555	0.00536	----	----	----
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L		<0.000020	<0.000020	----	----	----
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	----	----	----
boron, dissolved	7440-42-8	E421	0.010	mg/L		<0.010	<0.010	----	----	----
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		0.0000149	0.0000113	----	----	----
calcium, dissolved	7440-70-2	E421	0.050	mg/L		12.1	12.4	----	----	----
cesium, dissolved	7440-46-2	E421	0.000010	mg/L		<0.000010	<0.000010	----	----	----
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		<0.00050	<0.00050	----	----	----
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		<0.00010	<0.00010	----	----	----
copper, dissolved	7440-50-8	E421	0.00020	mg/L		0.00107	0.00100	----	----	----
iron, dissolved	7439-89-6	E421	0.010	mg/L		0.141	0.137	----	----	----
lead, dissolved	7439-92-1	E421	0.000050	mg/L		0.000056	<0.000050	----	----	----
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		<0.0010	<0.0010	----	----	----
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L		2.72	2.75	----	----	----
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.00951	0.00956	----	----	----
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		0.000086	0.000089	----	----	----
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		<0.00050	<0.00050	----	----	----
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	----	----	----
potassium, dissolved	7440-09-7	E421	0.050	mg/L		0.364	0.360	----	----	----
rubidium, dissolved	7440-17-7	E421	0.00020	mg/L		0.00112	0.00109	----	----	----
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.000094	0.000099	----	----	----
silicon, dissolved	7440-21-3	E421	0.050	mg/L		2.16	2.13	----	----	----
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	<0.000010	----	----	----
sodium, dissolved	7440-23-5	E421	0.050	mg/L		2.03	2.08	----	----	----
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		0.0207	0.0200	----	----	----
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		0.78	0.85	----	----	----
tellurium, dissolved	13494-80-9	E421	0.00020	mg/L		<0.00020	<0.00020	----	----	----
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	<0.000010	----	----	----

Analytical Results

Sub-Matrix: **Water** (Matrix: **Water**)					Client sample ID	**MAT-R-01**	**MAT-R-02**	**----**	**----**	**----**
					Client sampling date / time	08-Jun-2022 19:30	08-Jun-2022 19:00	----	----	----
Analyte	*CAS Number*	*Method*	*LOR*	*Unit*		**WT2205383-001**	**WT2205383-002**	--------	--------	--------
						Result	Result	----	----	----
Dissolved Metals										
thorium, dissolved	7440-29-1	E421	0.00010	mg/L		<0.00010	<0.00010	----	----	----
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	<0.00010	----	----	----
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		0.00126	0.00121	----	----	----
tungsten, dissolved	7440-33-7	E421	0.00010	mg/L		<0.00010	<0.00010	----	----	----
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		0.000074	0.000072	----	----	----
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		<0.00050	<0.00050	----	----	----
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		0.0020	0.0016	----	----	----
zirconium, dissolved	7440-67-7	E421	0.00030	mg/L		<0.00030	<0.00030	----	----	----
dissolved metals filtration location	----	EP421	-	-		Field	Field	----	----	----
Speciated Metals										
methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L		0.000141	0.000126	----	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WT2205411**	Page	: 1 of 10
Amendment	: **1**		
Client	: **Wood Environment & Infrastructure Solutions Canada Limited**	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 2020 Winston Park Drive Suite 600 Mississauga ON Canada L6H 6X7	Address	: 60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2002.2021C.400.5120.573000	Date Samples Received	: 10-Jun-2022 10:00
PO	: C026300187	Date Analysis Commenced	: 10-Jun-2022
C-O-C number	: ----	Issue Date	: 20-Jul-2022 17:20
Sampler	: ----		
Site	: ----		
Quote number	: OMEMA2002		
No. of samples received	: 8		
No. of samples analysed	: 8		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Greg Pokocky	Supervisor - Inorganic	Inorganics, Waterloo, Ontario
Hamideh Moradi	Analyst	Metals, Burnaby, British Columbia
Jon Fisher	Department Manager - Inorganics	Inorganics, Waterloo, Ontario
Jon Fisher	Department Manager - Inorganics	Metals, Waterloo, Ontario
Kinny Wu	Lab Analyst	Metals, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
mg/L	milligrams per litre
ng/L	nanograms per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

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

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Workorder Comments

Amendment (20/07/2022): This report has been amended and re-released to allow the reporting of additional analytical data.

Qualifiers

Qualifier	*Description*
DLDS	*Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.*

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	WBR-S-02	WBR-S-03	WBR-S-04	NDR-P-05	WBR-P-01
					Client sampling date / time	06-Jun-2022	06-Jun-2022	06-Jun-2022	06-Jun-2022	06-Jun-2022
						WT2205411-001	WT2205411-002	WT2205411-003	WT2205411-004	WT2205411-005
						Result	Result	Result	Result	Result
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L		2.4	2.3	2.3	2.5	2.3
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		17.6	20.8	17.1	20.8	20.8
conductivity	----	E100	1.0	µS/cm		40.9	44.3	40.4	46.9	44.1
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L		29.5	31.2	28.4	35.4	31.8
pH	----	E108	0.10	pH units		6.89	6.98	6.91	6.88	6.97
solids, total dissolved [TDS]	----	E162	10	mg/L		85	84	72	93 DLDS	83 DLDS
solids, total suspended [TSS]	----	E160	3.0	mg/L		<3.0	6.0	7.6	4.2	4.2
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		0.0159	0.0136	0.0153	0.0329	0.0129
bromide	24959-67-9	E235.Br	0.10	mg/L		<0.10	<0.10	<0.10	<0.10	<0.10
chloride	16887-00-6	E235.Cl	0.50	mg/L		<0.50	<0.50	<0.50	<0.50	<0.50
fluoride	16984-48-8	E235.F	0.020	mg/L		<0.020	<0.020	<0.020	<0.020	<0.020
nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L		0.022	0.027	0.020	<0.020	<0.020
nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L		0.0280	0.0449	0.0326	0.0442	0.0232
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		<0.30	<0.30	<0.30	<0.30	<0.30
Cyanides										
cyanide, free	----	E339	0.0020	mg/L		<0.0020	<0.0020	<0.0020	0.0022	<0.0020
cyanide, strong acid dissociable (total)	----	E333	0.0020	mg/L		0.0023	0.0021	0.0022	0.0029	<0.0020
cyanide, weak acid dissociable	----	E336	0.0020	mg/L		<0.0020	<0.0020	<0.0020	0.0024	<0.0020
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L		0.769	0.775	0.738	0.315	0.298
antimony, total	7440-36-0	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
arsenic, total	7440-38-2	E420	0.00010	mg/L		0.00117	0.00118	0.00111	0.00115	0.00091
barium, total	7440-39-3	E420	0.00010	mg/L		0.00868	0.00921	0.00860	0.00642	0.00618
beryllium, total	7440-41-7	E420	0.000020	mg/L		0.000035	0.000033	0.000033	<0.000020	<0.000020
bismuth, total	7440-69-9	E420	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, total	7440-42-8	E420	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
cadmium, total	7440-43-9	E420	0.0000050	mg/L		0.0000463	0.0000500	0.0000375	0.0000290	0.0000242
calcium, total	7440-70-2	E420	0.050	mg/L		8.40	9.08	8.14	9.92	8.29
cesium, total	7440-46-2	E420	0.000010	mg/L		0.000066	0.000065	0.000065	0.000013	0.000014

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	WBR-S-02	WBR-S-03	WBR-S-04	NDR-P-05	WBR-P-01
					Client sampling date / time	06-Jun-2022	06-Jun-2022	06-Jun-2022	06-Jun-2022	06-Jun-2022
						WT2205411-001	WT2205411-002	WT2205411-003	WT2205411-004	WT2205411-005
						Result	Result	Result	Result	Result
Total Metals										
chromium, total	7440-47-3	E420	0.00050	mg/L		0.00182	0.00184	0.00169	0.00092	0.00074
cobalt, total	7440-48-4	E420	0.00010	mg/L		0.00040	0.00042	0.00047	0.00025	0.00029
copper, total	7440-50-8	E420	0.00050	mg/L		0.00275	0.00245	0.00206	0.00191	0.00083
iron, total	7439-89-6	E420	0.010	mg/L		1.08	1.10	1.09	0.544	0.697
lead, total	7439-92-1	E420	0.000050	mg/L		0.000508	0.000523	0.000546	0.000338	0.000291
lithium, total	7439-93-2	E420	0.0010	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
magnesium, total	7439-95-4	E420	0.0050	mg/L		2.03	2.45	2.16	2.47	2.50
manganese, total	7439-96-5	E420	0.00010	mg/L		0.0473	0.0537	0.0804	0.0429	0.0593
mercury, total	7439-97-6	E508-L	0.50	ng/L		8.66	8.80	7.90	9.88	4.82
molybdenum, total	7439-98-7	E420	0.000050	mg/L		0.000055	<0.000050	0.000057	0.000066	0.000060
nickel, total	7440-02-0	E420	0.00050	mg/L		0.00152	0.00155	0.00145	0.00108	0.00081
phosphorus, total	7723-14-0	E420	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
potassium, total	7440-09-7	E420	0.050	mg/L		0.282	0.281	0.301	0.262	0.070
rubidium, total	7440-17-7	E420	0.00020	mg/L		0.00151	0.00148	0.00138	0.00062	0.00053
selenium, total	7782-49-2	E420	0.000050	mg/L		0.000164	0.000174	0.000156	0.000196	0.000120
silicon, total	7440-21-3	E420	0.10	mg/L		1.83	1.87	1.66	0.34	0.69
silver, total	7440-22-4	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, total	7440-23-5	E420	0.050	mg/L		0.789	0.840	0.788	0.926	0.463
strontium, total	7440-24-6	E420	0.00020	mg/L		0.0189	0.0204	0.0183	0.0214	0.0162
sulfur, total	7704-34-9	E420	0.50	mg/L		<0.50	<0.50	<0.50	<0.50	<0.50
tellurium, total	13494-80-9	E420	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
thallium, total	7440-28-0	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
thorium, total	7440-29-1	E420	0.00010	mg/L		0.00017	0.00015	0.00014	<0.00010	<0.00010
tin, total	7440-31-5	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, total	7440-32-6	E420	0.00030	mg/L		0.0267	0.0277	0.0262	0.00755	0.00834
tungsten, total	7440-33-7	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
uranium, total	7440-61-1	E420	0.000010	mg/L		0.000065	0.000064	0.000055	0.000025	0.000043
vanadium, total	7440-62-2	E420	0.00050	mg/L		0.00178	0.00178	0.00166	0.00072	0.00087
zinc, total	7440-66-6	E420	0.0030	mg/L		0.0078	0.0081	0.0136	0.0337	0.0057
zirconium, total	7440-67-7	E420	0.00020	mg/L		0.00079	0.00078	0.00065	0.00038	0.00032
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.297	0.321	0.235	0.215	0.204

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	WBR-S-02	WBR-S-03	WBR-S-04	NDR-P-05	WBR-P-01
					Client sampling date / time	06-Jun-2022	06-Jun-2022	06-Jun-2022	06-Jun-2022	06-Jun-2022
						WT2205411-001	WT2205411-002	WT2205411-003	WT2205411-004	WT2205411-005
						Result	Result	Result	Result	Result
Dissolved Metals										
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00121	0.00122	0.00106	0.00119	0.00100
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.00669	0.00642	0.00529	0.00483	0.00575
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L		0.000026	0.000024	<0.000020	<0.000020	0.000020
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, dissolved	7440-42-8	E421	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		0.0000534	0.0000345	0.0000314	0.0000227	0.0000178
calcium, dissolved	7440-70-2	E421	0.050	mg/L		8.71	9.13	8.28	10.4	8.86
cesium, dissolved	7440-46-2	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		0.00080	0.00082	0.00063	0.00062	0.00056
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		0.00025	0.00015	0.00018	0.00014	0.00026
copper, dissolved	7440-50-8	E421	0.00020	mg/L		0.00232	0.00222	0.00155	0.00127	0.00084
iron, dissolved	7439-89-6	E421	0.010	mg/L		0.560	0.542	0.494	0.396	0.571
lead, dissolved	7439-92-1	E421	0.000050	mg/L		0.000380	0.000330	0.000272	0.000159	0.000259
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L		1.88	2.04	1.88	2.28	2.35
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.0966	0.0427	0.0581	0.0287	0.0588
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		<0.000050	0.000053	<0.000050	<0.000050	0.000051
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		0.00089	0.00084	0.00070	0.00076	0.00068
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
potassium, dissolved	7440-09-7	E421	0.050	mg/L		0.148	0.171	0.104	0.110	<0.050
rubidium, dissolved	7440-17-7	E421	0.00020	mg/L		0.00062	0.00069	0.00043	0.00030	0.00031
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.000198	0.000200	0.000173	0.000213	0.000157
silicon, dissolved	7440-21-3	E421	0.050	mg/L		0.848	1.04	0.651	0.066	0.452
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, dissolved	7440-23-5	E421	0.050	mg/L		0.741	0.774	0.634	0.716	0.447
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		0.0191	0.0190	0.0170	0.0214	0.0163
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		<0.50	<0.50	<0.50	<0.50	<0.50
tellurium, dissolved	13494-80-9	E421	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
thorium, dissolved	7440-29-1	E421	0.00010	mg/L		0.00014	0.00017	0.00011	<0.00010	<0.00010
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	WBR-S-02	WBR-S-03	WBR-S-04	NDR-P-05	WBR-P-01
					Client sampling date / time	06-Jun-2022	06-Jun-2022	06-Jun-2022	06-Jun-2022	06-Jun-2022
						WT2205411-001	WT2205411-002	WT2205411-003	WT2205411-004	WT2205411-005
						Result	Result	Result	Result	Result
Dissolved Metals										
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		0.00810	0.0100	0.00591	0.00268	0.00501
tungsten, dissolved	7440-33-7	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		0.000062	0.000063	0.000046	0.000020	0.000042
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		0.00089	0.00088	0.00069	<0.00050	0.00064
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		0.0089	0.0079	0.0065	0.0123	0.0063
zirconium, dissolved	7440-67-7	E421	0.00030	mg/L		0.00070	0.00077	0.00051	0.00040	0.00041
dissolved metals filtration location	----	EP421	-	-		Field	Field	Field	Field	Field
Speciated Metals										
methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L		0.000206	0.000248	0.000206	0.000413	0.000187

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-S-02	NDR-TRIB-02	NDR-TRIB-01	----	----
					Client sampling date / time	07-Jun-2022	07-Jun-2022	07-Jun-2022	----	----
						WT2205411-006	WT2205411-007	WT2205411-008	--------	--------
						Result	Result	Result	----	----
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L		<2.0	3.3	<2.0	----	----
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		30.9	8.5	45.3	----	----
conductivity	----	E100	1.0	µS/cm		72.5	30.0	85.2	----	----
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L		42.6	22.3	49.0	----	----
pH	----	E108	0.10	pH units		7.13	6.42	7.32	----	----
solids, total dissolved [TDS]	----	E162	10	mg/L		93 DLDS	62	74 DLDS	----	----
solids, total suspended [TSS]	----	E160	3.0	mg/L		9.2	4.6	6.6	----	----
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		0.0216	0.0150	0.0116	----	----
bromide	24959-67-9	E235.Br	0.10	mg/L		<0.10	<0.10	<0.10	----	----
chloride	16887-00-6	E235.Cl	0.50	mg/L		3.17	<0.50	<0.50	----	----
fluoride	16984-48-8	E235.F	0.020	mg/L		0.020	<0.020	0.024	----	----
nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L		<0.020	<0.020	<0.020	----	----
nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L		<0.010	<0.010	<0.010	----	----
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L		0.0158	0.0133	0.0155	----	----
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		<0.30	<0.30	<0.30	----	----
Cyanides										
cyanide, free	----	E339	0.0020	mg/L		<0.0020	<0.0020	<0.0020	----	----
cyanide, strong acid dissociable (total)	----	E333	0.0020	mg/L		<0.0020	<0.0020	<0.0020	----	----
cyanide, weak acid dissociable	----	E336	0.0020	mg/L		<0.0020	<0.0020	<0.0020	----	----
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L		0.241	0.202	0.0724	----	----
antimony, total	7440-36-0	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
arsenic, total	7440-38-2	E420	0.00010	mg/L		0.00094	0.00084	0.00057	----	----
barium, total	7440-39-3	E420	0.00010	mg/L		0.00615	0.00664	0.00607	----	----
beryllium, total	7440-41-7	E420	0.000020	mg/L		<0.000020	<0.000020	<0.000020	----	----
bismuth, total	7440-69-9	E420	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
boron, total	7440-42-8	E420	0.010	mg/L		<0.010	<0.010	<0.010	----	----
cadmium, total	7440-43-9	E420	0.0000050	mg/L		0.0000193	0.0000354	0.0000084	----	----
calcium, total	7440-70-2	E420	0.050	mg/L		12.4	6.02	13.4	----	----
cesium, total	7440-46-2	E420	0.000010	mg/L		<0.000010	0.000013	<0.000010	----	----
chromium, total	7440-47-3	E420	0.00050	mg/L		0.00076	0.00059	<0.00050	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-S-02	NDR-TRIB-02	NDR-TRIB-01	----	----
					Client sampling date / time	07-Jun-2022	07-Jun-2022	07-Jun-2022	----	----
						WT2205411-006	WT2205411-007	WT2205411-008	--------	--------
						Result	Result	Result	----	----
Total Metals										
cobalt, total	7440-48-4	E420	0.00010	mg/L		0.00021	0.00051	<0.00010	----	----
copper, total	7440-50-8	E420	0.00050	mg/L		0.00108	0.00067	0.00058	----	----
iron, total	7439-89-6	E420	0.010	mg/L		0.568	0.640	0.254	----	----
lead, total	7439-92-1	E420	0.000050	mg/L		0.000203	0.000656	0.000065	----	----
lithium, total	7439-93-2	E420	0.0010	mg/L		<0.0010	<0.0010	<0.0010	----	----
magnesium, total	7439-95-4	E420	0.0050	mg/L		3.20	1.75	3.70	----	----
manganese, total	7439-96-5	E420	0.00010	mg/L		0.0675	0.121	0.0447	----	----
mercury, total	7439-97-6	E508-L	0.50	ng/L		7.48	4.98	5.22	----	----
molybdenum, total	7439-98-7	E420	0.000050	mg/L		0.000065	<0.000050	0.000055	----	----
nickel, total	7440-02-0	E420	0.00050	mg/L		0.00081	0.00063	<0.00050	----	----
phosphorus, total	7723-14-0	E420	0.050	mg/L		<0.050	0.055	<0.050	----	----
potassium, total	7440-09-7	E420	0.050	mg/L		0.185	0.230	0.320	----	----
rubidium, total	7440-17-7	E420	0.00020	mg/L		0.00055	0.00087	0.00068	----	----
selenium, total	7782-49-2	E420	0.000050	mg/L		0.000153	0.000131	0.000078	----	----
silicon, total	7440-21-3	E420	0.10	mg/L		0.66	0.62	0.77	----	----
silver, total	7440-22-4	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
sodium, total	7440-23-5	E420	0.050	mg/L		2.83	0.495	0.982	----	----
strontium, total	7440-24-6	E420	0.00020	mg/L		0.0240	0.0128	0.0239	----	----
sulfur, total	7704-34-9	E420	0.50	mg/L		<0.50	<0.50	<0.50	----	----
tellurium, total	13494-80-9	E420	0.00020	mg/L		<0.00020	<0.00020	<0.00020	----	----
thallium, total	7440-28-0	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
thorium, total	7440-29-1	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
tin, total	7440-31-5	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
titanium, total	7440-32-6	E420	0.00030	mg/L		0.00674	0.00579	0.00202	----	----
tungsten, total	7440-33-7	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
uranium, total	7440-61-1	E420	0.000010	mg/L		0.000037	0.000020	0.000030	----	----
vanadium, total	7440-62-2	E420	0.00050	mg/L		0.00068	0.00054	<0.00050	----	----
zinc, total	7440-66-6	E420	0.0030	mg/L		0.0065	0.0112	0.0032	----	----
zirconium, total	7440-67-7	E420	0.00020	mg/L		0.00034	0.00020	<0.00020	----	----
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.167	0.163	0.0514	----	----
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-S-02	NDR-TRIB-02	NDR-TRIB-01	----	----
					Client sampling date / time	07-Jun-2022	07-Jun-2022	07-Jun-2022	----	----
						WT2205411-006	WT2205411-007	WT2205411-008	--------	--------
						Result	Result	Result	----	----
Dissolved Metals										
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00096	0.00086	0.00054	----	----
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.00639	0.00403	0.00610	----	----
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L		<0.000020	<0.000020	<0.000020	----	----
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
boron, dissolved	7440-42-8	E421	0.010	mg/L		<0.010	<0.010	<0.010	----	----
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		0.0000234	0.0000336	0.0000088	----	----
calcium, dissolved	7440-70-2	E421	0.050	mg/L		12.4	6.16	14.2	----	----
cesium, dissolved	7440-46-2	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		0.00056	<0.00050	<0.00050	----	----
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		0.00016	0.00016	<0.00010	----	----
copper, dissolved	7440-50-8	E421	0.00020	mg/L		0.00106	0.00059	0.00050	----	----
iron, dissolved	7439-89-6	E421	0.010	mg/L		0.433	0.472	0.198	----	----
lead, dissolved	7439-92-1	E421	0.000050	mg/L		0.000175	0.000363	<0.000050	----	----
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		<0.0010	<0.0010	<0.0010	----	----
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L		2.84	1.69	3.29	----	----
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.0651	0.0392	0.0314	----	----
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		0.000055	<0.000050	<0.000050	----	----
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		0.00065	0.00052	<0.00050	----	----
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	<0.050	----	----
potassium, dissolved	7440-09-7	E421	0.050	mg/L		0.151	0.050	0.295	----	----
rubidium, dissolved	7440-17-7	E421	0.00020	mg/L		0.00053	0.00022	0.00067	----	----
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.000175	0.000153	0.000102	----	----
silicon, dissolved	7440-21-3	E421	0.050	mg/L		0.480	0.490	0.642	----	----
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
sodium, dissolved	7440-23-5	E421	0.050	mg/L		2.70	0.482	0.923	----	----
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		0.0226	0.0131	0.0242	----	----
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		<0.50	<0.50	<0.50	----	----
tellurium, dissolved	13494-80-9	E421	0.00020	mg/L		<0.00020	<0.00020	<0.00020	----	----
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
thorium, dissolved	7440-29-1	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		0.00363	0.00425	0.00120	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-S-02	NDR-TRIB-02	NDR-TRIB-01	----	----
					Client sampling date / time	07-Jun-2022	07-Jun-2022	07-Jun-2022	----	----
						WT2205411-006	WT2205411-007	WT2205411-008	--------	--------
						Result	Result	Result	----	----
Dissolved Metals										
tungsten, dissolved	7440-33-7	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		0.000039	0.000018	0.000031	----	----
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		0.00053	<0.00050	<0.00050	----	----
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		0.0086	0.0097	0.0038	----	----
zirconium, dissolved	7440-67-7	E421	0.00030	mg/L		0.00037	<0.00030	<0.00030	----	----
dissolved metals filtration location	----	EP421	-	-		Field	Field	Field	----	----
Speciated Metals										
methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L		0.000283	0.000142	0.000184	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2205411**	Page	: 1 of 27
Amendment	: 1		
Client	: **Wood Environment & Infrastructure Solutions Canada Limited**	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 2020 Winston Park Drive Suite 600 Mississauga ON Canada L6H 6X7	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2002.2021C.400.5120.573000	Date Samples Received	: 10-Jun-2022 10:00
PO	: C026300187	Issue Date	: 20-Jul-2022 17:20
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: OMEMA2002		
No. of samples received	: 8		
No. of samples analysed	: 8		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
NDR-S-02	E298	07-Jun-2022	14-Jun-2022	----	----		14-Jun-2022	28 days	8 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
NDR-TRIB-01	E298	07-Jun-2022	14-Jun-2022	----	----		14-Jun-2022	28 days	8 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
NDR-TRIB-02	E298	07-Jun-2022	14-Jun-2022	----	----		14-Jun-2022	28 days	8 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
WBR-S-02	E298	06-Jun-2022	14-Jun-2022	----	----		14-Jun-2022	28 days	8 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
WBR-S-03	E298	06-Jun-2022	14-Jun-2022	----	----		14-Jun-2022	28 days	8 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
WBR-S-04	E298	06-Jun-2022	14-Jun-2022	----	----		14-Jun-2022	28 days	8 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
NDR-P-05	E298	06-Jun-2022	14-Jun-2022	----	----		14-Jun-2022	28 days	9 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
WBR-P-01	E298	06-Jun-2022	14-Jun-2022	----	----		14-Jun-2022	28 days	9 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
NDR-S-02	E235.Br	07-Jun-2022	----	----	----		20-Jul-2022	28 days	44 days	× EHT
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
NDR-TRIB-01	E235.Br	07-Jun-2022	----	----	----		20-Jul-2022	28 days	44 days	× EHT
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
NDR-TRIB-02	E235.Br	07-Jun-2022	----	----	----		20-Jul-2022	28 days	44 days	× EHT
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
NDR-P-05	E235.Br	06-Jun-2022	----	----	----		20-Jul-2022	28 days	45 days	× EHT
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
WBR-P-01	E235.Br	06-Jun-2022	----	----	----		20-Jul-2022	28 days	45 days	× EHT
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
WBR-S-02	E235.Br	06-Jun-2022	----	----	----		20-Jul-2022	28 days	45 days	× EHT
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
WBR-S-03	E235.Br	06-Jun-2022	----	----	----		20-Jul-2022	28 days	45 days	× EHT
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
WBR-S-04	E235.Br	06-Jun-2022	----	----	----		20-Jul-2022	28 days	45 days	× EHT

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-S-02	E235.Cl	07-Jun-2022	----	----	----		13-Jun-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-TRIB-01	E235.Cl	07-Jun-2022	----	----	----		13-Jun-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-TRIB-02	E235.Cl	07-Jun-2022	----	----	----		13-Jun-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-P-05	E235.Cl	06-Jun-2022	----	----	----		13-Jun-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] WBR-P-01	E235.Cl	06-Jun-2022	----	----	----		13-Jun-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] WBR-S-02	E235.Cl	06-Jun-2022	----	----	----		13-Jun-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] WBR-S-03	E235.Cl	06-Jun-2022	----	----	----		13-Jun-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] WBR-S-04	E235.Cl	06-Jun-2022	----	----	----		13-Jun-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-S-02	E235.F	07-Jun-2022	----	----	----		13-Jun-2022	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-TRIB-01	E235.F	07-Jun-2022	----	----	----		13-Jun-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-TRIB-02	E235.F	07-Jun-2022	----	----	----		13-Jun-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-P-05	E235.F	06-Jun-2022	----	----	----		13-Jun-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] WBR-P-01	E235.F	06-Jun-2022	----	----	----		13-Jun-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] WBR-S-02	E235.F	06-Jun-2022	----	----	----		13-Jun-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] WBR-S-03	E235.F	06-Jun-2022	----	----	----		13-Jun-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] WBR-S-04	E235.F	06-Jun-2022	----	----	----		13-Jun-2022	28 days	8 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-S-02	E235.NO3	07-Jun-2022	----	----	----		13-Jun-2022	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-TRIB-01	E235.NO3	07-Jun-2022	----	----	----		13-Jun-2022	7 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-TRIB-02	E235.NO3	07-Jun-2022	----	----	----		13-Jun-2022	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-P-05	E235.NO3	06-Jun-2022	----	----	----		13-Jun-2022	7 days	8 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] WBR-P-01	E235.NO3	06-Jun-2022	----	----	----		13-Jun-2022	7 days	8 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] WBR-S-02	E235.NO3	06-Jun-2022	----	----	----		13-Jun-2022	7 days	8 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] WBR-S-03	E235.NO3	06-Jun-2022	----	----	----		13-Jun-2022	7 days	8 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] WBR-S-04	E235.NO3	06-Jun-2022	----	----	----		13-Jun-2022	7 days	8 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-S-02	E235.NO2	07-Jun-2022	----	----	----		13-Jun-2022	7 days	7 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-TRIB-01	E235.NO2	07-Jun-2022	----	----	----		13-Jun-2022	7 days	7 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-TRIB-02	E235.NO2	07-Jun-2022	----	----	----		13-Jun-2022	7 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-P-05	E235.NO2	06-Jun-2022	----	----	----		13-Jun-2022	7 days	8 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] WBR-P-01	E235.NO2	06-Jun-2022	----	----	----		13-Jun-2022	7 days	8 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] WBR-S-02	E235.NO2	06-Jun-2022	----	----	----		13-Jun-2022	7 days	8 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] WBR-S-03	E235.NO2	06-Jun-2022	----	----	----		13-Jun-2022	7 days	8 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] WBR-S-04	E235.NO2	06-Jun-2022	----	----	----		13-Jun-2022	7 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDR-S-02	E235.SO4	07-Jun-2022	----	----	----		13-Jun-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDR-TRIB-01	E235.SO4	07-Jun-2022	----	----	----		13-Jun-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDR-TRIB-02	E235.SO4	07-Jun-2022	----	----	----		13-Jun-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDR-P-05	E235.SO4	06-Jun-2022	----	----	----		13-Jun-2022	28 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
WBR-P-01	E235.SO4	06-Jun-2022	----	----	----		13-Jun-2022	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
WBR-S-02	E235.SO4	06-Jun-2022	----	----	----		13-Jun-2022	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
WBR-S-03	E235.SO4	06-Jun-2022	----	----	----		13-Jun-2022	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
WBR-S-04	E235.SO4	06-Jun-2022	----	----	----		13-Jun-2022	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
NDR-TRIB-01	E372-U	07-Jun-2022	15-Jun-2022	----	----		16-Jun-2022	28 days	10 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
NDR-TRIB-02	E372-U	07-Jun-2022	15-Jun-2022	----	----		16-Jun-2022	28 days	10 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
NDR-S-02	E372-U	07-Jun-2022	14-Jun-2022	----	----		14-Jun-2022	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
NDR-P-05	E372-U	06-Jun-2022	14-Jun-2022	----	----		14-Jun-2022	28 days	9 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
WBR-P-01	E372-U	06-Jun-2022	14-Jun-2022	----	----		14-Jun-2022	28 days	9 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
WBR-S-02	E372-U	06-Jun-2022	14-Jun-2022	----	----		14-Jun-2022	28 days	9 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
WBR-S-03	E372-U	06-Jun-2022	14-Jun-2022	----	----		14-Jun-2022	28 days	9 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
WBR-S-04	E372-U	06-Jun-2022	14-Jun-2022	----	----		14-Jun-2022	28 days	9 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
NDR-S-02	E339	07-Jun-2022	----	----	----		16-Jun-2022	14 days	10 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
NDR-TRIB-01	E339	07-Jun-2022	----	----	----		16-Jun-2022	14 days	10 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
NDR-TRIB-02	E339	07-Jun-2022	----	----	----		16-Jun-2022	14 days	10 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
NDR-P-05	E339	06-Jun-2022	----	----	----		16-Jun-2022	14 days	11 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
WBR-P-01	E339	06-Jun-2022	----	----	----		16-Jun-2022	14 days	11 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
WBR-S-02	E339	06-Jun-2022	----	----	----		16-Jun-2022	14 days	11 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
WBR-S-03	E339	06-Jun-2022	----	----	----		16-Jun-2022	14 days	11 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
WBR-S-04	E339	06-Jun-2022	----	----	----		16-Jun-2022	14 days	11 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide)										
NDR-S-02	E333	07-Jun-2022	----	----	----		16-Jun-2022	14 days	10 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide)										
NDR-TRIB-01	E333	07-Jun-2022	----	----	----		16-Jun-2022	14 days	10 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide)										
NDR-TRIB-02	E333	07-Jun-2022	----	----	----		16-Jun-2022	14 days	10 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide)										
NDR-P-05	E333	06-Jun-2022	----	----	----		16-Jun-2022	14 days	11 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide)										
WBR-P-01	E333	06-Jun-2022	----	----	----		16-Jun-2022	14 days	11 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide)										
WBR-S-02	E333	06-Jun-2022	----	----	----		16-Jun-2022	14 days	11 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide)										
WBR-S-03	E333	06-Jun-2022	----	----	----		16-Jun-2022	14 days	11 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide) WBR-S-04	E333	06-Jun-2022	----	----	----		16-Jun-2022	14 days	11 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) NDR-S-02	E336	07-Jun-2022	----	----	----		16-Jun-2022	14 days	10 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) NDR-TRIB-01	E336	07-Jun-2022	----	----	----		16-Jun-2022	14 days	10 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) NDR-TRIB-02	E336	07-Jun-2022	----	----	----		16-Jun-2022	14 days	10 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) NDR-P-05	E336	06-Jun-2022	----	----	----		16-Jun-2022	14 days	11 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) WBR-P-01	E336	06-Jun-2022	----	----	----		16-Jun-2022	14 days	11 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) WBR-S-02	E336	06-Jun-2022	----	----	----		16-Jun-2022	14 days	11 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) WBR-S-03	E336	06-Jun-2022	----	----	----		16-Jun-2022	14 days	11 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) WBR-S-04	E336	06-Jun-2022	----	----	----		16-Jun-2022	14 days	11 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDR-S-02	E421	07-Jun-2022	10-Jun-2022	----	----		13-Jun-2022	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDR-TRIB-01	E421	07-Jun-2022	10-Jun-2022	----	----		13-Jun-2022	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDR-TRIB-02	E421	07-Jun-2022	10-Jun-2022	----	----		13-Jun-2022	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDR-P-05	E421	06-Jun-2022	10-Jun-2022	----	----		13-Jun-2022	180 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) WBR-P-01	E421	06-Jun-2022	10-Jun-2022	----	----		13-Jun-2022	180 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) WBR-S-02	E421	06-Jun-2022	10-Jun-2022	----	----		13-Jun-2022	180 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) WBR-S-03	E421	06-Jun-2022	10-Jun-2022	----	----		13-Jun-2022	180 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) WBR-S-04	E421	06-Jun-2022	10-Jun-2022	----	----		13-Jun-2022	180 days	8 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-S-02	E283	07-Jun-2022	----	----	----		13-Jun-2022	14 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-TRIB-01	E283	07-Jun-2022	----	----	----		13-Jun-2022	14 days	6 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-TRIB-02	E283	07-Jun-2022	----	----	----		13-Jun-2022	14 days	6 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-P-05	E283	06-Jun-2022	----	----	----		13-Jun-2022	14 days	7 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] WBR-P-01	E283	06-Jun-2022	----	----	----		13-Jun-2022	14 days	7 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] WBR-S-02	E283	06-Jun-2022	----	----	----		13-Jun-2022	14 days	7 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] WBR-S-03	E283	06-Jun-2022	----	----	----		13-Jun-2022	14 days	7 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] WBR-S-04	E283	06-Jun-2022	----	----	----		13-Jun-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-S-02	E290	07-Jun-2022	----	----	----		13-Jun-2022	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-TRIB-01	E290	07-Jun-2022	----	----	----		13-Jun-2022	14 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-TRIB-02	E290	07-Jun-2022	----	----	----		13-Jun-2022	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-P-05	E290	06-Jun-2022	----	----	----		13-Jun-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] WBR-P-01	E290	06-Jun-2022	----	----	----		13-Jun-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] WBR-S-02	E290	06-Jun-2022	----	----	----		13-Jun-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] WBR-S-03	E290	06-Jun-2022	----	----	----		13-Jun-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] WBR-S-04	E290	06-Jun-2022	----	----	----		13-Jun-2022	14 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-S-02	E100	07-Jun-2022	----	----	----		13-Jun-2022	28 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-TRIB-01	E100	07-Jun-2022	----	----	----		13-Jun-2022	28 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-TRIB-02	E100	07-Jun-2022	----	----	----		13-Jun-2022	28 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-P-05	E100	06-Jun-2022	----	----	----		13-Jun-2022	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] WBR-P-01	E100	06-Jun-2022	----	----	----		13-Jun-2022	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] WBR-S-02	E100	06-Jun-2022	----	----	----		13-Jun-2022	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] WBR-S-03	E100	06-Jun-2022	----	----	----		13-Jun-2022	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] WBR-S-04	E100	06-Jun-2022	----	----	----		13-Jun-2022	28 days	7 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-S-02	E108	07-Jun-2022	----	----	----		13-Jun-2022	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-TRIB-01	E108	07-Jun-2022	----	----	----		13-Jun-2022	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-TRIB-02	E108	07-Jun-2022	----	----	----		13-Jun-2022	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-P-05	E108	06-Jun-2022	----	----	----		13-Jun-2022	14 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE [ON MECP] WBR-P-01	E108	06-Jun-2022	----	----	----		13-Jun-2022	14 days	7 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] WBR-S-02	E108	06-Jun-2022	----	----	----		13-Jun-2022	14 days	7 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] WBR-S-03	E108	06-Jun-2022	----	----	----		13-Jun-2022	14 days	7 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] WBR-S-04	E108	06-Jun-2022	----	----	----		13-Jun-2022	14 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-S-02	E162	07-Jun-2022	----	----	----		10-Jun-2022	7 days	4 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-TRIB-01	E162	07-Jun-2022	----	----	----		10-Jun-2022	7 days	4 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-TRIB-02	E162	07-Jun-2022	----	----	----		10-Jun-2022	7 days	4 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-P-05	E162	06-Jun-2022	----	----	----		10-Jun-2022	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] WBR-P-01	E162	06-Jun-2022	----	----	----		10-Jun-2022	7 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] WBR-S-02	E162	06-Jun-2022	----	----	----		10-Jun-2022	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] WBR-S-03	E162	06-Jun-2022	----	----	----		10-Jun-2022	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] WBR-S-04	E162	06-Jun-2022	----	----	----		10-Jun-2022	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-S-02	E160	07-Jun-2022	----	----	----		13-Jun-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-TRIB-01	E160	07-Jun-2022	----	----	----		13-Jun-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-TRIB-02	E160	07-Jun-2022	----	----	----		13-Jun-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-P-05	E160	06-Jun-2022	----	----	----		13-Jun-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] WBR-P-01	E160	06-Jun-2022	----	----	----		13-Jun-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] WBR-S-02	E160	06-Jun-2022	----	----	----		13-Jun-2022	7 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
WBR-S-03	E160	06-Jun-2022	----	----	----		13-Jun-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
WBR-S-04	E160	06-Jun-2022	----	----	----		13-Jun-2022	7 days	7 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
NDR-S-02	E536	07-Jun-2022	14-Jul-2022	----	----		16-Jul-2022	180 days	39 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
NDR-TRIB-01	E536	07-Jun-2022	14-Jul-2022	----	----		16-Jul-2022	180 days	39 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
NDR-TRIB-02	E536	07-Jun-2022	14-Jul-2022	----	----		16-Jul-2022	180 days	39 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
NDR-P-05	E536	06-Jun-2022	14-Jul-2022	----	----		16-Jul-2022	180 days	40 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
WBR-P-01	E536	06-Jun-2022	14-Jul-2022	----	----		16-Jul-2022	180 days	40 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
WBR-S-02	E536	06-Jun-2022	14-Jul-2022	----	----		16-Jul-2022	180 days	40 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
WBR-S-03	E536	06-Jun-2022	14-Jul-2022	----	----		16-Jul-2022	180 days	40 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
WBR-S-04	E536	06-Jun-2022	14-Jul-2022	----	----		16-Jul-2022	180 days	40 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved)										
NDR-S-02	E508-L	07-Jun-2022	----	----	----		14-Jul-2022	28 days	38 days	× EHT
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved)										
NDR-TRIB-01	E508-L	07-Jun-2022	----	----	----		14-Jul-2022	28 days	38 days	× EHT
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved)										
NDR-TRIB-02	E508-L	07-Jun-2022	----	----	----		14-Jul-2022	28 days	38 days	× EHT
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved)										
NDR-P-05	E508-L	06-Jun-2022	----	----	----		14-Jul-2022	28 days	39 days	× EHT
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved)										
WBR-P-01	E508-L	06-Jun-2022	----	----	----		14-Jul-2022	28 days	39 days	× EHT
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved)										
WBR-S-02	E508-L	06-Jun-2022	----	----	----		14-Jul-2022	28 days	39 days	× EHT
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved)										
WBR-S-03	E508-L	06-Jun-2022	----	----	----		14-Jul-2022	28 days	39 days	× EHT
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved)										
WBR-S-04	E508-L	06-Jun-2022	----	----	----		14-Jul-2022	28 days	39 days	× EHT

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDR-S-02	E420	07-Jun-2022	----	----	----		13-Jun-2022	180 days	7 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDR-TRIB-01	E420	07-Jun-2022	----	----	----		13-Jun-2022	180 days	7 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDR-TRIB-02	E420	07-Jun-2022	----	----	----		13-Jun-2022	180 days	7 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDR-P-05	E420	06-Jun-2022	----	----	----		13-Jun-2022	180 days	8 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) WBR-P-01	E420	06-Jun-2022	----	----	----		13-Jun-2022	180 days	8 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) WBR-S-02	E420	06-Jun-2022	----	----	----		13-Jun-2022	180 days	8 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) WBR-S-03	E420	06-Jun-2022	----	----	----		13-Jun-2022	180 days	8 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) WBR-S-04	E420	06-Jun-2022	----	----	----		13-Jun-2022	180 days	8 days	✓

Legend & Qualifier Definitions

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	520129	1	17	5.8	5.0	✓
Alkalinity Species by Titration	E290	519895	1	14	7.1	5.0	✓
Ammonia by Fluorescence	E298	522599	2	40	5.0	5.0	✓
Bromide in Water by IC	E235.Br	570032	1	8	12.5	5.0	✓
Chloride in Water by IC	E235.Cl	519889	1	19	5.2	5.0	✓
Conductivity in Water	E100	519894	1	15	6.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	519583	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	519890	1	12	8.3	5.0	✓
Free Cyanide	E339	526428	1	10	10.0	5.0	✓
Nitrate in Water by IC	E235.NO3	519892	1	14	7.1	5.0	✓
Nitrite in Water by IC	E235.NO2	519891	1	14	7.1	5.0	✓
pH by Meter	E108	519893	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	519888	1	16	6.2	5.0	✓
TDS by Gravimetry	E162	519581	1	19	5.2	5.0	✓
Total Cyanide	E333	526426	1	10	10.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	562161	1	9	11.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	521076	1	19	5.2	5.0	✓
Total Methylmercury in Water by GCAFS	E536	561594	1	8	12.5	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	522597	3	59	5.0	5.0	✓
TSS by Gravimetry	E160	521296	2	40	5.0	4.7	✓
WAD Cyanide	E336	526427	1	10	10.0	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	520129	1	17	5.8	5.0	✓
Alkalinity Species by Titration	E290	519895	1	14	7.1	5.0	✓
Ammonia by Fluorescence	E298	522599	2	40	5.0	5.0	✓
Bromide in Water by IC	E235.Br	570032	1	8	12.5	5.0	✓
Chloride in Water by IC	E235.Cl	519889	1	19	5.2	5.0	✓
Conductivity in Water	E100	519894	1	15	6.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	519583	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	519890	1	12	8.3	5.0	✓
Free Cyanide	E339	526428	1	10	10.0	5.0	✓
Nitrate in Water by IC	E235.NO3	519892	1	14	7.1	5.0	✓
Nitrite in Water by IC	E235.NO2	519891	1	14	7.1	5.0	✓
pH by Meter	E108	519893	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	519888	1	16	6.2	5.0	✓
TDS by Gravimetry	E162	519581	1	19	5.2	5.0	✓
Total Cyanide	E333	526426	1	10	10.0	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	562161	1	9	11.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	521076	1	19	5.2	5.0	✓
Total Methylmercury in Water by GCAFS	E536	561594	1	8	12.5	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	522597	3	59	5.0	5.0	✓
TSS by Gravimetry	E160	521296	2	40	5.0	4.7	✓
WAD Cyanide	E336	526427	1	10	10.0	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	520129	1	17	5.8	5.0	✓
Alkalinity Species by Titration	E290	519895	1	14	7.1	5.0	✓
Ammonia by Fluorescence	E298	522599	2	40	5.0	5.0	✓
Bromide in Water by IC	E235.Br	570032	1	8	12.5	5.0	✓
Chloride in Water by IC	E235.Cl	519889	1	19	5.2	5.0	✓
Conductivity in Water	E100	519894	1	15	6.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	519583	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	519890	1	12	8.3	5.0	✓
Free Cyanide	E339	526428	1	10	10.0	5.0	✓
Nitrate in Water by IC	E235.NO3	519892	1	14	7.1	5.0	✓
Nitrite in Water by IC	E235.NO2	519891	1	14	7.1	5.0	✓
Sulfate in Water by IC	E235.SO4	519888	1	16	6.2	5.0	✓
TDS by Gravimetry	E162	519581	1	19	5.2	5.0	✓
Total Cyanide	E333	526426	1	10	10.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	562161	1	9	11.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	521076	1	19	5.2	5.0	✓
Total Methylmercury in Water by GCAFS	E536	561594	1	8	12.5	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	522597	3	59	5.0	5.0	✓
TSS by Gravimetry	E160	521296	2	40	5.0	4.7	✓
WAD Cyanide	E336	526427	1	10	10.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	522599	2	40	5.0	5.0	✓
Bromide in Water by IC	E235.Br	570032	1	8	12.5	5.0	✓
Chloride in Water by IC	E235.Cl	519889	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	519583	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	519890	1	12	8.3	5.0	✓
Free Cyanide	E339	526428	1	10	10.0	5.0	✓
Nitrate in Water by IC	E235.NO3	519892	1	14	7.1	5.0	✓
Nitrite in Water by IC	E235.NO2	519891	1	14	7.1	5.0	✓
Sulfate in Water by IC	E235.SO4	519888	1	16	6.2	5.0	✓
Total Cyanide	E333	526426	1	10	10.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	562161	1	9	11.1	5.0	✓
Total Metals in Water by CRC ICPMS	E420	521076	1	19	5.2	5.0	✓

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Total Methylmercury in Water by GCAFS	E536	561594	1	8	12.5	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	522597	3	59	5.0	5.0	✓
WAD Cyanide	E336	526427	1	10	10.0	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Waterloo - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Waterloo - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry	E160 Waterloo - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Waterloo - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC	E235.Br Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC	E235.NO2 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC	E235.NO3 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Acidity by Titration	E283 Waterloo - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3
Alkalinity Species by Titration	E290 Waterloo - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Waterloo - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Cyanide	E333 Waterloo - Environmental	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336 Waterloo - Environmental	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339 Waterloo - Environmental	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Waterloo - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total Metals in Water by CRC ICPMS	E420 Waterloo - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 Waterloo - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Methylmercury in Water by GCAFS	E536 Vancouver - Environmental	Water	EPA 1630 (mod)	This method follows Method 1630 of the US EPA. Samples are distilled under an inert gas flow to isolate methylmercury and minimize matrix interferences. The distillate is analyzed by aqueous phase ethylation, purge and trap, desorption and GC separation. The separated species are then pyrolized to elemental Hg and quantified by cold vapour atomic flourescence spectroscopy. Results are reported "as MeHg".
Dissolved Hardness (Calculated)	EC100 Waterloo - Environmental	Water	APHA 2340B	“Hardness (as CaCO3), dissolved” is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. “Total Hardness” refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Waterloo - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for Total Phosphorus in water	EP372 Waterloo - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Waterloo - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Total Methylmercury Water Preparation	EP536 Vancouver - Environmental	Water	EPA 1630	This method follows Method 1630 of the US EPA. Samples are distilled under an inert gas flow to isolate methylmercury and minimize matrix interferences. The distillate is analyzed by aqueous phase ethylation, purge and trap, desorption and GC separation. The separated species are then pyrolized to elemental Hg and quantified by cold vapour atomic flourescence spectroscopy. Results are reported "as MeHg".

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **WT2205411**	Page	: 1 of 18
Amendment	: **1**		
Client	: Wood Environment & Infrastructure Solutions Canada Limited	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 2020 Winston Park Drive Suite 600 Mississauga ON Canada L6H 6X7	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2002.2021C.400.5120.573000	Date Samples Received	: 10-Jun-2022 10:00
PO	: C026300187	Date Analysis Commenced	: 10-Jun-2022
C-O-C number	: ----	Issue Date	: 20-Jul-2022 17:20
Sampler	: ----		
Site	: ----		
Quote number	: OMEMA2002		
No. of samples received	: 8		
No. of samples analysed	: 8		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Greg Pokocky	Supervisor - Inorganic	Waterloo Inorganics, Waterloo, Ontario
Hamideh Moradi	Analyst	Vancouver Metals, Burnaby, British Columbia
Jon Fisher	Department Manager - Inorganics	Waterloo Inorganics, Waterloo, Ontario
Jon Fisher	Department Manager - Inorganics	Waterloo Metals, Waterloo, Ontario
Kinny Wu	Lab Analyst	Vancouver Metals, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 519581)											
WT2205406-001	Anonymous	solids, total dissolved [TDS]	----	E162	13	mg/L	67	72	5	Diff <2x LOR	----
Physical Tests (QC Lot: 519893)											
WT2205383-001	Anonymous	pH	----	E108	0.10	pH units	7.36	7.38	0.02	Diff <2x LOR	----
Physical Tests (QC Lot: 519894)											
WT2205383-001	Anonymous	conductivity	----	E100	1.0	µS/cm	82.8	82.9	0.121%	10%	----
Physical Tests (QC Lot: 519895)											
WT2205383-001	Anonymous	alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	39.9	37.9	5.09%	20%	----
Physical Tests (QC Lot: 520129)											
WT2205383-002	Anonymous	acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 521296)											
WT2205181-001	Anonymous	solids, total suspended [TSS]	----	E160	3.0	mg/L	330	384	15.1%	20%	----
Physical Tests (QC Lot: 521301)											
WT2205109-003	Anonymous	solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 519888)											
WT2205411-008	NDR-TRIB-01	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	<0.30	<0.30	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 519889)											
WT2205411-008	NDR-TRIB-01	chloride	16887-00-6	E235.Cl	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 519890)											
WT2205411-008	NDR-TRIB-01	fluoride	16984-48-8	E235.F	0.020	mg/L	0.024	0.023	0.0010	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 519891)											
WT2205411-008	NDR-TRIB-01	nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 519892)											
WT2205411-008	NDR-TRIB-01	nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 522597)											
WT2205406-010	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0415	0.0435	4.85%	20%	----
Anions and Nutrients (QC Lot: 522599)											
WT2205406-016	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0126	0.0118	0.0008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 522790)											
WT2205229-002	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0310	0.0302	2.51%	20%	----
Anions and Nutrients (QC Lot: 522799)											
WT2205478-011	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0217	0.0222	0.0005	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Anions and Nutrients (QC Lot: 524050)											
WT2205364-003	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0517	0.0503	2.72%	20%	----
Anions and Nutrients (QC Lot: 570032)											
WT2205411-008	NDR-TRIB-01	bromide	24959-67-9	E235.Br	0.10	mg/L	<0.10	<0.10	0	Diff <2x LOR	----
Cyanides (QC Lot: 526426)											
WT2205383-001	Anonymous	cyanide, strong acid dissociable (total)	----	E333	0.0020	mg/L	0.0029	<0.0020	0.0009	Diff <2x LOR	----
Cyanides (QC Lot: 526427)											
WT2205383-001	Anonymous	cyanide, weak acid dissociable	----	E336	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Cyanides (QC Lot: 526428)											
WT2205383-001	Anonymous	cyanide, free	----	E339	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Total Metals (QC Lot: 521076)											
WT2205368-001	Anonymous	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.667	0.633	5.26%	20%	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	0.00037	0.00038	0.00001	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00095	0.00097	0.00002	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.0987	0.0962	2.48%	20%	----
		beryllium, total	7440-41-7	E420	0.000020	mg/L	0.000034	0.000034	0.0000002	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	0.022	0.022	0.00006	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000104	0.0000120	0.0000016	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.050	mg/L	113	109	3.17%	20%	----
		cesium, total	7440-46-2	E420	0.000010	mg/L	0.000071	0.000069	0.000002	Diff <2x LOR	----
		chromium, total	7440-47-3	E420	0.00050	mg/L	0.00126	0.00131	0.00005	Diff <2x LOR	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	0.00120	0.00122	1.81%	20%	----
		copper, total	7440-50-8	E420	0.00050	mg/L	0.00179	0.00176	0.00003	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	1.20	1.16	2.81%	20%	----
		lead, total	7439-92-1	E420	0.000050	mg/L	0.000587	0.000599	1.99%	20%	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.0145	0.0143	1.30%	20%	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	25.7	25.5	0.871%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.123	0.125	1.04%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00750	0.00766	2.23%	20%	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	0.00214	0.00213	0.00002	Diff <2x LOR	----
		phosphorus, total	7723-14-0	E420	0.050	mg/L	0.058	0.052	0.006	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.050	mg/L	2.67	2.67	0.0812%	20%	----
		rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00257	0.00276	7.12%	20%	----
		selenium, total	7782-49-2	E420	0.000050	mg/L	0.000568	0.000580	2.09%	20%	----
		silicon, total	7440-21-3	E420	0.10	mg/L	9.04	9.31	2.89%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 521076) - continued											
WT2205368-001	Anonymous	silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	79.2	80.4	1.49%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.334	0.334	0.235%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	41.9	41.4	1.30%	20%	----
		tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	0.000018	0.000020	0.000002	Diff <2x LOR	----
		thorium, total	7440-29-1	E420	0.00010	mg/L	0.00033	0.00033	0.000005	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	0.00412	0.00423	2.69%	20%	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	0.0258	0.0273	5.72%	20%	----
		tungsten, total	7440-33-7	E420	0.00010	mg/L	0.00256	0.00271	5.90%	20%	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.00240	0.00246	2.35%	20%	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00182	0.00185	0.00003	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	0.0055	0.0055	0.00005	Diff <2x LOR	----
		zirconium, total	7440-67-7	E420	0.00020	mg/L	0.00053	0.00050	0.00002	Diff <2x LOR	----
Total Metals (QC Lot: 562161)											
WT2205383-002	Anonymous	mercury, total	7439-97-6	E508-L	1.50	ng/L	6.89	6.81	0.08	Diff <2x LOR	----
Dissolved Metals (QC Lot: 519583)											
WT2205283-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0100	mg/L	<0.0100	<0.0100	0	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00100	mg/L	0.0466	0.0457	2.03%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000200	mg/L	<0.000200	<0.000200	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000500	mg/L	<0.000500	<0.000500	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.100	mg/L	<0.100	<0.100	0	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000500	mg/L	0.0000623	<0.0000500	0.0000123	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.500	mg/L	116	112	3.32%	20%	----
		cesium, dissolved	7440-46-2	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		chromium, dissolved	7440-47-3	E421	0.00500	mg/L	0.0799	0.0792	0.977%	20%	----
		cobalt, dissolved	7440-48-4	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00200	mg/L	0.00602	0.00594	0.00008	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.100	mg/L	<0.100	<0.100	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000500	mg/L	0.000670	0.000676	0.000007	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0100	mg/L	<0.0100	<0.0100	0	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E421	0.0500	mg/L	23.6	23.0	2.52%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00100	mg/L	<0.00100	0.00111	0.00011	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 519583) - continued											
WT2205283-001	Anonymous	molybdenum, dissolved	7439-98-7	E421	0.000500	mg/L	<0.000500	<0.000500	0	Diff <2x LOR	----
		nickel, dissolved	7440-02-0	E421	0.00500	mg/L	<0.00500	<0.00500	0	Diff <2x LOR	----
		phosphorus, dissolved	7723-14-0	E421	0.500	mg/L	<0.500	<0.500	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.500	mg/L	4.42	4.33	0.090	Diff <2x LOR	----
		rubidium, dissolved	7440-17-7	E421	0.00200	mg/L	<0.00200	<0.00200	0	Diff <2x LOR	----
		selenium, dissolved	7782-49-2	E421	0.000500	mg/L	<0.000500	<0.000500	0	Diff <2x LOR	----
		silicon, dissolved	7440-21-3	E421	0.500	mg/L	2.96	2.95	0.002	Diff <2x LOR	----
		silver, dissolved	7440-22-4	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.500	mg/L	252	245	2.70%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00200	mg/L	0.207	0.200	3.37%	20%	----
		sulfur, dissolved	7704-34-9	E421	5.00	mg/L	9.56	9.67	0.11	Diff <2x LOR	----
		tellurium, dissolved	13494-80-9	E421	0.00200	mg/L	<0.00200	<0.00200	0	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		thorium, dissolved	7440-29-1	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00300	mg/L	<0.00300	<0.00300	0	Diff <2x LOR	----
		tungsten, dissolved	7440-33-7	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000100	mg/L	0.000492	0.000448	0.000044	Diff <2x LOR	----
		vanadium, dissolved	7440-62-2	E421	0.00500	mg/L	<0.00500	<0.00500	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0100	mg/L	0.0378	0.0346	0.0032	Diff <2x LOR	----
		zirconium, dissolved	7440-67-7	E421	0.00300	mg/L	<0.00300	<0.00300	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 561594)											
WT2205411-001	WBR-S-02	methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L	0.000206	0.000236	13.5%	30%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 519581)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 519894)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 519895)						
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 520129)						
acidity (as CaCO3)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 521296)						
solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 521301)						
solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Anions and Nutrients (QCLot: 519888)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 519889)						
chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 519890)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 519891)						
nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 519892)						
nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 522597)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 522599)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 522790)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 522799)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 524050)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 570032)						
bromide	24959-67-9	E235.Br	0.1	mg/L	<0.10	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Cyanides (QCLot: 526426)						
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 526427)						
cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 526428)						
cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Total Metals (QCLot: 521076)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 521076) - continued						
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----
Total Metals (QCLot: 562161)						
mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Dissolved Metals (QCLot: 519583)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 519583) - continued						
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Speciated Metals (QCLot: 561594)						
methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	<0.000020	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 519581)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	93.2	85.0	115	----
Physical Tests (QCLot: 519893)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 519894)									
conductivity	----	E100	1	µS/cm	1409 µS/cm	98.7	90.0	110	----
Physical Tests (QCLot: 519895)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	150 mg/L	101	85.0	115	----
Physical Tests (QCLot: 520129)									
acidity (as CaCO3)	----	E283	2	mg/L	50 mg/L	96.2	85.0	115	----
Physical Tests (QCLot: 521296)									
solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	87.3	85.0	115	----
Physical Tests (QCLot: 521301)									
solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	100	85.0	115	----
Anions and Nutrients (QCLot: 519888)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 519889)									
chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 519890)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.5	90.0	110	----
Anions and Nutrients (QCLot: 519891)									
nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 519892)									
nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	99.3	90.0	110	----
Anions and Nutrients (QCLot: 522597)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.431 mg/L	103	80.0	120	----
Anions and Nutrients (QCLot: 522599)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	99.4	85.0	115	----
Anions and Nutrients (QCLot: 522790)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.431 mg/L	101	80.0	120	----
Anions and Nutrients (QCLot: 522799)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	94.4	85.0	115	----
Anions and Nutrients (QCLot: 524050)									

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 524050) - continued									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.431 mg/L	102	80.0	120	----
Anions and Nutrients (QCLot: 570032)									
bromide	24959-67-9	E235.Br	0.1	mg/L	0.5 mg/L	99.7	85.0	115	----
Cyanides (QCLot: 526426)									
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	0.25 mg/L	94.1	80.0	120	----
Cyanides (QCLot: 526427)									
cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	99.0	80.0	120	----
Cyanides (QCLot: 526428)									
cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	91.1	80.0	120	----
Total Metals (QCLot: 521076)									
aluminum, total	7429-90-5	E420	0.003	mg/L	0.1 mg/L	101	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	0.05 mg/L	104	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	0.05 mg/L	103	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.0125 mg/L	103	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.005 mg/L	95.0	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	0.05 mg/L	96.5	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	0.05 mg/L	89.6	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.005 mg/L	103	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	2.5 mg/L	95.3	80.0	120	----
cesium, total	7440-46-2	E420	0.00001	mg/L	0.0025 mg/L	102	80.0	120	----
chromium, total	7440-47-3	E420	0.0005	mg/L	0.0125 mg/L	103	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.0125 mg/L	103	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.0125 mg/L	102	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	0.05 mg/L	106	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.025 mg/L	95.9	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.0125 mg/L	85.1	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	2.5 mg/L	110	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.0125 mg/L	101	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.0125 mg/L	102	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.025 mg/L	104	80.0	120	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	0.5 mg/L	103	70.0	130	----
potassium, total	7440-09-7	E420	0.05	mg/L	2.5 mg/L	102	80.0	120	----
rubidium, total	7440-17-7	E420	0.0002	mg/L	0.005 mg/L	103	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	0.05 mg/L	104	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	0.5 mg/L	103	60.0	140	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 521076) - continued									
silver, total	7440-22-4	E420	0.00001	mg/L	0.005 mg/L	92.8	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	2.5 mg/L	109	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.0125 mg/L	106	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	2.5 mg/L	103	80.0	120	----
tellurium, total	13494-80-9	E420	0.0002	mg/L	0.005 mg/L	94.4	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	0.05 mg/L	98.1	80.0	120	----
thorium, total	7440-29-1	E420	0.0001	mg/L	0.005 mg/L	99.3	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.025 mg/L	101	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.0125 mg/L	97.8	80.0	120	----
tungsten, total	7440-33-7	E420	0.0001	mg/L	0.005 mg/L	94.2	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.00025 mg/L	97.5	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.025 mg/L	104	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.025 mg/L	105	80.0	120	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	0.005 mg/L	100	80.0	120	----
Total Metals (QCLot: 562161)									
mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	119	80.0	120	----
Dissolved Metals (QCLot: 519583)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	0.1 mg/L	98.8	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	0.05 mg/L	104	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	0.05 mg/L	96.5	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.0125 mg/L	103	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.005 mg/L	87.9	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	0.05 mg/L	102	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	0.05 mg/L	90.4	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.005 mg/L	100	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	2.5 mg/L	101	80.0	120	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.0025 mg/L	109	80.0	120	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.0125 mg/L	99.4	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.0125 mg/L	102	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.0125 mg/L	99.5	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	0.05 mg/L	105	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.025 mg/L	106	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.0125 mg/L	83.5	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	2.5 mg/L	98.7	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.0125 mg/L	104	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.0125 mg/L	102	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 519583) - continued									
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.025 mg/L	101	80.0	120	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	0.5 mg/L	101	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	2.5 mg/L	97.3	80.0	120	----
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.005 mg/L	111	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	0.05 mg/L	94.0	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	0.5 mg/L	93.7	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.005 mg/L	99.4	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	2.5 mg/L	100	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.0125 mg/L	104	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	2.5 mg/L	93.5	80.0	120	----
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.005 mg/L	89.9	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	0.05 mg/L	105	80.0	120	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.005 mg/L	107	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.025 mg/L	104	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.0125 mg/L	99.4	80.0	120	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.005 mg/L	103	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.00025 mg/L	111	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.025 mg/L	101	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.025 mg/L	94.5	80.0	120	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.005 mg/L	104	80.0	120	----
Speciated Metals (QCLot: 561594)									
methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	0.0025 µg/L	78.4	70.0	130	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 519888)										
WT2205411-008	NDR-TRIB-01	sulfate (as SO4)	14808-79-8	E235.SO4	100 mg/L	100 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 519889)										
WT2205411-008	NDR-TRIB-01	chloride	16887-00-6	E235.Cl	99.7 mg/L	100 mg/L	99.7	75.0	125	----
Anions and Nutrients (QCLot: 519890)										
WT2205411-008	NDR-TRIB-01	fluoride	16984-48-8	E235.F	1.00 mg/L	1 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 519891)										
WT2205411-008	NDR-TRIB-01	nitrite (as N)	14797-65-0	E235.NO2	0.499 mg/L	0.5 mg/L	99.7	75.0	125	----
Anions and Nutrients (QCLot: 519892)										
WT2205411-008	NDR-TRIB-01	nitrate (as N)	14797-55-8	E235.NO3	2.43 mg/L	2.5 mg/L	97.3	75.0	125	----
Anions and Nutrients (QCLot: 522597)										
WT2205406-010	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0987 mg/L	0.1 mg/L	98.7	70.0	130	----
Anions and Nutrients (QCLot: 522599)										
WT2205406-016	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0986 mg/L	0.1 mg/L	98.6	75.0	125	----
Anions and Nutrients (QCLot: 522790)										
WT2205229-002	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0890 mg/L	0.1 mg/L	89.0	70.0	130	----
Anions and Nutrients (QCLot: 522799)										
WT2205478-011	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0966 mg/L	0.1 mg/L	96.6	75.0	125	----
Anions and Nutrients (QCLot: 524050)										
WT2205364-003	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0950 mg/L	0.1 mg/L	95.0	70.0	130	----
Anions and Nutrients (QCLot: 570032)										
WT2205411-008	NDR-TRIB-01	bromide	24959-67-9	E235.Br	0.50 mg/L	0.5 mg/L	101	75.0	125	----
Cyanides (QCLot: 526426)										
WT2205383-001	Anonymous	cyanide, strong acid dissociable (total)	----	E333	0.236 mg/L	0.25 mg/L	94.2	70.0	130	----
Cyanides (QCLot: 526427)										
WT2205383-001	Anonymous	cyanide, weak acid dissociable	----	E336	0.133 mg/L	0.125 mg/L	106	70.0	130	----
Cyanides (QCLot: 526428)										
WT2205383-001	Anonymous	cyanide, free	----	E339	0.126 mg/L	0.125 mg/L	101	70.0	730	----
Total Metals (QCLot: 521076)										

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 521076) - continued										
WT2205375-001	Anonymous	aluminum, total	7429-90-5	E420	ND mg/L	0.1 mg/L	ND	70.0	130	----
		antimony, total	7440-36-0	E420	0.0496 mg/L	0.05 mg/L	99.1	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0503 mg/L	0.05 mg/L	101	70.0	130	----
		barium, total	7440-39-3	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		beryllium, total	7440-41-7	E420	0.00473 mg/L	0.005 mg/L	94.6	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0464 mg/L	0.05 mg/L	92.7	70.0	130	----
		boron, total	7440-42-8	E420	0.046 mg/L	0.05 mg/L	93.2	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00500 mg/L	0.005 mg/L	99.9	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		cesium, total	7440-46-2	E420	0.00245 mg/L	0.0025 mg/L	98.1	70.0	130	----
		chromium, total	7440-47-3	E420	0.0121 mg/L	0.0125 mg/L	96.6	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0122 mg/L	0.0125 mg/L	97.6	70.0	130	----
		copper, total	7440-50-8	E420	0.0115 mg/L	0.0125 mg/L	91.8	70.0	130	----
		iron, total	7439-89-6	E420	ND mg/L	0.05 mg/L	ND	70.0	130	----
		lead, total	7439-92-1	E420	0.0240 mg/L	0.025 mg/L	96.1	70.0	130	----
		lithium, total	7439-93-2	E420	0.0116 mg/L	0.0125 mg/L	92.7	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0123 mg/L	0.0125 mg/L	98.6	70.0	130	----
		nickel, total	7440-02-0	E420	0.0243 mg/L	0.025 mg/L	97.4	70.0	130	----
		phosphorus, total	7723-14-0	E420	0.527 mg/L	0.5 mg/L	105	70.0	130	----
		potassium, total	7440-09-7	E420	2.33 mg/L	2.5 mg/L	93.2	70.0	130	----
		rubidium, total	7440-17-7	E420	0.00486 mg/L	0.005 mg/L	97.3	70.0	130	----
		selenium, total	7782-49-2	E420	0.0497 mg/L	0.05 mg/L	99.3	70.0	130	----
		silicon, total	7440-21-3	E420	ND mg/L	0.5 mg/L	ND	70.0	130	----
		silver, total	7440-22-4	E420	0.00424 mg/L	0.005 mg/L	84.9	70.0	130	----
		sodium, total	7440-23-5	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	2.44 mg/L	2.5 mg/L	97.7	70.0	130	----
		tellurium, total	13494-80-9	E420	0.00431 mg/L	0.005 mg/L	86.1	70.0	130	----
		thallium, total	7440-28-0	E420	0.0492 mg/L	0.05 mg/L	98.4	70.0	130	----
		thorium, total	7440-29-1	E420	0.00516 mg/L	0.005 mg/L	103	70.0	130	----
		tin, total	7440-31-5	E420	0.0241 mg/L	0.025 mg/L	96.4	70.0	130	----
		titanium, total	7440-32-6	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		tungsten, total	7440-33-7	E420	0.00463 mg/L	0.005 mg/L	92.6	70.0	130	----
		uranium, total	7440-61-1	E420	ND mg/L	0.00025 mg/L	ND	70.0	130	----
		vanadium, total	7440-62-2	E420	0.0260 mg/L	0.025 mg/L	104	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 521076) - continued										
WT2205375-001	Anonymous	zinc, total	7440-66-6	E420	0.0233 mg/L	0.025 mg/L	93.1	70.0	130	----
		zirconium, total	7440-67-7	E420	0.00500 mg/L	0.005 mg/L	100	70.0	130	----
Total Metals (QCLot: 562161)										
WT2205411-001	WBR-S-02	mercury, total	7439-97-6	E508-L	19.2 ng/L	15 ng/L	128	70.0	130	----
Dissolved Metals (QCLot: 519583)										
WT2205283-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.947 mg/L	1 mg/L	94.7	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.511 mg/L	0.5 mg/L	102	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.499 mg/L	0.5 mg/L	99.8	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.124 mg/L	0.125 mg/L	99.4	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0459 mg/L	0.05 mg/L	91.8	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.476 mg/L	0.5 mg/L	95.3	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.441 mg/L	0.5 mg/L	88.2	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0493 mg/L	0.05 mg/L	98.6	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	25 mg/L	ND	70.0	130	----
		cesium, dissolved	7440-46-2	E421	0.0257 mg/L	0.025 mg/L	103	70.0	130	----
		chromium, dissolved	7440-47-3	E421	0.114 mg/L	0.125 mg/L	91.5	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.121 mg/L	0.125 mg/L	96.5	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.118 mg/L	0.125 mg/L	94.0	70.0	130	----
		iron, dissolved	7439-89-6	E421	0.496 mg/L	0.5 mg/L	99.1	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.246 mg/L	0.25 mg/L	98.6	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.110 mg/L	0.125 mg/L	88.1	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	23.5 mg/L	25 mg/L	93.9	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.122 mg/L	0.125 mg/L	97.4	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.123 mg/L	0.125 mg/L	98.7	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.240 mg/L	0.25 mg/L	95.9	70.0	130	----
		phosphorus, dissolved	7723-14-0	E421	5.07 mg/L	5 mg/L	101	70.0	130	----
		potassium, dissolved	7440-09-7	E421	24.3 mg/L	25 mg/L	97.1	70.0	130	----
		rubidium, dissolved	7440-17-7	E421	0.0532 mg/L	0.05 mg/L	106	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.521 mg/L	0.5 mg/L	104	70.0	130	----
		silicon, dissolved	7440-21-3	E421	4.53 mg/L	5 mg/L	90.7	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0446 mg/L	0.05 mg/L	89.3	70.0	130	----
		sodium, dissolved	7440-23-5	E421	ND mg/L	25 mg/L	ND	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.125 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	25.5 mg/L	25 mg/L	102	70.0	130	----
		tellurium, dissolved	13494-80-9	E421	0.0475 mg/L	0.05 mg/L	95.0	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.499 mg/L	0.5 mg/L	99.9	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 519583) - continued										
WT2205283-001	Anonymous	thorium, dissolved	7440-29-1	E421	0.0497 mg/L	0.05 mg/L	99.4	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.242 mg/L	0.25 mg/L	96.8	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.120 mg/L	0.125 mg/L	96.1	70.0	130	----
		tungsten, dissolved	7440-33-7	E421	0.0500 mg/L	0.05 mg/L	100	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.00250 mg/L	0.0025 mg/L	100	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.247 mg/L	0.25 mg/L	98.8	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.239 mg/L	0.25 mg/L	95.5	70.0	130	----
		zirconium, dissolved	7440-67-7	E421	0.0492 mg/L	0.05 mg/L	98.5	70.0	130	----
Speciated Metals (QCLot: 561594)										
WT2205411-002	WBR-S-03	methylmercury (as MeHg), total	22967-92-6	E536	0.00235 µg/L	0.0025 µg/L	93.9	60.0	140	----

Chain of Custody (COC) / Analytical Request Form

COC Number: 22 -

Page 1 of 1

Canada Toll Free: 1 800 668 9878

ALS www.alsglobal.com

Environmental Division Waterloo

Work Order Reference WT2205411

Telephone : +1 519 886 6910

Report To	Contact and company name below will appear on the final report
Company:	Wood PLC
Contact:	Dale Klodnicki
Phone:	647-993-4243
	Company address below will appear on the final report
Street:	2020 Winston Park Drive, #700
City/Province:	Oakville Ontario
Postal Code:	L6H 6X7
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	
Contact:	

Project Information

ALS Account # / Quote #:	
Job #:	OMEMA2002
PO / AFE:	
LSD:	

Reports / Recipients

Select Report Format: ☐ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Merge QC/QCI Reports with COA ☐ YES ☐ NO ☐ N/A

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: dale.klodnicki@woodplc.com

Email 2: roxanne.dibbley@woodplc.com

Email 3:

Invoice Recipients

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: dale.klodnicki@woodplc.com

Email 2:

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

Turnaround Time (TAT) Requested

- ☐ Routine [R] if received by 3pm M-F - no surcharges apply
- ☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimu
- ☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minim
- ☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minim
- ☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minim
- ☐ Same day [E2] if received by 10am M-S - 200% rush surcharge

Additional fees may apply to rush requests on weekends

Date and Time Required for all E&P TATs:

For all tests with rush TATs requested, please cc

Analysis Req

ALS Lab Work Order # (ALS use only): WT2205411

ALS Contact: Gayle Braun | Sampler: RD, DL

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	as per Quote	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	WBR-S-02	6-Jun-22	see bottles	SW	7	R				
	WBR-S-03	6-Jun-22	see bottles	SW	7	R				
	WBR-S-04	6-Jun-22	see bottles	SW	7	R				
	NDR-P-05	7-Jun-22	see bottles	SW	7	R				
	WBR-P-01	7-Jun-22	see bottles	SW	7	R				
	NDR-S-02	7-Jun-22	see bottles	SW	7	R				
	NDR-Trib-02									

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☐ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C		
				12.9	14.3	14.2

SHIPMENT RELEASE (client use)

Released by:	Roxanne Dibbley	Date:	8-Jun-22	Time: 16:00

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:
AP	10-JUN-22	20:00

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FEB 2022 FRONT

O BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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

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

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WT2213093**	Page	: 1 of 14
Client	: **Wood Environment & Infrastructure Solutions Canada Limited**	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 2020 Winston Park Drive Suite 600 Mississauga ON Canada L6H 6X7	Address	: 60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2002	Date Samples Received	: 06-Sep-2022 09:00
PO	: OMEMA2002.2021C.400.5120.573000	Date Analysis Commenced	: 06-Sep-2022
C-O-C number	: ----	Issue Date	: 19-Sep-2022 11:32
Sampler	: ----		
Site	: ----		
Quote number	: OMEMA2002		
No. of samples received	: 12		
No. of samples analysed	: 12		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Greg Pokocky	Supervisor - Inorganic	Inorganics, Waterloo, Ontario
Greg Pokocky	Supervisor - Inorganic	Metals, Waterloo, Ontario
Hamideh Moradi	Analyst	Metals, Burnaby, British Columbia
Jon Fisher	Department Manager - Inorganics	Inorganics, Waterloo, Ontario
Kinny Wu	Lab Analyst	Metals, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
mg/L	milligrams per litre
ng/L	nanograms per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

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

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	*Description*
DLDS	*Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.*

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MATR01	MATR02	WBRS03	NDRTRIB01	BDRP-02B
					Client sampling date / time	02-Sep-2022	02-Sep-2022	01-Sep-2022	31-Aug-2022	31-Aug-2022
						WT2213093-001	WT2213093-002	WT2213093-003	WT2213093-004	WT2213093-005
						Result	Result	Result	Result	Result
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L		<2.0	<2.0	3.0	<2.0	<2.0
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		60.7	28.6	25.0	60.8	90.7
conductivity	----	E100	1.0	µS/cm		148	147	58.5	123	166
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L		72.0	71.1	41.0	68.3	84.9
pH	----	E108	0.10	pH units		7.63	7.66	7.13	7.37	8.09
solids, total dissolved [TDS]	----	E162	10	mg/L		85 DLDS	83 DLDS	105 DLDS	59 DLDS	81 DLDS
solids, total suspended [TSS]	----	E160	3.0	mg/L		<3.0	<3.0	8.8	<3.0	<3.0
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		0.0324	0.0410	0.0315	0.0167	0.0151
chloride	16887-00-6	E235.Cl	0.50	mg/L		4.54	4.62	<0.50	<0.50	<0.50
fluoride	16984-48-8	E235.F	0.020	mg/L		0.035	0.035	0.023	0.032	0.026
nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L		0.081	0.087	0.059	0.030	<0.020
nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L		0.0128	0.0158	0.0395	0.0144	0.0096
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		5.52	5.67	0.60	1.18	<0.30
Cyanides										
cyanide, free	----	E339	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
cyanide, strong acid dissociable (total)	----	E333	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
cyanide, weak acid dissociable	----	E336	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L		0.218	0.225	0.808	0.0336	0.0118
antimony, total	7440-36-0	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
arsenic, total	7440-38-2	E420	0.00010	mg/L		0.00093	0.00094	0.00162	0.00064	0.00072
barium, total	7440-39-3	E420	0.00010	mg/L		0.00880	0.00883	0.0104	0.00719	0.00418
beryllium, total	7440-41-7	E420	0.000020	mg/L		<0.000020	<0.000020	0.000037	<0.000020	<0.000020
bismuth, total	7440-69-9	E420	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, total	7440-42-8	E420	0.010	mg/L		0.015	0.015	<0.010	<0.010	<0.010
cadmium, total	7440-43-9	E420	0.0000050	mg/L		0.0000130	0.0000150	0.0000410	<0.0000050	<0.0000050
calcium, total	7440-70-2	E420	0.050	mg/L		19.6	19.3	11.6	18.3	25.6
cesium, total	7440-46-2	E420	0.000010	mg/L		0.000022	0.000023	0.000071	<0.000010	<0.000010
chromium, total	7440-47-3	E420	0.00050	mg/L		0.00078	0.00083	0.00224	<0.00050	<0.00050

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MATR01	MATR02	WBRS03	NDRTRIB01	BDRP-02B
					Client sampling date / time	02-Sep-2022	02-Sep-2022	01-Sep-2022	31-Aug-2022	31-Aug-2022
						WT2213093-001	WT2213093-002	WT2213093-003	WT2213093-004	WT2213093-005
						Result	Result	Result	Result	Result
Total Metals										
cobalt, total	7440-48-4	E420	0.00010	mg/L		0.00016	0.00017	0.00046	0.00019	<0.00010
copper, total	7440-50-8	E420	0.00050	mg/L		0.00144	0.00147	0.00240	<0.00050	<0.00050
iron, total	7439-89-6	E420	0.010	mg/L		0.358	0.387	1.48	0.384	0.102
lead, total	7439-92-1	E420	0.000050	mg/L		0.000130	0.000158	0.000547	0.000061	0.000145
lithium, total	7439-93-2	E420	0.0010	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
magnesium, total	7439-95-4	E420	0.0050	mg/L		4.96	5.03	2.99	5.21	5.34
manganese, total	7439-96-5	E420	0.00010	mg/L		0.0306	0.0322	0.0639	0.147	0.00855
mercury, total	7439-97-6	E508-L	0.50	ng/L		2.16	2.09	5.26	0.84	<0.50
molybdenum, total	7439-98-7	E420	0.000050	mg/L		0.000136	0.000133	0.000051	0.000050	<0.000050
nickel, total	7440-02-0	E420	0.00050	mg/L		0.00070	0.00076	0.00177	<0.00050	<0.00050
phosphorus, total	7723-14-0	E420	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
potassium, total	7440-09-7	E420	0.050	mg/L		0.570	0.577	0.419	0.365	1.59
rubidium, total	7440-17-7	E420	0.00020	mg/L		0.00167	0.00165	0.00218	0.00095	0.00142
selenium, total	7782-49-2	E420	0.000050	mg/L		0.000112	0.000111	0.000195	0.000096	<0.000050
silicon, total	7440-21-3	E420	0.10	mg/L		2.58	2.64	3.53	1.00	1.18
silver, total	7440-22-4	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, total	7440-23-5	E420	0.050	mg/L		3.80	3.83	1.08	1.26	0.305
strontium, total	7440-24-6	E420	0.00020	mg/L		0.0341	0.0337	0.0263	0.0333	0.0289
sulfur, total	7704-34-9	E420	0.50	mg/L		1.90	1.95	<0.50	<0.50	<0.50
tellurium, total	13494-80-9	E420	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
thallium, total	7440-28-0	E420	0.000010	mg/L		<0.000010	<0.000010	0.000010	<0.000010	<0.000010
thorium, total	7440-29-1	E420	0.00010	mg/L		<0.00010	<0.00010	0.00016	<0.00010	<0.00010
tin, total	7440-31-5	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, total	7440-32-6	E420	0.00030	mg/L		0.00808	0.00828	0.0298	0.00098	0.00053
tungsten, total	7440-33-7	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
uranium, total	7440-61-1	E420	0.000010	mg/L		0.000071	0.000075	0.000071	0.000021	<0.000010
vanadium, total	7440-62-2	E420	0.00050	mg/L		0.00080	0.00082	0.00197	<0.00050	<0.00050
zinc, total	7440-66-6	E420	0.0030	mg/L		<0.0030	0.0032	0.0081	0.0051	0.0036
zirconium, total	7440-67-7	E420	0.00020	mg/L		0.00033	0.00035	0.00088	<0.00020	<0.00020
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.0549	0.0593	0.331	0.0177	0.0033
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MATR01	MATR02	WBRS03	NDRTRIB01	BDRP-02B
					Client sampling date / time	02-Sep-2022	02-Sep-2022	01-Sep-2022	31-Aug-2022	31-Aug-2022
						WT2213093-001	WT2213093-002	WT2213093-003	WT2213093-004	WT2213093-005
						Result	Result	Result	Result	Result
Dissolved Metals										
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00088	0.00090	0.00150	0.00062	0.00073
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.00750	0.00770	0.00732	0.00720	0.00366
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L		<0.000020	<0.000020	0.000026	<0.000020	<0.000020
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, dissolved	7440-42-8	E421	0.010	mg/L		0.016	0.015	<0.010	<0.010	<0.010
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		0.0000099	0.0000101	0.0000295	<0.0000050	<0.0000050
calcium, dissolved	7440-70-2	E421	0.050	mg/L		20.7	19.9	11.8	18.7	25.0
cesium, dissolved	7440-46-2	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		<0.00050	<0.00050	0.00107	<0.00050	<0.00050
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		<0.00010	<0.00010	0.00015	0.00012	<0.00010
copper, dissolved	7440-50-8	E421	0.00020	mg/L		0.00117	0.00120	0.00199	0.00026	<0.00020
iron, dissolved	7439-89-6	E421	0.010	mg/L		0.148	0.160	0.761	0.273	0.041
lead, dissolved	7439-92-1	E421	0.000050	mg/L		0.000057	0.000094	0.000276	0.000055	<0.000050
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L		4.93	5.20	2.81	5.25	5.46
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.00553	0.00466	0.0372	0.0788	0.00530
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		0.000125	0.000132	0.000052	<0.000050	<0.000050
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		0.00055	0.00054	0.00107	<0.00050	<0.00050
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
potassium, dissolved	7440-09-7	E421	0.050	mg/L		0.527	0.537	0.308	0.367	1.60
rubidium, dissolved	7440-17-7	E421	0.00020	mg/L		0.00130	0.00124	0.00119	0.00094	0.00144
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.000106	0.000124	0.000204	0.000107	<0.000050
silicon, dissolved	7440-21-3	E421	0.050	mg/L		2.37	2.36	2.73	0.990	1.18
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, dissolved	7440-23-5	E421	0.050	mg/L		3.66	3.74	1.00	1.28	0.324
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		0.0359	0.0355	0.0253	0.0344	0.0280
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		2.26	2.16	0.61	<0.50	<0.50
tellurium, dissolved	13494-80-9	E421	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
thorium, dissolved	7440-29-1	E421	0.00010	mg/L		<0.00010	<0.00010	0.00016	<0.00010	<0.00010
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		0.00178	0.00196	0.00997	0.00045	<0.00030

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MATR01	MATR02	WBRS03	NDRTRIB01	BDRP-02B
					Client sampling date / time	02-Sep-2022	02-Sep-2022	01-Sep-2022	31-Aug-2022	31-Aug-2022
						WT2213093-001	WT2213093-002	WT2213093-003	WT2213093-004	WT2213093-005
						Result	Result	Result	Result	Result
Dissolved Metals										
tungsten, dissolved	7440-33-7	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		0.000065	0.000065	0.000060	0.000019	<0.000010
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		<0.00050	<0.00050	0.00094	<0.00050	<0.00050
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		0.0025	0.0019	0.0068	0.0066	0.0020
zirconium, dissolved	7440-67-7	E421	0.00030	mg/L		<0.00030	<0.00030	0.00079	<0.00030	<0.00030
dissolved metals filtration location	----	EP421	-	-		Field	Field	Field	Field	Field
Speciated Metals										
methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L		0.000110	0.000058	0.000204	0.000124	<0.000020

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	DUP01	WBRS01	WBRS04	NDRP04	NDRP03
					Client sampling date / time	30-Aug-2022	30-Aug-2022	30-Aug-2022	30-Aug-2022	30-Aug-2022
						WT2213093-006	WT2213093-007	WT2213093-008	WT2213093-009	WT2213093-010
						Result	Result	Result	Result	Result
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L		<2.0	3.4	3.1	<2.0	<2.0
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		38.3	22.0	25.3	72.5	37.4
conductivity	----	E100	1.0	µS/cm		75.1	53.7	58.8	142	75.8
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L		39.5	37.5	40.2	74.5	40.7
pH	----	E108	0.10	pH units		7.53	6.93	7.04	7.62	7.56
solids, total dissolved [TDS]	----	E162	10	mg/L		51 DLDS	103 DLDS	111 DLDS	75 DLDS	40 DLDS
solids, total suspended [TSS]	----	E160	3.0	mg/L		<3.0	6.1	11.8	<3.0	<3.0
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		0.0102	0.0328	0.0263	0.0125	0.0213
chloride	16887-00-6	E235.Cl	0.50	mg/L		<0.50	<0.50	<0.50	<0.50	<0.50
fluoride	16984-48-8	E235.F	0.020	mg/L		<0.020	0.021	0.023	0.028	<0.020
nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L		<0.020	0.078	0.117	<0.020	<0.020
nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L		0.0038	0.0356	0.0053	0.0050	0.0039
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		<0.30	0.66	0.98	<0.30	<0.30
Cyanides										
cyanide, free	----	E339	0.0020	mg/L		<0.0020	<0.0020	0.0021	<0.0020	<0.0020
cyanide, strong acid dissociable (total)	----	E333	0.0020	mg/L		<0.0020	0.0020	<0.0020	<0.0020	<0.0020
cyanide, weak acid dissociable	----	E336	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L		0.0258	0.711	0.884	0.0156	0.0265
antimony, total	7440-36-0	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
arsenic, total	7440-38-2	E420	0.00010	mg/L		0.00029	0.00159	0.00161	0.00031	0.00030
barium, total	7440-39-3	E420	0.00010	mg/L		0.00234	0.00947	0.0108	0.00777	0.00241
beryllium, total	7440-41-7	E420	0.000020	mg/L		<0.000020	0.000031	0.000046	<0.000020	<0.000020
bismuth, total	7440-69-9	E420	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, total	7440-42-8	E420	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
cadmium, total	7440-43-9	E420	0.0000050	mg/L		<0.0000050	0.0000436	0.0000409	<0.0000050	<0.0000050
calcium, total	7440-70-2	E420	0.050	mg/L		10.6	11.2	11.7	22.2	10.9
cesium, total	7440-46-2	E420	0.000010	mg/L		<0.000010	0.000054	0.000081	<0.000010	<0.000010
chromium, total	7440-47-3	E420	0.00050	mg/L		<0.00050	0.00190	0.00238	<0.00050	<0.00050
cobalt, total	7440-48-4	E420	0.00010	mg/L		<0.00010	0.00037	0.00054	<0.00010	<0.00010

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	DUP01	WBRS01	WBRS04	NDRP04	NDRP03
					Client sampling date / time	30-Aug-2022	30-Aug-2022	30-Aug-2022	30-Aug-2022	30-Aug-2022
						WT2213093-006	WT2213093-007	WT2213093-008	WT2213093-009	WT2213093-010
						Result	Result	Result	Result	Result
Total Metals										
copper, total	7440-50-8	E420	0.00050	mg/L		<0.00050	0.00239	0.00238	<0.00050	<0.00050
iron, total	7439-89-6	E420	0.010	mg/L		0.041	1.26	1.56	0.087	0.041
lead, total	7439-92-1	E420	0.000050	mg/L		<0.000050	0.000537	0.000622	0.000195	<0.000050
lithium, total	7439-93-2	E420	0.0010	mg/L		<0.0010	0.0012	0.0014	<0.0010	<0.0010
magnesium, total	7439-95-4	E420	0.0050	mg/L		2.99	2.98	3.13	4.74	3.11
manganese, total	7439-96-5	E420	0.00010	mg/L		0.0136	0.0507	0.0841	0.0213	0.0139
mercury, total	7439-97-6	E508-L	0.50	ng/L		0.76	----	4.21	0.66	0.82
molybdenum, total	7439-98-7	E420	0.000050	mg/L		<0.000050	0.000060	0.000072	<0.000050	<0.000050
nickel, total	7440-02-0	E420	0.00050	mg/L		<0.00050	0.00164	0.00185	<0.00050	<0.00050
phosphorus, total	7723-14-0	E420	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
potassium, total	7440-09-7	E420	0.050	mg/L		0.292	0.359	0.436	0.497	0.301
rubidium, total	7440-17-7	E420	0.00020	mg/L		0.00054	0.00189	0.00223	0.00081	0.00056
selenium, total	7782-49-2	E420	0.000050	mg/L		0.000051	0.000210	0.000203	<0.000050	0.000060
silicon, total	7440-21-3	E420	0.10	mg/L		0.32	3.33	3.78	1.30	0.34
silver, total	7440-22-4	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, total	7440-23-5	E420	0.050	mg/L		0.470	1.10	1.07	0.525	0.475
strontium, total	7440-24-6	E420	0.00020	mg/L		0.0192	0.0293	0.0287	0.0296	0.0173
sulfur, total	7704-34-9	E420	0.50	mg/L		<0.50	0.77	0.63	<0.50	<0.50
tellurium, total	13494-80-9	E420	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
thallium, total	7440-28-0	E420	0.000010	mg/L		<0.000010	<0.000010	0.000011	<0.000010	<0.000010
thorium, total	7440-29-1	E420	0.00010	mg/L		<0.00010	0.00014	0.00016	<0.00010	<0.00010
tin, total	7440-31-5	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	0.00016
titanium, total	7440-32-6	E420	0.00030	mg/L		<0.00030	0.0248	0.0328	0.00058	<0.00030
tungsten, total	7440-33-7	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
uranium, total	7440-61-1	E420	0.000010	mg/L		0.000010	0.000074	0.000075	<0.000010	0.000010
vanadium, total	7440-62-2	E420	0.00050	mg/L		<0.00050	0.00161	0.00199	<0.00050	<0.00050
zinc, total	7440-66-6	E420	0.0030	mg/L		<0.0030	0.0085	0.0084	0.0031	<0.0030
zirconium, total	7440-67-7	E420	0.00020	mg/L		<0.00020	0.00078	0.00084	<0.00020	<0.00020
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.0190	0.342	0.325	0.0040	0.0199
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00029	0.00153	0.00152	0.00028	0.00030

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	DUP01	WBRS01	WBRS04	NDRP04	NDRP03
					Client sampling date / time	30-Aug-2022	30-Aug-2022	30-Aug-2022	30-Aug-2022	30-Aug-2022
						WT2213093-006	WT2213093-007	WT2213093-008	WT2213093-009	WT2213093-010
						Result	Result	Result	Result	Result
Dissolved Metals										
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.00233	0.00754	0.00732	0.00709	0.00232
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L		<0.000020	0.000029	0.000024	<0.000020	<0.000020
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, dissolved	7440-42-8	E421	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		<0.0000050	0.0000366	0.0000322	<0.0000050	<0.0000050
calcium, dissolved	7440-70-2	E421	0.050	mg/L		10.7	10.5	11.3	22.1	11.1
cesium, dissolved	7440-46-2	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		<0.00050	0.00106	0.00111	<0.00050	<0.00050
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		<0.00010	0.00015	0.00019	<0.00010	<0.00010
copper, dissolved	7440-50-8	E421	0.00020	mg/L		<0.00020	0.00207	0.00196	<0.00020	<0.00020
iron, dissolved	7439-89-6	E421	0.010	mg/L		0.013	0.775	0.772	0.050	0.013
lead, dissolved	7439-92-1	E421	0.000050	mg/L		<0.000050	0.000292	0.000284	<0.000050	<0.000050
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L		3.11	2.74	2.92	4.69	3.15
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.00041	0.0358	0.0515	0.0149	0.00066
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		<0.000050	0.000052	0.000054	<0.000050	<0.000050
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		<0.00050	0.00110	0.00111	<0.00050	<0.00050
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
potassium, dissolved	7440-09-7	E421	0.050	mg/L		0.299	0.276	0.316	0.504	0.308
rubidium, dissolved	7440-17-7	E421	0.00020	mg/L		0.00055	0.00113	0.00123	0.00072	0.00056
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.000060	0.000237	0.000239	<0.000050	0.000063
silicon, dissolved	7440-21-3	E421	0.050	mg/L		0.311	2.70	2.78	1.28	0.282
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, dissolved	7440-23-5	E421	0.050	mg/L		0.492	1.08	1.01	0.520	0.526
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		0.0183	0.0259	0.0260	0.0309	0.0188
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		<0.50	0.68	0.61	<0.50	<0.50
tellurium, dissolved	13494-80-9	E421	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
thorium, dissolved	7440-29-1	E421	0.00010	mg/L		<0.00010	0.00016	0.00017	<0.00010	<0.00010
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		<0.00030	0.00951	0.00982	<0.00030	<0.00030
tungsten, dissolved	7440-33-7	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	DUP01	WBRS01	WBRS04	NDRP04	NDRP03
					Client sampling date / time	30-Aug-2022	30-Aug-2022	30-Aug-2022	30-Aug-2022	30-Aug-2022
						WT2213093-006	WT2213093-007	WT2213093-008	WT2213093-009	WT2213093-010
						Result	Result	Result	Result	Result
Dissolved Metals										
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		<0.000010	0.000062	0.000060	<0.000010	<0.000010
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		<0.00050	0.00091	0.00093	<0.00050	<0.00050
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		<0.0010	0.0072	0.0063	0.0021	0.0017
zirconium, dissolved	7440-67-7	E421	0.00030	mg/L		<0.00030	0.00081	0.00081	<0.00030	<0.00030
dissolved metals filtration location	----	EP421	-	-		Field	Field	Field	Field	Field
Speciated Metals										
methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L		0.000023	0.000204	0.000233	<0.000020	0.000022

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	DUP02	NDR-P-01	----	----	----
					Client sampling date / time	30-Aug-2022	30-Aug-2022	----	----	----
						WT2213093-011	WT2213093-012	--------	--------	--------
						Result	Result	----	----	----
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L		3.0	4.2	----	----	----
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		24.7	20.8	----	----	----
conductivity	----	E100	1.0	µS/cm		58.8	52.7	----	----	----
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L		40.3	38.4	----	----	----
pH	----	E108	0.10	pH units		7.09	6.67	----	----	----
solids, total dissolved [TDS]	----	E162	10	mg/L		113 DLDS	107 DLDS	----	----	----
solids, total suspended [TSS]	----	E160	3.0	mg/L		9.6	<3.0	----	----	----
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		0.0322	0.0509	----	----	----
chloride	16887-00-6	E235.Cl	0.50	mg/L		<0.50	<0.50	----	----	----
fluoride	16984-48-8	E235.F	0.020	mg/L		0.022	<0.020	----	----	----
nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L		0.054	<0.020	----	----	----
nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L		<0.010	<0.010	----	----	----
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L		0.0054	0.0030	----	----	----
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		0.59	<0.30	----	----	----
Cyanides										
cyanide, free	----	E339	0.0020	mg/L		0.0020	0.0022	----	----	----
cyanide, strong acid dissociable (total)	----	E333	0.0020	mg/L		<0.0020	0.0021	----	----	----
cyanide, weak acid dissociable	----	E336	0.0020	mg/L		<0.0020	<0.0020	----	----	----
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L		0.801	0.166	----	----	----
antimony, total	7440-36-0	E420	0.00010	mg/L		<0.00010	<0.00010	----	----	----
arsenic, total	7440-38-2	E420	0.00010	mg/L		0.00154	0.00117	----	----	----
barium, total	7440-39-3	E420	0.00010	mg/L		0.0107	0.00901	----	----	----
beryllium, total	7440-41-7	E420	0.000020	mg/L		0.000046	<0.000020	----	----	----
bismuth, total	7440-69-9	E420	0.000050	mg/L		<0.000050	<0.000050	----	----	----
boron, total	7440-42-8	E420	0.010	mg/L		<0.010	<0.010	----	----	----
cadmium, total	7440-43-9	E420	0.0000050	mg/L		0.0000370	0.0000185	----	----	----
calcium, total	7440-70-2	E420	0.050	mg/L		11.8	10.6	----	----	----
cesium, total	7440-46-2	E420	0.000010	mg/L		0.000068	<0.000010	----	----	----
chromium, total	7440-47-3	E420	0.00050	mg/L		0.00209	0.00076	----	----	----
cobalt, total	7440-48-4	E420	0.00010	mg/L		0.00047	0.00043	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	DUP02	NDR-P-01	----	----	----
					Client sampling date / time	30-Aug-2022	30-Aug-2022	----	----	----
Analyte	CAS Number	Method	LOR	Unit		WT2213093-011	WT2213093-012	--------	--------	--------
						Result	Result	----	----	----
Total Metals										
copper, total	7440-50-8	E420	0.00050	mg/L		0.00217	<0.00050	----	----	----
iron, total	7439-89-6	E420	0.010	mg/L		1.45	0.777	----	----	----
lead, total	7439-92-1	E420	0.000050	mg/L		0.000555	0.000288	----	----	----
lithium, total	7439-93-2	E420	0.0010	mg/L		0.0013	<0.0010	----	----	----
magnesium, total	7439-95-4	E420	0.0050	mg/L		3.06	2.83	----	----	----
manganese, total	7439-96-5	E420	0.00010	mg/L		0.0685	0.111	----	----	----
mercury, total	7439-97-6	E508-L	0.50	ng/L		7.22	0.95	----	----	----
molybdenum, total	7439-98-7	E420	0.000050	mg/L		0.000062	<0.000050	----	----	----
nickel, total	7440-02-0	E420	0.00050	mg/L		0.00171	0.00066	----	----	----
phosphorus, total	7723-14-0	E420	0.050	mg/L		0.051	<0.050	----	----	----
potassium, total	7440-09-7	E420	0.050	mg/L		0.405	0.106	----	----	----
rubidium, total	7440-17-7	E420	0.00020	mg/L		0.00212	0.00047	----	----	----
selenium, total	7782-49-2	E420	0.000050	mg/L		0.000180	0.000155	----	----	----
silicon, total	7440-21-3	E420	0.10	mg/L		3.48	1.61	----	----	----
silver, total	7440-22-4	E420	0.000010	mg/L		<0.000010	<0.000010	----	----	----
sodium, total	7440-23-5	E420	0.050	mg/L		0.999	0.431	----	----	----
strontium, total	7440-24-6	E420	0.00020	mg/L		0.0280	0.0244	----	----	----
sulfur, total	7704-34-9	E420	0.50	mg/L		0.69	<0.50	----	----	----
tellurium, total	13494-80-9	E420	0.00020	mg/L		<0.00020	<0.00020	----	----	----
thallium, total	7440-28-0	E420	0.000010	mg/L		0.000010	<0.000010	----	----	----
thorium, total	7440-29-1	E420	0.00010	mg/L		0.00015	<0.00010	----	----	----
tin, total	7440-31-5	E420	0.00010	mg/L		<0.00010	0.00031	----	----	----
titanium, total	7440-32-6	E420	0.00030	mg/L		0.0294	0.00256	----	----	----
tungsten, total	7440-33-7	E420	0.00010	mg/L		<0.00010	<0.00010	----	----	----
uranium, total	7440-61-1	E420	0.000010	mg/L		0.000072	0.000012	----	----	----
vanadium, total	7440-62-2	E420	0.00050	mg/L		0.00183	<0.00050	----	----	----
zinc, total	7440-66-6	E420	0.0030	mg/L		0.0077	0.0089	----	----	----
zirconium, total	7440-67-7	E420	0.00020	mg/L		0.00079	<0.00020	----	----	----
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.307	0.162	----	----	----
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		<0.00010	<0.00010	----	----	----
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00150	0.00119	----	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	DUP02	NDR-P-01	----	----	----
					Client sampling date / time	30-Aug-2022	30-Aug-2022	----	----	----
						WT2213093-011	WT2213093-012	--------	--------	--------
						Result	Result	----	----	----
Dissolved Metals										
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.00706	0.00874	----	----	----
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L		0.000027	<0.000020	----	----	----
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	----	----	----
boron, dissolved	7440-42-8	E421	0.010	mg/L		<0.010	<0.010	----	----	----
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		0.0000296	0.0000164	----	----	----
calcium, dissolved	7440-70-2	E421	0.050	mg/L		11.4	10.6	----	----	----
cesium, dissolved	7440-46-2	E421	0.000010	mg/L		<0.000010	<0.000010	----	----	----
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		0.00104	0.00062	----	----	----
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		0.00015	0.00040	----	----	----
copper, dissolved	7440-50-8	E421	0.00020	mg/L		0.00198	0.00027	----	----	----
iron, dissolved	7439-89-6	E421	0.010	mg/L		0.749	0.622	----	----	----
lead, dissolved	7439-92-1	E421	0.000050	mg/L		0.000281	0.000305	----	----	----
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		<0.0010	<0.0010	----	----	----
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L		2.87	2.91	----	----	----
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.0360	0.110	----	----	----
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		0.000050	<0.000050	----	----	----
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		0.00111	0.00059	----	----	----
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	----	----	----
potassium, dissolved	7440-09-7	E421	0.050	mg/L		0.306	0.106	----	----	----
rubidium, dissolved	7440-17-7	E421	0.00020	mg/L		0.00116	0.00042	----	----	----
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.000195	0.000176	----	----	----
silicon, dissolved	7440-21-3	E421	0.050	mg/L		2.71	1.61	----	----	----
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	<0.000010	----	----	----
sodium, dissolved	7440-23-5	E421	0.050	mg/L		1.05	0.420	----	----	----
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		0.0254	0.0250	----	----	----
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		0.62	<0.50	----	----	----
tellurium, dissolved	13494-80-9	E421	0.00020	mg/L		<0.00020	<0.00020	----	----	----
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	<0.000010	----	----	----
thorium, dissolved	7440-29-1	E421	0.00010	mg/L		0.00017	<0.00010	----	----	----
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	<0.00010	----	----	----
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		0.00873	0.00217	----	----	----
tungsten, dissolved	7440-33-7	E421	0.00010	mg/L		<0.00010	<0.00010	----	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	DUP02	NDR-P-01	----	----	----
					Client sampling date / time	30-Aug-2022	30-Aug-2022	----	----	----
						WT2213093-011	WT2213093-012	--------	--------	--------
						Result	Result	----	----	----
Dissolved Metals										
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		0.000061	0.000012	----	----	----
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		0.00092	<0.00050	----	----	----
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		0.0077	0.0094	----	----	----
zirconium, dissolved	7440-67-7	E421	0.00030	mg/L		0.00079	<0.00030	----	----	----
dissolved metals filtration location	----	EP421	-	-		Field	Field	----	----	----
Speciated Metals										
methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L		0.000204	0.000066	----	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2213093**	Page	: 1 of 34
Client	: **Wood Environment & Infrastructure Solutions Canada Limited**	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 2020 Winston Park Drive Suite 600 Mississauga ON Canada L6H 6X7	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2002	Date Samples Received	: 06-Sep-2022 09:00
PO	: OMEMA2002.2021C.400.5120.573000	Issue Date	: 19-Sep-2022 11:32
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: OMEMA2002		
No. of samples received	: 12		
No. of samples analysed	: 12		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers occur - please see following pages for full details.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) MATR01	E298	02-Sep-2022	10-Sep-2022	----	----		12-Sep-2022	28 days	10 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) MATR02	E298	02-Sep-2022	10-Sep-2022	----	----		12-Sep-2022	28 days	10 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WBRS03	E298	01-Sep-2022	10-Sep-2022	----	----		12-Sep-2022	28 days	11 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BDRP-02B	E298	31-Aug-2022	10-Sep-2022	----	----		12-Sep-2022	28 days	12 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) NDRTRIB01	E298	31-Aug-2022	10-Sep-2022	----	----		12-Sep-2022	28 days	12 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) DUP01	E298	30-Aug-2022	10-Sep-2022	----	----		12-Sep-2022	28 days	13 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) DUP02	E298	30-Aug-2022	10-Sep-2022	----	----		12-Sep-2022	28 days	13 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
NDR-P-01	E298	30-Aug-2022	10-Sep-2022	----	----		12-Sep-2022	28 days	13 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
NDRP03	E298	30-Aug-2022	10-Sep-2022	----	----		12-Sep-2022	28 days	13 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
NDRP04	E298	30-Aug-2022	10-Sep-2022	----	----		12-Sep-2022	28 days	13 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
WBRS01	E298	30-Aug-2022	10-Sep-2022	----	----		12-Sep-2022	28 days	13 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
WBRS04	E298	30-Aug-2022	10-Sep-2022	----	----		12-Sep-2022	28 days	13 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MATR01	E235.Cl	02-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MATR02	E235.Cl	02-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
WBRS03	E235.Cl	01-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
BDRP-02B	E235.Cl	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDRTRIB01	E235.Cl	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] DUP01	E235.Cl	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] DUP02	E235.Cl	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-P-01	E235.Cl	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDRP03	E235.Cl	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDRP04	E235.Cl	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] WBRS01	E235.Cl	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] WBRS04	E235.Cl	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MATR01	E235.F	02-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MATR02	E235.F	02-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	5 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
WBRS03	E235.F	01-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
BDRP-02B	E235.F	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
NDRTRIB01	E235.F	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
DUP01	E235.F	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
DUP02	E235.F	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
NDR-P-01	E235.F	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
NDRP03	E235.F	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
NDRP04	E235.F	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
WBRS01	E235.F	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
WBRS04	E235.F	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
MATR01	E235.NO3	02-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	5 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
MATR02	E235.NO3	02-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	5 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
WBRS03	E235.NO3	01-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
BDRP-02B	E235.NO3	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
NDRTRIB01	E235.NO3	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
DUP01	E235.NO3	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	8 days	× EHTL
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
DUP02	E235.NO3	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	8 days	× EHTL

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-P-01	E235.NO3	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	8 days	× EHTL
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDRP03	E235.NO3	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	8 days	× EHTL
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDRP04	E235.NO3	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	8 days	× EHTL
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] WBRS01	E235.NO3	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	8 days	× EHTL
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] WBRS04	E235.NO3	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	8 days	× EHTL
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MATR01	E235.NO2	02-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	5 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MATR02	E235.NO2	02-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	5 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] WBRS03	E235.NO2	01-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] BDRP-02B	E235.NO2	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDRTRIB01	E235.NO2	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	7 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] DUP01	E235.NO2	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	8 days	× EHTL
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] DUP02	E235.NO2	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	8 days	× EHTL
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-P-01	E235.NO2	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	8 days	× EHTL
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDRP03	E235.NO2	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	8 days	× EHTL
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDRP04	E235.NO2	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	8 days	× EHTL
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] WBRS01	E235.NO2	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	8 days	× EHTL
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] WBRS04	E235.NO2	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	8 days	× EHTL
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MATR01	E235.SO4	02-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MATR02	E235.SO4	02-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] WBRS03	E235.SO4	01-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] BDRP-02B	E235.SO4	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDRTRIB01	E235.SO4	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] DUP01	E235.SO4	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] DUP02	E235.SO4	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDR-P-01	E235.SO4	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDRP03	E235.SO4	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDRP04	E235.SO4	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
WBRS01	E235.SO4	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
WBRS04	E235.SO4	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
MATR01	E372-U	02-Sep-2022	12-Sep-2022	----	----		13-Sep-2022	28 days	12 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
MATR02	E372-U	02-Sep-2022	12-Sep-2022	----	----		13-Sep-2022	28 days	12 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
WBRS03	E372-U	01-Sep-2022	12-Sep-2022	----	----		13-Sep-2022	28 days	13 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
BDRP-02B	E372-U	31-Aug-2022	12-Sep-2022	----	----		13-Sep-2022	28 days	14 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
NDRTRIB01	E372-U	31-Aug-2022	12-Sep-2022	----	----		13-Sep-2022	28 days	14 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
DUP01	E372-U	30-Aug-2022	12-Sep-2022	----	----		13-Sep-2022	28 days	15 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
DUP02	E372-U	30-Aug-2022	12-Sep-2022	----	----		13-Sep-2022	28 days	15 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) NDR-P-01	E372-U	30-Aug-2022	12-Sep-2022	----	----		13-Sep-2022	28 days	15 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) NDRP03	E372-U	30-Aug-2022	12-Sep-2022	----	----		13-Sep-2022	28 days	15 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) NDRP04	E372-U	30-Aug-2022	12-Sep-2022	----	----		13-Sep-2022	28 days	15 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) WBRS01	E372-U	30-Aug-2022	12-Sep-2022	----	----		13-Sep-2022	28 days	15 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) WBRS04	E372-U	30-Aug-2022	12-Sep-2022	----	----		13-Sep-2022	28 days	15 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) DUP01	E339	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) DUP02	E339	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDR-P-01	E339	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDRP03	E339	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	10 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDRP04	E339	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) WBRS01	E339	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) WBRS04	E339	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) MATR01	E339	02-Sep-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	7 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) MATR02	E339	02-Sep-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	7 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) WBRS03	E339	01-Sep-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	8 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BDRP-02B	E339	31-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDRTRIB01	E339	31-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) DUP01	E333	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	10 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
DUP02	E333	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDR-P-01	E333	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDRP03	E333	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDRP04	E333	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
WBRS01	E333	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
WBRS04	E333	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
MATR01	E333	02-Sep-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	7 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
MATR02	E333	02-Sep-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	7 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
WBRS03	E333	01-Sep-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
BDRP-02B	E333	31-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDRTRIB01	E333	31-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
DUP01	E336	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
DUP02	E336	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDR-P-01	E336	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDRP03	E336	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDRP04	E336	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
WBRS01	E336	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
WBRS04	E336	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	10 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) MATR01	E336	02-Sep-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	7 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) MATR02	E336	02-Sep-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	7 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) WBRS03	E336	01-Sep-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	8 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BDRP-02B	E336	31-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDRTRIB01	E336	31-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	9 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MATR01	E421	02-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	180 days	5 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MATR02	E421	02-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	180 days	5 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) WBRS03	E421	01-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	180 days	6 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) BDRP-02B	E421	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	180 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDRTRIB01	E421	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) DUP01	E421	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	180 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) DUP02	E421	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	180 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDR-P-01	E421	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	180 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDRP03	E421	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	180 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDRP04	E421	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	180 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) WBRS01	E421	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	180 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) WBRS04	E421	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	180 days	8 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] MATR01	E283	02-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Acidity by Titration										
HDPE [ON MECP]										
MATR02	E283	02-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	5 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP]										
WBRS03	E283	01-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	6 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP]										
BDRP-02B	E283	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	7 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP]										
NDRTRIB01	E283	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	7 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP]										
DUP01	E283	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP]										
DUP02	E283	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP]										
NDR-P-01	E283	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP]										
NDRP03	E283	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP]										
NDRP04	E283	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Acidity by Titration										
HDPE [ON MECP]										
WBRS01	E283	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP]										
WBRS04	E283	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
MATR01	E290	02-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
MATR02	E290	02-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
WBRS03	E290	01-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
BDRP-02B	E290	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
NDRTRIB01	E290	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
DUP01	E290	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
DUP02	E290	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-P-01	E290	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDRP03	E290	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDRP04	E290	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] WBRS01	E290	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] WBRS04	E290	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] MATR01	E100	02-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] MATR02	E100	02-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] WBRS03	E100	01-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] BDRP-02B	E100	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDRTRIB01	E100	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] DUP01	E100	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] DUP02	E100	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-P-01	E100	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDRP03	E100	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDRP04	E100	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] WBRS01	E100	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] WBRS04	E100	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MATR01	E108	02-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE [ON MECP] MATR02	E108	02-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	5 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] WBRS03	E108	01-Sep-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] BDRP-02B	E108	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	7 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDRTRIB01	E108	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	7 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] DUP01	E108	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] DUP02	E108	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-P-01	E108	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDRP03	E108	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDRP04	E108	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE [ON MECP] WBRS01	E108	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] WBRS04	E108	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MATR01	E162	02-Sep-2022	----	----	----		07-Sep-2022	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MATR02	E162	02-Sep-2022	----	----	----		07-Sep-2022	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] WBRS03	E162	01-Sep-2022	----	----	----		06-Sep-2022	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] BDRP-02B	E162	31-Aug-2022	----	----	----		06-Sep-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDRTRIB01	E162	31-Aug-2022	----	----	----		06-Sep-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] DUP01	E162	30-Aug-2022	----	----	----		06-Sep-2022	7 days	8 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] DUP02	E162	30-Aug-2022	----	----	----		06-Sep-2022	7 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-P-01	E162	30-Aug-2022	----	----	----		06-Sep-2022	7 days	8 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDRP03	E162	30-Aug-2022	----	----	----		06-Sep-2022	7 days	8 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDRP04	E162	30-Aug-2022	----	----	----		06-Sep-2022	7 days	8 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] WBRS01	E162	30-Aug-2022	----	----	----		06-Sep-2022	7 days	8 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] WBRS04	E162	30-Aug-2022	----	----	----		06-Sep-2022	7 days	8 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] MATR01	E160	02-Sep-2022	----	----	----		07-Sep-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] MATR02	E160	02-Sep-2022	----	----	----		07-Sep-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] WBRS03	E160	01-Sep-2022	----	----	----		06-Sep-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] BDRP-02B	E160	31-Aug-2022	----	----	----		06-Sep-2022	7 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDRTRIB01	E160	31-Aug-2022	----	----	----		06-Sep-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] DUP01	E160	30-Aug-2022	----	----	----		06-Sep-2022	7 days	8 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] DUP02	E160	30-Aug-2022	----	----	----		06-Sep-2022	7 days	8 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-P-01	E160	30-Aug-2022	----	----	----		06-Sep-2022	7 days	8 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDRP03	E160	30-Aug-2022	----	----	----		06-Sep-2022	7 days	8 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDRP04	E160	30-Aug-2022	----	----	----		06-Sep-2022	7 days	8 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] WBRS01	E160	30-Aug-2022	----	----	----		06-Sep-2022	7 days	8 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] WBRS04	E160	30-Aug-2022	----	----	----		06-Sep-2022	7 days	8 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid) MATR01	E536	02-Sep-2022	12-Sep-2022	----	----		14-Sep-2022	180 days	13 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
MATR02	E536	02-Sep-2022	12-Sep-2022	----	----		14-Sep-2022	180 days	13 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
WBRS03	E536	01-Sep-2022	12-Sep-2022	----	----		14-Sep-2022	180 days	14 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
BDRP-02B	E536	31-Aug-2022	12-Sep-2022	----	----		14-Sep-2022	180 days	15 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
NDRTRIB01	E536	31-Aug-2022	12-Sep-2022	----	----		14-Sep-2022	180 days	15 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
DUP01	E536	30-Aug-2022	12-Sep-2022	----	----		14-Sep-2022	180 days	16 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
NDRP04	E536	30-Aug-2022	12-Sep-2022	----	----		14-Sep-2022	180 days	16 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
WBRS01	E536	30-Aug-2022	12-Sep-2022	----	----		14-Sep-2022	180 days	16 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
WBRS04	E536	30-Aug-2022	12-Sep-2022	----	----		14-Sep-2022	180 days	16 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
DUP02	E536	30-Aug-2022	16-Sep-2022	----	----		16-Sep-2022	180 days	18 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid) NDR-P-01	E536	30-Aug-2022	16-Sep-2022	----	----		16-Sep-2022	180 days	18 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid) NDRP03	E536	30-Aug-2022	16-Sep-2022	----	----		16-Sep-2022	180 days	18 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved) MATR01	E508-L	02-Sep-2022	13-Sep-2022	28 days	11 days	✓	13-Sep-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved) MATR02	E508-L	02-Sep-2022	13-Sep-2022	28 days	11 days	✓	13-Sep-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved) WBRS03	E508-L	01-Sep-2022	13-Sep-2022	28 days	12 days	✓	13-Sep-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved) BDRP-02B	E508-L	31-Aug-2022	13-Sep-2022	28 days	13 days	✓	13-Sep-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved) NDRTRIB01	E508-L	31-Aug-2022	13-Sep-2022	28 days	13 days	✓	13-Sep-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved) DUP01	E508-L	30-Aug-2022	13-Sep-2022	28 days	14 days	✓	13-Sep-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved) DUP02	E508-L	30-Aug-2022	13-Sep-2022	28 days	14 days	✓	13-Sep-2022	28 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved)										
NDR-P-01	E508-L	30-Aug-2022	13-Sep-2022	28 days	14 days	✓	13-Sep-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved)										
NDRP03	E508-L	30-Aug-2022	13-Sep-2022	28 days	14 days	✓	13-Sep-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved)										
NDRP04	E508-L	30-Aug-2022	13-Sep-2022	28 days	14 days	✓	13-Sep-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved)										
WBRS04	E508-L	30-Aug-2022	13-Sep-2022	28 days	14 days	✓	13-Sep-2022	28 days	0 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
MATR01	E420	02-Sep-2022	06-Sep-2022	----	----		07-Sep-2022	180 days	6 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
MATR02	E420	02-Sep-2022	06-Sep-2022	----	----		07-Sep-2022	180 days	6 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
WBRS03	E420	01-Sep-2022	06-Sep-2022	----	----		07-Sep-2022	180 days	7 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
BDRP-02B	E420	31-Aug-2022	06-Sep-2022	----	----		07-Sep-2022	180 days	8 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
NDRTRIB01	E420	31-Aug-2022	06-Sep-2022	----	----		07-Sep-2022	180 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) DUP01	E420	30-Aug-2022	06-Sep-2022	----	----		07-Sep-2022	180 days	9 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) DUP02	E420	30-Aug-2022	06-Sep-2022	----	----		07-Sep-2022	180 days	9 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDR-P-01	E420	30-Aug-2022	06-Sep-2022	----	----		07-Sep-2022	180 days	9 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDRP03	E420	30-Aug-2022	06-Sep-2022	----	----		07-Sep-2022	180 days	9 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDRP04	E420	30-Aug-2022	06-Sep-2022	----	----		07-Sep-2022	180 days	9 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) WBRS01	E420	30-Aug-2022	06-Sep-2022	----	----		07-Sep-2022	180 days	9 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) WBRS04	E420	30-Aug-2022	06-Sep-2022	----	----		07-Sep-2022	180 days	9 days	✓

Legend & Qualifier Definitions

EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	634998	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	634996	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	640847	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	635002	1	20	5.0	5.0	✓
Conductivity in Water	E100	634995	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	635164	1	12	8.3	5.0	✓
Fluoride in Water by IC	E235.F	634999	1	20	5.0	5.0	✓
Free Cyanide	E339	638157	1	15	6.6	5.0	✓
Nitrate in Water by IC	E235.NO3	635000	1	20	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2	635001	1	20	5.0	5.0	✓
pH by Meter	E108	634997	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	635003	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	634361	2	35	5.7	5.0	✓
Total Cyanide	E333	638155	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	644254	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	634745	1	20	5.0	5.0	✓
Total Methylmercury in Water by GCAFS	E536	643266	3	41	7.3	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	640846	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	634364	2	33	6.0	4.7	✓
WAD Cyanide	E336	638156	1	16	6.2	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	634998	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	634996	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	640847	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	635002	1	20	5.0	5.0	✓
Conductivity in Water	E100	634995	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	635164	1	12	8.3	5.0	✓
Fluoride in Water by IC	E235.F	634999	1	20	5.0	5.0	✓
Free Cyanide	E339	638157	1	15	6.6	5.0	✓
Nitrate in Water by IC	E235.NO3	635000	1	20	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2	635001	1	20	5.0	5.0	✓
pH by Meter	E108	634997	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	635003	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	634361	2	35	5.7	5.0	✓
Total Cyanide	E333	638155	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	644254	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	634745	1	20	5.0	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Total Methylmercury in Water by GCAFS	E536	643266	3	41	7.3	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	640846	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	634364	2	33	6.0	4.7	✓
WAD Cyanide	E336	638156	1	16	6.2	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	634998	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	634996	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	640847	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	635002	1	20	5.0	5.0	✓
Conductivity in Water	E100	634995	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	635164	1	12	8.3	5.0	✓
Fluoride in Water by IC	E235.F	634999	1	20	5.0	5.0	✓
Free Cyanide	E339	638157	1	15	6.6	5.0	✓
Nitrate in Water by IC	E235.NO3	635000	1	20	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2	635001	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	635003	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	634361	2	35	5.7	5.0	✓
Total Cyanide	E333	638155	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	644254	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	634745	1	20	5.0	5.0	✓
Total Methylmercury in Water by GCAFS	E536	643266	3	41	7.3	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	640846	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	634364	2	33	6.0	4.7	✓
WAD Cyanide	E336	638156	1	16	6.2	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	640847	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	635002	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	635164	1	12	8.3	5.0	✓
Fluoride in Water by IC	E235.F	634999	1	20	5.0	5.0	✓
Free Cyanide	E339	638157	1	15	6.6	5.0	✓
Nitrate in Water by IC	E235.NO3	635000	1	20	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2	635001	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	635003	1	20	5.0	5.0	✓
Total Cyanide	E333	638155	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	644254	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	634745	1	20	5.0	5.0	✓
Total Methylmercury in Water by GCAFS	E536	643266	1	41	2.4	5.0	×
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	640846	1	20	5.0	5.0	✓
WAD Cyanide	E336	638156	1	16	6.2	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Waterloo - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Waterloo - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry	E160 Waterloo - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Waterloo - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Chloride in Water by IC	E235.Cl Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC	E235.NO2 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC	E235.NO3 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Waterloo - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Waterloo - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Waterloo - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Cyanide	E333 Waterloo - Environmental	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336 Waterloo - Environmental	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339 Waterloo - Environmental	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Waterloo - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total Metals in Water by CRC ICPMS	E420 Waterloo - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 Waterloo - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Total Methylmercury in Water by GCAFS	E536 Vancouver - Environmental	Water	EPA 1630 (mod)	This method follows Method 1630 of the US EPA. Samples are distilled under an inert gas flow to isolate methylmercury and minimize matrix interferences. The distillate is analyzed by aqueous phase ethylation, purge and trap, desorption and GC separation. The separated species are then pyrolized to elemental Hg and quantified by cold vapour atomic flourescence spectroscopy. Results are reported "as MeHg".

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Hardness (Calculated)	EC100 Waterloo - Environmental	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Waterloo - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for Total Phosphorus in water	EP372 Waterloo - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Waterloo - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Total Methylmercury Water Preparation	EP536 Vancouver - Environmental	Water	EPA 1630	This method follows Method 1630 of the US EPA. Samples are distilled under an inert gas flow to isolate methylmercury and minimize matrix interferences. The distillate is analyzed by aqueous phase ethylation, purge and trap, desorption and GC separation. The separated species are then pyrolized to elemental Hg and quantified by cold vapour atomic flourescence spectroscopy. Results are reported "as MeHg".

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **WT2213093**	Page	: 1 of 18
Client	: Wood Environment & Infrastructure Solutions Canada Limited	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 2020 Winston Park Drive Suite 600 Mississauga ON Canada L6H 6X7	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2002	Date Samples Received	: 06-Sep-2022 09:00
PO	: OMEMA2002.2021C.400.5120.573000	Date Analysis Commenced	: 06-Sep-2022
C-O-C number	: ----	Issue Date	: 19-Sep-2022 11:32
Sampler	: ----		
Site	: ----		
Quote number	: OMEMA2002		
No. of samples received	: 12		
No. of samples analysed	: 12		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Greg Pokocky	Supervisor - Inorganic	Waterloo Inorganics, Waterloo, Ontario
Greg Pokocky	Supervisor - Inorganic	Waterloo Metals, Waterloo, Ontario
Hamideh Moradi	Analyst	Vancouver Metals, Burnaby, British Columbia
Jon Fisher	Department Manager - Inorganics	Waterloo Inorganics, Waterloo, Ontario
Kinny Wu	Lab Analyst	Vancouver Metals, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 634361)											
WT2213095-001	Anonymous	solids, total dissolved [TDS]	----	E162	20	mg/L	140	114	26	Diff <2x LOR	----
Physical Tests (QC Lot: 634364)											
WT2213095-001	Anonymous	solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 634995)											
WT2213093-001	MATR01	conductivity	----	E100	1.0	µS/cm	148	146	0.748%	10%	----
Physical Tests (QC Lot: 634996)											
WT2213093-001	MATR01	alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	60.7	62.5	2.99%	20%	----
Physical Tests (QC Lot: 634997)											
WT2213093-001	MATR01	pH	----	E108	0.10	pH units	7.63	7.66	0.392%	4%	----
Physical Tests (QC Lot: 634998)											
WT2213093-001	MATR01	acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 635621)											
WT2213093-001	MATR01	solids, total dissolved [TDS]	----	E162	13	mg/L	85	89	4	Diff <2x LOR	----
Physical Tests (QC Lot: 635633)											
WT2213093-001	MATR01	solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 634999)											
WT2213093-001	MATR01	fluoride	16984-48-8	E235.F	0.020	mg/L	0.035	0.035	0.0003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 635000)											
WT2213093-001	MATR01	nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	0.081	0.080	0.0008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 635001)											
WT2213093-001	MATR01	nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 635002)											
WT2213093-001	MATR01	chloride	16887-00-6	E235.Cl	0.50	mg/L	4.54	4.50	0.03	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 635003)											
WT2213093-001	MATR01	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	5.52	5.49	0.510%	20%	----
Anions and Nutrients (QC Lot: 640846)											
WT2213093-001	MATR01	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0128	0.0126	0.0003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 640847)											
WT2213093-001	MATR01	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0324	0.0327	0.0003	Diff <2x LOR	----
Cyanides (QC Lot: 638155)											
WT2213093-001	MATR01	cyanide, strong acid dissociable (total)	----	E333	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Cyanides (QC Lot: 638156)											
WT2213093-001	MATR01	cyanide, weak acid dissociable	----	E336	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Cyanides (QC Lot: 638157)											
WT2213093-001	MATR01	cyanide, free	----	E339	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Total Metals (QC Lot: 634745)											
WT2213093-001	MATR01	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.218	0.222	1.73%	20%	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00093	0.00091	0.00002	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.00880	0.00838	4.90%	20%	----
		beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	0.015	0.015	0.0005	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000130	0.0000123	0.0000007	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.050	mg/L	19.6	19.2	1.97%	20%	----
		cesium, total	7440-46-2	E420	0.000010	mg/L	0.000022	0.000023	0.0000007	Diff <2x LOR	----
		chromium, total	7440-47-3	E420	0.00050	mg/L	0.00078	0.00076	0.00001	Diff <2x LOR	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	0.00016	0.00016	0.000003	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	0.00144	0.00143	0.00001	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	0.358	0.370	3.45%	20%	----
		lead, total	7439-92-1	E420	0.000050	mg/L	0.000130	0.000127	0.000003	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	4.96	5.09	2.58%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.0306	0.0309	1.13%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000136	0.000135	0.000002	Diff <2x LOR	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	0.00070	0.00076	0.00006	Diff <2x LOR	----
		phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.050	mg/L	0.570	0.578	1.33%	20%	----
		rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00167	0.00162	0.00005	Diff <2x LOR	----
		selenium, total	7782-49-2	E420	0.000050	mg/L	0.000112	0.000138	0.000026	Diff <2x LOR	----
		silicon, total	7440-21-3	E420	0.10	mg/L	2.58	2.65	2.67%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	3.80	3.83	0.532%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.0341	0.0344	0.837%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	1.90	1.95	0.06	Diff <2x LOR	----
		tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 634745) - continued											
WT2213093-001	MATR01	thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	0.00808	0.00875	8.01%	20%	----
		tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.000071	0.000072	0.000002	Diff <2x LOR	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00080	0.00080	0.000002	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		zirconium, total	7440-67-7	E420	0.00020	mg/L	0.00033	0.00035	0.00002	Diff <2x LOR	----
Total Metals (QC Lot: 644254)											
WT2213093-001	MATR01	mercury, total	7439-97-6	E508-L	0.50	ng/L	2.16	2.28	0.12	Diff <2x LOR	----
Dissolved Metals (QC Lot: 635164)											
WT2213093-001	MATR01	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0549	0.0542	1.31%	20%	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00088	0.00086	0.00002	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.00750	0.00754	0.510%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.016	0.015	0.0006	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000099	0.0000087	0.0000012	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	20.7	20.1	3.17%	20%	----
		cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00117	0.00117	0.0000008	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	0.148	0.151	2.09%	20%	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	0.000057	0.000056	0.0000008	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	4.93	4.99	1.14%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00553	0.00573	3.44%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000125	0.000124	0.0000009	Diff <2x LOR	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00055	0.00054	0.00001	Diff <2x LOR	----
		phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.527	0.529	0.267%	20%	----
		rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00130	0.00129	0.00001	Diff <2x LOR	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000106	0.000099	0.000007	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 635164) - continued											
WT2213093-001	MATR01	silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.37	2.35	0.714%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.66	3.79	3.29%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.0359	0.0345	3.88%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	2.26	2.17	0.10	Diff <2x LOR	----
		tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	0.00178	0.00170	0.00008	Diff <2x LOR	----
		tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000065	0.000068	0.000003	Diff <2x LOR	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0025	0.0024	0.0001	Diff <2x LOR	----
		zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 643266)											
VA22C1219-001	Anonymous	methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L	0.000049	0.000052	0.000004	Diff <2x LOR	----
Speciated Metals (QC Lot: 643460)											
CG2211952-001	Anonymous	methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L	0.000059	0.000051	0.000008	Diff <2x LOR	----
Speciated Metals (QC Lot: 646463)											
VA22C0905-001	Anonymous	methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L	0.000383	0.000486	23.7%	30%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 634361)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 634364)						
solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 634995)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 634996)						
alkalinity, total (as CaCO3)	----	E290	1	mg/L	1.4	----
Physical Tests (QCLot: 634998)						
acidity (as CaCO3)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 635621)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 635633)						
solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Anions and Nutrients (QCLot: 634999)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 635000)						
nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 635001)						
nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 635002)						
chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 635003)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 640846)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 640847)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Cyanides (QCLot: 638155)						
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 638156)						
cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 638157)						
cyanide, free	----	E339	0.002	mg/L	<0.0020	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 634745)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 634745) - continued						
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----
Total Metals (QCLot: 644254)						
mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Dissolved Metals (QCLot: 635164)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 635164) - continued						
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Speciated Metals (QCLot: 643266)						
methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	<0.000020	----
Speciated Metals (QCLot: 643460)						
methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	<0.000020	----
Speciated Metals (QCLot: 646463)						
methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	<0.000020	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 634361)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	97.0	85.0	115	----
Physical Tests (QCLot: 634364)									
solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	87.3	85.0	115	----
Physical Tests (QCLot: 634995)									
conductivity	----	E100	1	µS/cm	1409 µS/cm	97.7	90.0	110	----
Physical Tests (QCLot: 634996)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	150 mg/L	100	85.0	115	----
Physical Tests (QCLot: 634997)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 634998)									
acidity (as CaCO3)	----	E283	2	mg/L	50 mg/L	104	85.0	115	----
Physical Tests (QCLot: 635621)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	88.3	85.0	115	----
Physical Tests (QCLot: 635633)									
solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	104	85.0	115	----
Anions and Nutrients (QCLot: 634999)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 635000)									
nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 635001)									
nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 635002)									
chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 635003)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 640846)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.53 mg/L	103	80.0	120	----
Anions and Nutrients (QCLot: 640847)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	90.4	85.0	115	----
Cyanides (QCLot: 638155)									
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	0.25 mg/L	91.7	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Cyanides (QCLot: 638156)									
cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	100	80.0	120	----
Cyanides (QCLot: 638157)									
cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	98.6	80.0	120	----
Total Metals (QCLot: 634745)									
aluminum, total	7429-90-5	E420	0.003	mg/L	0.1 mg/L	99.4	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	0.05 mg/L	97.8	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	0.05 mg/L	101	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.0125 mg/L	98.8	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.005 mg/L	95.4	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	0.05 mg/L	96.7	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	0.05 mg/L	95.3	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.005 mg/L	98.9	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	2.5 mg/L	98.4	80.0	120	----
cesium, total	7440-46-2	E420	0.00001	mg/L	0.0025 mg/L	98.9	80.0	120	----
chromium, total	7440-47-3	E420	0.0005	mg/L	0.0125 mg/L	102	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.0125 mg/L	99.4	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.0125 mg/L	98.6	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	0.05 mg/L	99.4	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.025 mg/L	98.7	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.0125 mg/L	89.8	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	2.5 mg/L	109	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.0125 mg/L	99.8	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.0125 mg/L	94.7	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.025 mg/L	100	80.0	120	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	0.5 mg/L	105	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	2.5 mg/L	98.1	80.0	120	----
rubidium, total	7440-17-7	E420	0.0002	mg/L	0.005 mg/L	103	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	0.05 mg/L	103	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	0.5 mg/L	101	80.0	120	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.005 mg/L	95.6	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	2.5 mg/L	104	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.0125 mg/L	97.6	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	2.5 mg/L	94.7	80.0	120	----
tellurium, total	13494-80-9	E420	0.0002	mg/L	0.005 mg/L	99.3	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	0.05 mg/L	97.3	80.0	120	----
thorium, total	7440-29-1	E420	0.0001	mg/L	0.005 mg/L	98.0	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 634745) - continued									
tin, total	7440-31-5	E420	0.0001	mg/L	0.025 mg/L	94.6	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.0125 mg/L	97.3	80.0	120	----
tungsten, total	7440-33-7	E420	0.0001	mg/L	0.005 mg/L	99.6	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.00025 mg/L	98.9	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.025 mg/L	102	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.025 mg/L	102	80.0	120	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	0.005 mg/L	97.4	80.0	120	----
Total Metals (QCLot: 644254)									
mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	101	80.0	120	----
Dissolved Metals (QCLot: 635164)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	0.1 mg/L	101	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	0.05 mg/L	102	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	0.05 mg/L	101	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.0125 mg/L	103	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.005 mg/L	103	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	0.05 mg/L	95.9	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	0.05 mg/L	104	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.005 mg/L	98.1	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	2.5 mg/L	99.8	80.0	120	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.0025 mg/L	104	80.0	120	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.0125 mg/L	100	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.0125 mg/L	97.3	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.0125 mg/L	96.1	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	0.05 mg/L	98.7	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.025 mg/L	101	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.0125 mg/L	100	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	2.5 mg/L	110	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.0125 mg/L	101	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.0125 mg/L	100	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.025 mg/L	97.7	80.0	120	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	0.5 mg/L	111	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	2.5 mg/L	98.0	80.0	120	----
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.005 mg/L	102	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	0.05 mg/L	103	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	0.5 mg/L	105	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.005 mg/L	95.1	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 635164) - continued									
sodium, dissolved	7440-23-5	E421	0.05	mg/L	2.5 mg/L	103	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.0125 mg/L	103	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	2.5 mg/L	110	80.0	120	----
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.005 mg/L	99.2	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	0.05 mg/L	97.2	80.0	120	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.005 mg/L	98.5	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.025 mg/L	97.9	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.0125 mg/L	99.8	80.0	120	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.005 mg/L	98.1	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.00025 mg/L	103	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.025 mg/L	99.2	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.025 mg/L	97.0	80.0	120	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.005 mg/L	96.3	80.0	120	----
Speciated Metals (QCLot: 643266)									
methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	0.0025 µg/L	79.8	70.0	130	----
Speciated Metals (QCLot: 643460)									
methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	0.0025 µg/L	78.1	70.0	130	----
Speciated Metals (QCLot: 646463)									
methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	0.0025 µg/L	94.8	70.0	130	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 634999)										
WT2213093-001	MATR01	fluoride	16984-48-8	E235.F	0.992 mg/L	1 mg/L	99.2	75.0	125	----
Anions and Nutrients (QCLot: 635000)										
WT2213093-001	MATR01	nitrate (as N)	14797-55-8	E235.NO3	2.42 mg/L	2.5 mg/L	96.6	75.0	125	----
Anions and Nutrients (QCLot: 635001)										
WT2213093-001	MATR01	nitrite (as N)	14797-65-0	E235.NO2	0.496 mg/L	0.5 mg/L	99.2	75.0	125	----
Anions and Nutrients (QCLot: 635002)										
WT2213093-001	MATR01	chloride	16887-00-6	E235.Cl	98.3 mg/L	100 mg/L	98.3	75.0	125	----
Anions and Nutrients (QCLot: 635003)										
WT2213093-001	MATR01	sulfate (as SO4)	14808-79-8	E235.SO4	99.2 mg/L	100 mg/L	99.2	75.0	125	----
Anions and Nutrients (QCLot: 640846)										
WT2213093-001	MATR01	phosphorus, total	7723-14-0	E372-U	0.0961 mg/L	0.1 mg/L	96.1	70.0	130	----
Anions and Nutrients (QCLot: 640847)										
WT2213093-001	MATR01	ammonia, total (as N)	7664-41-7	E298	0.0983 mg/L	0.1 mg/L	98.3	75.0	125	----
Cyanides (QCLot: 638155)										
WT2213093-001	MATR01	cyanide, strong acid dissociable (total)	----	E333	0.223 mg/L	0.25 mg/L	89.2	75.0	125	----
Cyanides (QCLot: 638156)										
WT2213093-001	MATR01	cyanide, weak acid dissociable	----	E336	0.127 mg/L	0.125 mg/L	101	75.0	125	----
Cyanides (QCLot: 638157)										
WT2213093-001	MATR01	cyanide, free	----	E339	0.133 mg/L	0.125 mg/L	107	75.0	125	----
Total Metals (QCLot: 634745)										
WT2213093-002	MATR02	aluminum, total	7429-90-5	E420	ND mg/L	0.1 mg/L	ND	70.0	130	----
		antimony, total	7440-36-0	E420	0.0500 mg/L	0.05 mg/L	99.9	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0506 mg/L	0.05 mg/L	101	70.0	130	----
		barium, total	7440-39-3	E420	0.0120 mg/L	0.0125 mg/L	96.4	70.0	130	----
		beryllium, total	7440-41-7	E420	0.00477 mg/L	0.005 mg/L	95.5	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0484 mg/L	0.05 mg/L	96.9	70.0	130	----
		boron, total	7440-42-8	E420	0.048 mg/L	0.05 mg/L	95.6	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00511 mg/L	0.005 mg/L	102	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 634745) - continued										
WT2213093-002	MATR02	cesium, total	7440-46-2	E420	0.00253 mg/L	0.0025 mg/L	101	70.0	130	----
		chromium, total	7440-47-3	E420	0.0127 mg/L	0.0125 mg/L	101	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0126 mg/L	0.0125 mg/L	101	70.0	130	----
		copper, total	7440-50-8	E420	0.0124 mg/L	0.0125 mg/L	99.2	70.0	130	----
		iron, total	7439-89-6	E420	ND mg/L	0.05 mg/L	ND	70.0	130	----
		lead, total	7439-92-1	E420	0.0250 mg/L	0.025 mg/L	100	70.0	130	----
		lithium, total	7439-93-2	E420	0.0112 mg/L	0.0125 mg/L	89.3	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0121 mg/L	0.0125 mg/L	97.0	70.0	130	----
		nickel, total	7440-02-0	E420	0.0251 mg/L	0.025 mg/L	100	70.0	130	----
		phosphorus, total	7723-14-0	E420	0.490 mg/L	0.5 mg/L	98.0	70.0	130	----
		potassium, total	7440-09-7	E420	2.39 mg/L	2.5 mg/L	95.5	70.0	130	----
		rubidium, total	7440-17-7	E420	0.00502 mg/L	0.005 mg/L	100	70.0	130	----
		selenium, total	7782-49-2	E420	0.0523 mg/L	0.05 mg/L	105	70.0	130	----
		silicon, total	7440-21-3	E420	ND mg/L	0.5 mg/L	ND	70.0	130	----
		silver, total	7440-22-4	E420	0.00481 mg/L	0.005 mg/L	96.1	70.0	130	----
		sodium, total	7440-23-5	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	2.41 mg/L	2.5 mg/L	96.3	70.0	130	----
		tellurium, total	13494-80-9	E420	0.00490 mg/L	0.005 mg/L	97.9	70.0	130	----
		thallium, total	7440-28-0	E420	0.0486 mg/L	0.05 mg/L	97.2	70.0	130	----
		thorium, total	7440-29-1	E420	0.00496 mg/L	0.005 mg/L	99.2	70.0	130	----
		tin, total	7440-31-5	E420	0.0241 mg/L	0.025 mg/L	96.3	70.0	130	----
		titanium, total	7440-32-6	E420	0.0124 mg/L	0.0125 mg/L	99.2	70.0	130	----
		tungsten, total	7440-33-7	E420	0.00510 mg/L	0.005 mg/L	102	70.0	130	----
		uranium, total	7440-61-1	E420	0.000259 mg/L	0.00025 mg/L	104	70.0	130	----
		vanadium, total	7440-62-2	E420	0.0254 mg/L	0.025 mg/L	101	70.0	130	----
		zinc, total	7440-66-6	E420	0.0240 mg/L	0.025 mg/L	95.8	70.0	130	----
		zirconium, total	7440-67-7	E420	0.00465 mg/L	0.005 mg/L	93.0	70.0	130	----
Total Metals (QCLot: 644254)										
WT2213093-002	MATR02	mercury, total	7439-97-6	E508-L	4.99 ng/L	5 ng/L	99.8	70.0	130	----
Dissolved Metals (QCLot: 635164)										
WT2213093-002	MATR02	aluminum, dissolved	7429-90-5	E421	0.0992 mg/L	0.1 mg/L	99.2	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0517 mg/L	0.05 mg/L	103	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0547 mg/L	0.05 mg/L	109	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 635164) - continued										
WT2213093-002	MATR02	barium, dissolved	7440-39-3	E421	0.0129 mg/L	0.0125 mg/L	103	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.00540 mg/L	0.005 mg/L	108	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0500 mg/L	0.05 mg/L	100	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.052 mg/L	0.05 mg/L	104	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00536 mg/L	0.005 mg/L	107	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		cesium, dissolved	7440-46-2	E421	0.00271 mg/L	0.0025 mg/L	108	70.0	130	----
		chromium, dissolved	7440-47-3	E421	0.0126 mg/L	0.0125 mg/L	101	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0127 mg/L	0.0125 mg/L	101	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0126 mg/L	0.0125 mg/L	101	70.0	130	----
		iron, dissolved	7439-89-6	E421	ND mg/L	0.05 mg/L	ND	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0260 mg/L	0.025 mg/L	104	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.0126 mg/L	0.0125 mg/L	101	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.0129 mg/L	0.0125 mg/L	103	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0128 mg/L	0.0125 mg/L	102	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0255 mg/L	0.025 mg/L	102	70.0	130	----
		phosphorus, dissolved	7723-14-0	E421	0.582 mg/L	0.5 mg/L	116	70.0	130	----
		potassium, dissolved	7440-09-7	E421	2.45 mg/L	2.5 mg/L	98.0	70.0	130	----
		rubidium, dissolved	7440-17-7	E421	0.00534 mg/L	0.005 mg/L	107	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0619 mg/L	0.05 mg/L	124	70.0	130	----
		silicon, dissolved	7440-21-3	E421	ND mg/L	0.5 mg/L	ND	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00481 mg/L	0.005 mg/L	96.3	70.0	130	----
		sodium, dissolved	7440-23-5	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	2.60 mg/L	2.5 mg/L	104	70.0	130	----
		tellurium, dissolved	13494-80-9	E421	0.00569 mg/L	0.005 mg/L	114	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0514 mg/L	0.05 mg/L	103	70.0	130	----
		thorium, dissolved	7440-29-1	E421	0.00502 mg/L	0.005 mg/L	100	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0251 mg/L	0.025 mg/L	100	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0126 mg/L	0.0125 mg/L	101	70.0	130	----
		tungsten, dissolved	7440-33-7	E421	0.00504 mg/L	0.005 mg/L	101	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.000276 mg/L	0.00025 mg/L	110	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.0259 mg/L	0.025 mg/L	104	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.0273 mg/L	0.025 mg/L	109	70.0	130	----
		zirconium, dissolved	7440-67-7	E421	0.00481 mg/L	0.005 mg/L	96.2	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Speciated Metals (QCLot: 643266)										
WT2213093-001	MATR01	methylmercury (as MeHg), total	22967-92-6	E536	0.00454 µg/L	0.0025 µg/L	90.7	60.0	140	----

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

COC Number: 22 -

Page of

Environmental Division Waterloo

Work Order Reference

WT2213093

Telephone : +1 519 886 6910

Report To	Contact and company name below will appear on the final report	Reports / Recipients	Turnaround Time (TAT) Requested
Company:	WoodPLC	Select Report Format: ☑ PDF ☐ EXCEL ☐ EDD (DIGITAL)	☐ Routine [R] if received by 3pm M-F - no surcharges apply
Contact:	Dale Klodnicki	Merge QC/QCI Reports with COA ☑ YES ☐ NO ☐ N/A	☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minir
Phone:	905-568-2929	☐ Compare Results to Criteria on Report - provide details below if box checked	☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge min
	Company address below will appear on the final report	Select Distribution: ☑ EMAIL MAIL ☐ FAX	☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge min
Street:	160 Traders Blvd East Suite 110	Email 1 or Fax Dale.Klodnicki@woodplc.com	☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge min
City/Province:	Mississauga, ON	Email 2 SAMANTHA.SHERMAN@WOODPLC.COM	☐ Same day [E2] if received by 10am M-S - 200% rush surchar
Postal Code:	L4Z 3K7	Email 3	Additional fees may apply to rush requests on weekends.
Invoice To	Same as Report To ☐ YES ☐ NO	Invoice Recipients	Date and Time Required for all E&P TATs:
	Copy of Invoice with Report ☐ YES ☑ NO	Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	For all tests with rush TATs requested, please contact your AM to confirm availability.
Company:		Email 1 or Fax apinvoice.canada@woodplc.com	
Contact:		Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:	Q86725 WT2022WOOD1000015	AFE/Cost Center:	PO#
Job #:	OMEMA2002	Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (ALS use only):	WT2213093	ALS Contact: RICK HAWTHORNE	Sampler: SS/AS/DL/MG

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Acidity, Alkalinity	Cyanides, (Tot,Wad,Free)	Anions	Conductivity, PH	Hardness	Total Metals	Dissolved Metals	Low Level Mercury Total	Methyl Mercury	NH3, TP	TSS,TDS	Phyto Plankton (if needed)	Chlorophyll (if needed)	Radium 226 (if needed)	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
					Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																	
	MATR01	2-Sep-22	12:00	Water	9	R	R	R	R	R	R	R	R	R	R	R						
	MATR02	2-Sep-22	12:00	Water	9	R	R	R	R	R	R	R	R	R	R	R						
	WBRS01	1-Sep-22	12:00	Water	9	R	R	R	R	R	R	R	R	R	R	R						
	WBRS03	1-Sep-22	12:00	Water	9	R	R	R	R	R	R	R	R	R	R	R						
	WBRS04	1-Sep-22	12:00	Water	9	R	R	R	R	R	R	R	R	R	R	R						
	NDRTRIB01	31-Aug-22	12:00	Water	9	R	R	R	R	R	R	R	R	R	R	R						
	NDRP02B	31-Aug-22	12:00	Water	9	R	R	R	R	R	R	R	R	R	R	R						
	NDRP04	31-Aug-22	12:00	Water	9	R	R	R	R	R	R	R	R	R	R	R						
	NDRP03	30-Aug-22	12:00	Water	9	R	R	R	R	R	R	R	R	R	R	R						
	DUP01	30-Aug-22	-	Water	9	R	R	R	R	R	R	R	R	R	R	R						
	DUP02	31-Aug-22	-	Water	9	R	R	R	R	R	R	R	R	R	R	R						
				Water																		

Analysis Request

Drinking Water (DW) Samples[1] (client use)	Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	
Are samples for human consumption/ use? ☐ YES ☐ NO	

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☑ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				8.9			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)		
Released by: SS	Date: 2-Sep	Time: 16:00	Received by:	Date:	Time:	Received by:	Date: 9/6/22	Time: 700

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WT2213095**	Page	: 1 of 14
Client	: **WSP E&I Canada Limited**	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 2020 Winston Park Drive Suite 600 Mississauga ON Canada L6H 6X7	Address	: 60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2002	Date Samples Received	: 06-Sep-2022 12:00
PO	: ----	Date Analysis Commenced	: 06-Sep-2022
C-O-C number	: ----	Issue Date	: 03-Oct-2022 16:59
Sampler	: SS/AS/DL/MG		
Site	: ----		
Quote number	: OMEMA2002		
No. of samples received	: 11		
No. of samples analysed	: 11		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Christine Mason	Analyst - Chemistry	Inorganics, Winnipeg, Manitoba
Greg Pokocky	Supervisor - Inorganic	Inorganics, Waterloo, Ontario
Greg Pokocky	Supervisor - Inorganic	Metals, Waterloo, Ontario
Hamideh Moradi	Analyst	Metals, Burnaby, British Columbia
Jon Fisher	Department Manager - Inorganics	Inorganics, Waterloo, Ontario
Kinny Wu	Lab Analyst	Metals, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
mg/L	milligrams per litre
ng/L	nanograms per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

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

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	*Description*
DLDS	*Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.*
DLM	*Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).*
DLUI	*Detection Limit Raised: Unknown interference generated an apparent false positive test result.*
DTC	*Dissolved concentration exceeds total. Results were confirmed by re-analysis.*
RRV	*Reported result verified by repeat analysis.*
SP	*Sample was preserved at the laboratory.*

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	GERR LK	GERR LK	MAR LK	MAR LK	TRIP BLANK
					Client sampling date / time	31-Aug-2022 15:00	01-Sep-2022	31-Aug-2022 18:00	01-Sep-2022 12:45	31-Aug-2022
						WT2213095-001	WT2213095-002	WT2213095-003	WT2213095-004	WT2213095-005
						Result	Result	Result	Result	Result
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L		<2.0	----	<2.0	----	<2.0
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		139	----	29.2	----	1.7
conductivity	----	E100	1.0	µS/cm		264	----	113	----	1.9
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L		144	----	65.2	----	<0.50
pH	----	E108	0.10	pH units		8.19	----	7.62	----	6.63
solids, total dissolved [TDS]	----	E162	10	mg/L		140 DLDS	----	78 DLDS	----	<10
solids, total suspended [TSS]	----	E160	3.0	mg/L		<3.0	----	<3.0	----	<3.0
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		0.0204	----	0.0306	----	<0.0050
chloride	16887-00-6	E235.Cl	0.50	mg/L		<0.50	----	<0.50	----	<0.50
fluoride	16984-48-8	E235.F	0.020	mg/L		0.074	----	0.031	----	<0.020
nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L		<0.020	----	<0.020	----	<0.020
nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L		<0.010	----	<0.010	----	<0.010
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L		0.0131	----	0.0132	----	<0.0020
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		1.36	----	0.39	----	<0.30
Cyanides										
cyanide, free	----	E339	0.0020	mg/L		<0.0020	----	<0.0020	----	<0.0020
cyanide, strong acid dissociable (total)	----	E333	0.0020	mg/L		<0.0020	----	<0.0020	----	<0.0020
cyanide, weak acid dissociable	----	E336	0.0020	mg/L		<0.0020	----	<0.0020	----	<0.0020
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L		0.0161	----	0.0549	----	0.0171 RRV
antimony, total	7440-36-0	E420	0.00010	mg/L		<0.00010	----	<0.00010	----	<0.00010
arsenic, total	7440-38-2	E420	0.00010	mg/L		0.00058	----	0.00072	----	<0.00010
barium, total	7440-39-3	E420	0.00010	mg/L		0.0185	----	0.00688	----	0.00013 RRV
beryllium, total	7440-41-7	E420	0.000020	mg/L		<0.000020	----	<0.000020	----	<0.000020
bismuth, total	7440-69-9	E420	0.000050	mg/L		<0.000050	----	<0.000050	----	<0.000050
boron, total	7440-42-8	E420	0.010	mg/L		<0.010	----	<0.010	----	<0.010
cadmium, total	7440-43-9	E420	0.0000050	mg/L		<0.0000050	----	0.0000108	----	<0.0000050
calcium, total	7440-70-2	E420	0.050	mg/L		41.9	----	19.3	----	0.184 RRV
cesium, total	7440-46-2	E420	0.000010	mg/L		<0.000010	----	<0.000010	----	<0.000010

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	GERR LK	GERR LK	MAR LK	MAR LK	TRIP BLANK
					Client sampling date / time	31-Aug-2022 15:00	01-Sep-2022	31-Aug-2022 18:00	01-Sep-2022 12:45	31-Aug-2022
						WT2213095-001	WT2213095-002	WT2213095-003	WT2213095-004	WT2213095-005
						Result	Result	Result	Result	Result
Total Metals										
chromium, total	7440-47-3	E420	0.00050	mg/L		<0.00050	----	<0.00050	----	<0.00050
cobalt, total	7440-48-4	E420	0.00010	mg/L		<0.00010	----	<0.00010	----	<0.00010
copper, total	7440-50-8	E420	0.00050	mg/L		0.00051	----	0.00100	----	<0.00050
iron, total	7439-89-6	E420	0.010	mg/L		0.102	----	0.215	----	<0.010
lead, total	7439-92-1	E420	0.000050	mg/L		0.000248	----	0.000742	----	<0.000050
lithium, total	7439-93-2	E420	0.0010	mg/L		0.0016	----	<0.0010	----	<0.0010
magnesium, total	7439-95-4	E420	0.0050	mg/L		10.3	----	4.68	----	0.0054 RRV
manganese, total	7439-96-5	E420	0.00010	mg/L		0.0269	----	0.0351	----	<0.00010
mercury, total	7439-97-6	E508-L	0.50	ng/L		0.88	----	1.22	----	<0.50
molybdenum, total	7439-98-7	E420	0.000050	mg/L		0.000174	----	0.000066	----	<0.000050
nickel, total	7440-02-0	E420	0.00050	mg/L		<0.00050	----	<0.00050	----	<0.00050
phosphorus, total	7723-14-0	E420	0.050	mg/L		<0.050	----	<0.050	----	<0.050
potassium, total	7440-09-7	E420	0.050	mg/L		1.08	----	0.400	----	<0.050
rubidium, total	7440-17-7	E420	0.00020	mg/L		0.00163	----	0.00090	----	<0.00020
selenium, total	7782-49-2	E420	0.000050	mg/L		0.000067	----	0.000078	----	<0.000050
silicon, total	7440-21-3	E420	0.10	mg/L		2.22	----	1.16	----	1.04 RRV
silver, total	7440-22-4	E420	0.000010	mg/L		<0.000010	----	<0.000010	----	<0.000010
sodium, total	7440-23-5	E420	0.050	mg/L		3.71	----	1.37	----	0.257 RRV
strontium, total	7440-24-6	E420	0.00020	mg/L		0.0775	----	0.0320	----	0.00028 RRV
sulfur, total	7704-34-9	E420	0.50	mg/L		0.74	----	<0.50	----	<0.50
tellurium, total	13494-80-9	E420	0.00020	mg/L		<0.00020	----	<0.00020	----	<0.00020
thallium, total	7440-28-0	E420	0.000010	mg/L		<0.000010	----	<0.000010	----	<0.000010
thorium, total	7440-29-1	E420	0.00010	mg/L		<0.00010	----	<0.00010	----	<0.00010
tin, total	7440-31-5	E420	0.00010	mg/L		<0.00010	----	<0.00010	----	0.00014 RRV
titanium, total	7440-32-6	E420	0.00030	mg/L		0.00070	----	0.00165	----	<0.00030
tungsten, total	7440-33-7	E420	0.00010	mg/L		<0.00010	----	<0.00010	----	<0.00010
uranium, total	7440-61-1	E420	0.000010	mg/L		0.000038	----	0.000029	----	<0.000010
vanadium, total	7440-62-2	E420	0.00050	mg/L		<0.00050	----	<0.00050	----	<0.00050
zinc, total	7440-66-6	E420	0.0030	mg/L		<0.0030	----	0.0045	----	<0.0030
zirconium, total	7440-67-7	E420	0.00020	mg/L		<0.00020	----	0.00024	----	<0.00020
Dissolved Metals										

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	GERR LK	GERR LK	MAR LK	MAR LK	TRIP BLANK
					Client sampling date / time	31-Aug-2022 15:00	01-Sep-2022	31-Aug-2022 18:00	01-Sep-2022 12:45	31-Aug-2022
						WT2213095-001	WT2213095-002	WT2213095-003	WT2213095-004	WT2213095-005
						Result	Result	Result	Result	Result
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.0027	----	0.0251	----	0.0171 RRV
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		<0.00010	----	<0.00010	----	<0.00010
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00061	----	0.00076	----	<0.00010
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.0187	----	0.00669	----	0.00013 RRV
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L		<0.000020	----	<0.000020	----	<0.000020
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	----	<0.000050	----	<0.000050
boron, dissolved	7440-42-8	E421	0.010	mg/L		<0.010	----	<0.010	----	<0.010
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		<0.0000050	----	0.0000068	----	<0.0000050
calcium, dissolved	7440-70-2	E421	0.050	mg/L		40.7	----	18.6	----	0.185 RRV
cesium, dissolved	7440-46-2	E421	0.000010	mg/L		<0.000010	----	<0.000010	----	<0.000010
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		<0.00050	----	<0.00050	----	<0.00050
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		<0.00010	----	<0.00010	----	<0.00010
copper, dissolved	7440-50-8	E421	0.00020	mg/L		0.00027	----	0.00042	----	<0.00020
iron, dissolved	7439-89-6	E421	0.010	mg/L		0.037	----	0.157	----	<0.010
lead, dissolved	7439-92-1	E421	0.000050	mg/L		<0.000050	----	0.000075	----	<0.000050
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		0.0018	----	<0.0010	----	<0.0010
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L		10.3	----	4.56	----	<0.0050
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.00156	----	0.00749	----	<0.00010
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		0.000147	----	0.000057	----	<0.000050
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		<0.00050	----	<0.00050	----	<0.00050
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	----	<0.050	----	<0.050
potassium, dissolved	7440-09-7	E421	0.050	mg/L		1.08	----	0.384	----	<0.050
rubidium, dissolved	7440-17-7	E421	0.00020	mg/L		0.00166	----	0.00085	----	<0.00020
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.000077	----	<0.000500 DLM	----	<0.000050
silicon, dissolved	7440-21-3	E421	0.050	mg/L		2.25	----	1.13	----	1.07 RRV
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	----	<0.000010	----	<0.000010
sodium, dissolved	7440-23-5	E421	0.050	mg/L		3.67	----	1.25	----	0.255 RRV
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		0.0764	----	0.0318	----	0.00027 RRV
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		0.72	----	<0.50	----	<0.50
tellurium, dissolved	13494-80-9	E421	0.00020	mg/L		<0.00020	----	<0.00020	----	<0.00020
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	----	<0.000010	----	<0.000010

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	GERR LK	GERR LK	MAR LK	MAR LK	TRIP BLANK
					Client sampling date / time	31-Aug-2022 15:00	01-Sep-2022	31-Aug-2022 18:00	01-Sep-2022 12:45	31-Aug-2022
						WT2213095-001	WT2213095-002	WT2213095-003	WT2213095-004	WT2213095-005
						Result	Result	Result	Result	Result
Dissolved Metals										
thorium, dissolved	7440-29-1	E421	0.00010	mg/L		<0.00010	----	<0.00010	----	<0.00010
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	----	<0.00010	----	0.00014 RRV
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		<0.00030	----	0.00074	----	<0.00030
tungsten, dissolved	7440-33-7	E421	0.00010	mg/L		<0.00010	----	<0.00010	----	<0.00010
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		0.000034	----	0.000025	----	<0.000010
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		<0.00050	----	<0.00050	----	<0.00050
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		<0.0010	----	0.0019	----	<0.0010
zirconium, dissolved	7440-67-7	E421	0.00030	mg/L		<0.00030	----	<0.00030	----	<0.00030
dissolved metals filtration location	----	EP421	-	-		Field	----	Field	----	Field
Speciated Metals										
methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L		0.000077	----	0.000057	----	<0.000020
Plant Pigments										
chlorophyll a	479-61-8	E870	0.010	µg/L		----	2.40	----	2.19	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	JCS01	NDRS04	NDRS05	NDRP06	NDRP07
					Client sampling date / time	30-Aug-2022 14:30	30-Aug-2022	30-Aug-2022 14:25	30-Aug-2022 14:35	30-Aug-2022 13:00
						WT2213095-006	WT2213095-007	WT2213095-008	WT2213095-009	WT2213095-010
						Result	Result	Result	Result	Result
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L		11.3	3.2	3.0	4.7	4.4
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		3.4	60.0	87.7	19.8	8.7
conductivity	----	E100	1.0	µS/cm		67.5	118	152	46.2	40.1
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L		25.8	66.7	87.9	31.3	29.7
pH	----	E108	0.10	pH units		5.21	7.40	7.55	6.81	6.55
solids, total dissolved [TDS]	----	E162	10	mg/L		120 DLDS	112 DLDS	111 DLDS	87 DLDS	97
solids, total suspended [TSS]	----	E160	3.0	mg/L		<3.0	38.4	<3.0	15.8	<3.0
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		0.0220	0.0470	0.0171	0.0480	0.0231
chloride	16887-00-6	E235.Cl	0.50	mg/L		10.4	4.24	<0.50	<0.50	<0.50
fluoride	16984-48-8	E235.F	0.020	mg/L		<0.020	0.030	0.033	<0.020	<0.020
nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L		<0.020	<0.020	0.029	<0.020	<0.020
nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L		0.0024	0.0057	0.0069	0.115	0.0093
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		<0.30	<0.30	<0.30	<0.30	<0.30
Cyanides										
cyanide, free	----	E339	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020 SP	<0.0020
cyanide, strong acid dissociable (total)	----	E333	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020 SP	<0.0020
cyanide, weak acid dissociable	----	E336	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020 SP	<0.0020
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L		0.157	0.695	0.0409	0.118	0.124
antimony, total	7440-36-0	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
arsenic, total	7440-38-2	E420	0.00010	mg/L		0.00111	0.00150	0.00075	0.00097	0.00111
barium, total	7440-39-3	E420	0.00010	mg/L		0.00525	0.0119	0.0123	0.00904	0.00448
beryllium, total	7440-41-7	E420	0.000020	mg/L		<0.000020	0.000039	<0.000020	<0.000020	<0.000020
bismuth, total	7440-69-9	E420	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, total	7440-42-8	E420	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
cadmium, total	7440-43-9	E420	0.0000050	mg/L		0.0000595	0.0000224	0.0000063	0.0000177	0.0000183
calcium, total	7440-70-2	E420	0.050	mg/L		7.72	19.5	24.9	8.40	8.23
cesium, total	7440-46-2	E420	0.000010	mg/L		<0.000010	0.000072	<0.000010	<0.000010	<0.000010
chromium, total	7440-47-3	E420	0.00050	mg/L		0.00057	0.00203	<0.00050	<0.00050	0.00086

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	JCS01	NDRS04	NDRS05	NDRP06	NDRP07
					Client sampling date / time	30-Aug-2022 14:30	30-Aug-2022	30-Aug-2022 14:25	30-Aug-2022 14:35	30-Aug-2022 13:00
						WT2213095-006	WT2213095-007	WT2213095-008	WT2213095-009	WT2213095-010
						Result	Result	Result	Result	Result
Total Metals										
cobalt, total	7440-48-4	E420	0.00010	mg/L		0.00022	0.00064	0.00025	0.00036	0.00016
copper, total	7440-50-8	E420	0.00050	mg/L		0.00087	0.00148	0.00062	<0.00050	<0.00050
iron, total	7439-89-6	E420	0.010	mg/L		0.499	1.38	0.314	0.505	0.511
lead, total	7439-92-1	E420	0.000050	mg/L		0.00126	0.000556	0.000116	0.000281	0.000356
lithium, total	7439-93-2	E420	0.0010	mg/L		<0.0010	0.0016	0.0011	<0.0010	<0.0010
magnesium, total	7439-95-4	E420	0.0050	mg/L		1.70	5.14	6.66	2.72	2.65
manganese, total	7439-96-5	E420	0.00010	mg/L		0.0523	0.235	0.0784	0.114	0.0468
mercury, total	7439-97-6	E508-L	0.50	ng/L		3.00	2.16	<0.50	<0.50	0.93
molybdenum, total	7439-98-7	E420	0.000050	mg/L		<0.000050	0.000087	<0.000050	<0.000050	<0.000050
nickel, total	7440-02-0	E420	0.00050	mg/L		0.00059	0.00161	<0.00050	0.00051	0.00063
phosphorus, total	7723-14-0	E420	0.050	mg/L		<0.050	0.052	<0.050	0.055	<0.050
potassium, total	7440-09-7	E420	0.050	mg/L		<0.050	0.454	0.272	0.221	0.129
rubidium, total	7440-17-7	E420	0.00020	mg/L		<0.00020	0.00217	0.00072	0.00079	0.00039
selenium, total	7782-49-2	E420	0.000050	mg/L		0.000178	0.000139	0.000071	0.000132	0.000137
silicon, total	7440-21-3	E420	0.10	mg/L		1.61	3.39	1.37	2.10	1.61
silver, total	7440-22-4	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, total	7440-23-5	E420	0.050	mg/L		6.87	3.88	0.568	0.339	0.605
strontium, total	7440-24-6	E420	0.00020	mg/L		0.0147	0.0352	0.0513	0.0194	0.0155
sulfur, total	7704-34-9	E420	0.50	mg/L		<0.50	<0.50	<0.50	<0.50	0.65
tellurium, total	13494-80-9	E420	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
thallium, total	7440-28-0	E420	0.000010	mg/L		<0.000010	0.000012	<0.000010	<0.000010	<0.000010
thorium, total	7440-29-1	E420	0.00010	mg/L		<0.00010	0.00013	<0.00010	<0.00010	<0.00010
tin, total	7440-31-5	E420	0.00010	mg/L		<0.00010	<0.00010	0.00022	<0.00010	0.00021
titanium, total	7440-32-6	E420	0.00030	mg/L		0.00236	0.0289	<0.00300 DLUI	0.00274	0.00321
tungsten, total	7440-33-7	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
uranium, total	7440-61-1	E420	0.000010	mg/L		<0.000010	0.000061	0.000016	0.000021	0.000012
vanadium, total	7440-62-2	E420	0.00050	mg/L		<0.00050	0.00178	<0.00050	<0.00050	<0.00050
zinc, total	7440-66-6	E420	0.0030	mg/L		0.0142	0.0073	0.0136	0.0101	0.0090
zirconium, total	7440-67-7	E420	0.00020	mg/L		<0.00020	0.00073	<0.00020	0.00029	0.00021
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.150	0.103	0.0115	0.0959	0.0860

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	JCS01	NDRS04	NDRS05	NDRP06	NDRP07
					Client sampling date / time	30-Aug-2022 14:30	30-Aug-2022	30-Aug-2022 14:25	30-Aug-2022 14:35	30-Aug-2022 13:00
						WT2213095-006	WT2213095-007	WT2213095-008	WT2213095-009	WT2213095-010
						Result	Result	Result	Result	Result
Dissolved Metals										
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00120	0.00140	0.00069	0.00092	0.00116
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.00538	0.00684	0.0110	0.00697	0.00359
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, dissolved	7440-42-8	E421	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		0.0000534	0.0000083	<0.0000050	0.0000118	0.0000121
calcium, dissolved	7440-70-2	E421	0.050	mg/L		7.56	19.0	24.4	8.25	7.72
cesium, dissolved	7440-46-2	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		0.00052	0.00064	<0.00050	0.00056	0.00051
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		0.00021	0.00017	<0.00010	<0.00010	<0.00010
copper, dissolved	7440-50-8	E421	0.00020	mg/L		0.00083	0.00072	<0.00020	0.00035	0.00024
iron, dissolved	7439-89-6	E421	0.010	mg/L		0.470	0.555	0.115	0.322	0.366
lead, dissolved	7439-92-1	E421	0.000050	mg/L		0.00125	0.000164	0.000051	0.000097	0.000146
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		<0.0010	<0.0010	0.0013	<0.0010	<0.0010
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L		1.67	4.67	6.56	2.60	2.54
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.0517	0.128	0.0151	0.0168	0.0131
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		<0.000050	0.000072	<0.000050	<0.000050	<0.000050
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		0.00053	0.00068	<0.00050	<0.00050	<0.00050
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
potassium, dissolved	7440-09-7	E421	0.050	mg/L		<0.050	0.308	0.205	0.219	0.052
rubidium, dissolved	7440-17-7	E421	0.00020	mg/L		<0.00020	0.00107	0.00056	0.00067	0.00022
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.000226	0.000178	0.000066	0.000149	0.000174
silicon, dissolved	7440-21-3	E421	0.050	mg/L		1.61	2.41	1.32	2.04	1.53
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, dissolved	7440-23-5	E421	0.050	mg/L		6.66	3.77	0.582	0.352	0.501
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		0.0145	0.0350	0.0507	0.0186	0.0150
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		<0.50	<0.50	<0.50	0.67	<0.50
tellurium, dissolved	13494-80-9	E421	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
thorium, dissolved	7440-29-1	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	JCS01	NDRS04	NDRS05	NDRP06	NDRP07
					Client sampling date / time	30-Aug-2022 14:30	30-Aug-2022	30-Aug-2022 14:25	30-Aug-2022 14:35	30-Aug-2022 13:00
						WT2213095-006	WT2213095-007	WT2213095-008	WT2213095-009	WT2213095-010
						Result	Result	Result	Result	Result
Dissolved Metals										
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	<0.00010	0.00010	<0.00010	<0.00010
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		0.00205	0.00372	0.00030	0.00193	0.00138
tungsten, dissolved	7440-33-7	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		<0.000010	0.000041	0.000013	0.000018	<0.000010
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		<0.00050	0.00062	<0.00050	<0.00050	<0.00050
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		0.0163	0.0035	0.0148	0.0176 DTC	0.0085
zirconium, dissolved	7440-67-7	E421	0.00030	mg/L		<0.00030	0.00043	<0.00030	<0.00030	<0.00030
dissolved metals filtration location	----	EP421	-	-		Field	Field	Field	Field	Field
Speciated Metals										
methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L		0.000097	0.000062	0.000035	0.000045	0.000060

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID: NDRS02	----	----	----	----
					Client sampling date / time: 30-Aug-2022 13:00	----	----	----	----
					WT2213095-011	--------	--------	--------	--------
					Result	----	----	----	----
Physical Tests									
acidity (as CaCO3)	----	E283	2.0	mg/L	6.3	----	----	----	----
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	52.2	----	----	----	----
conductivity	----	E100	1.0	µS/cm	116	----	----	----	----
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	61.6	----	----	----	----
pH	----	E108	0.10	pH units	7.60	----	----	----	----
solids, total dissolved [TDS]	----	E162	10	mg/L	108 DLDS	----	----	----	----
solids, total suspended [TSS]	----	E160	3.0	mg/L	10.8	----	----	----	----
Anions and Nutrients									
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0289	----	----	----	----
chloride	16887-00-6	E235.Cl	0.50	mg/L	3.37	----	----	----	----
fluoride	16984-48-8	E235.F	0.020	mg/L	0.024	----	----	----	----
nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	<0.020	----	----	----	----
nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	----	----	----	----
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0146	----	----	----	----
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	<0.30	----	----	----	----
Cyanides									
cyanide, free	----	E339	0.0020	mg/L	<0.0020	----	----	----	----
cyanide, strong acid dissociable (total)	----	E333	0.0020	mg/L	<0.0020	----	----	----	----
cyanide, weak acid dissociable	----	E336	0.0020	mg/L	<0.0020	----	----	----	----
Total Metals									
aluminum, total	7429-90-5	E420	0.0030	mg/L	0.440	----	----	----	----
antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	----	----	----	----
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00109	----	----	----	----
barium, total	7440-39-3	E420	0.00010	mg/L	0.00851	----	----	----	----
beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	----	----	----	----
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	----	----	----	----
boron, total	7440-42-8	E420	0.010	mg/L	<0.010	----	----	----	----
cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000189	----	----	----	----
calcium, total	7440-70-2	E420	0.050	mg/L	18.0	----	----	----	----
cesium, total	7440-46-2	E420	0.000010	mg/L	0.000045	----	----	----	----
chromium, total	7440-47-3	E420	0.00050	mg/L	0.00124	----	----	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDRS02	----	----	----	----
					Client sampling date / time	30-Aug-2022 13:00	----	----	----	----
						WT2213095-011	--------	--------	--------	--------
						Result	----	----	----	----
Total Metals										
cobalt, total	7440-48-4	E420	0.00010	mg/L		0.00045	----	----	----	----
copper, total	7440-50-8	E420	0.00050	mg/L		0.00077	----	----	----	----
iron, total	7439-89-6	E420	0.010	mg/L		0.907	----	----	----	----
lead, total	7439-92-1	E420	0.000050	mg/L		0.000402	----	----	----	----
lithium, total	7439-93-2	E420	0.0010	mg/L		0.0012	----	----	----	----
magnesium, total	7439-95-4	E420	0.0050	mg/L		4.57	----	----	----	----
manganese, total	7439-96-5	E420	0.00010	mg/L		0.139	----	----	----	----
mercury, total	7439-97-6	E508-L	0.50	ng/L		1.59	----	----	----	----
molybdenum, total	7439-98-7	E420	0.000050	mg/L		0.000076	----	----	----	----
nickel, total	7440-02-0	E420	0.00050	mg/L		0.00103	----	----	----	----
phosphorus, total	7723-14-0	E420	0.050	mg/L		<0.050	----	----	----	----
potassium, total	7440-09-7	E420	0.050	mg/L		0.402	----	----	----	----
rubidium, total	7440-17-7	E420	0.00020	mg/L		0.00167	----	----	----	----
selenium, total	7782-49-2	E420	0.000050	mg/L		0.000134	----	----	----	----
silicon, total	7440-21-3	E420	0.10	mg/L		2.60	----	----	----	----
silver, total	7440-22-4	E420	0.000010	mg/L		<0.000010	----	----	----	----
sodium, total	7440-23-5	E420	0.050	mg/L		3.11	----	----	----	----
strontium, total	7440-24-6	E420	0.00020	mg/L		0.0325	----	----	----	----
sulfur, total	7704-34-9	E420	0.50	mg/L		<0.50	----	----	----	----
tellurium, total	13494-80-9	E420	0.00020	mg/L		<0.00020	----	----	----	----
thallium, total	7440-28-0	E420	0.000010	mg/L		<0.000010	----	----	----	----
thorium, total	7440-29-1	E420	0.00010	mg/L		<0.00010	----	----	----	----
tin, total	7440-31-5	E420	0.00010	mg/L		<0.00010	----	----	----	----
titanium, total	7440-32-6	E420	0.00030	mg/L		0.0174	----	----	----	----
tungsten, total	7440-33-7	E420	0.00010	mg/L		<0.00010	----	----	----	----
uranium, total	7440-61-1	E420	0.000010	mg/L		0.000043	----	----	----	----
vanadium, total	7440-62-2	E420	0.00050	mg/L		0.00115	----	----	----	----
zinc, total	7440-66-6	E420	0.0030	mg/L		0.0072	----	----	----	----
zirconium, total	7440-67-7	E420	0.00020	mg/L		0.00045	----	----	----	----
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.0752	----	----	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID: NDRS02	----	----	----	----
					Client sampling date / time: 30-Aug-2022 13:00	----	----	----	----
					WT2213095-011	--------	--------	--------	--------
					Result	----	----	----	----
Dissolved Metals									
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	----	----	----	----
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00110	----	----	----	----
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.00626	----	----	----	----
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	----	----	----	----
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	----	----	----	----
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	----	----	----	----
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000088	----	----	----	----
calcium, dissolved	7440-70-2	E421	0.050	mg/L	17.5	----	----	----	----
cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	----	----	----	----
chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	----	----	----	----
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.00017	----	----	----	----
copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00048	----	----	----	----
iron, dissolved	7439-89-6	E421	0.010	mg/L	0.417	----	----	----	----
lead, dissolved	7439-92-1	E421	0.000050	mg/L	0.000123	----	----	----	----
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	<0.0010	----	----	----	----
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	4.35	----	----	----	----
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0992	----	----	----	----
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000060	----	----	----	----
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00056	----	----	----	----
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	----	----	----	----
potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.340	----	----	----	----
rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00114	----	----	----	----
selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000150	----	----	----	----
silicon, dissolved	7440-21-3	E421	0.050	mg/L	1.88	----	----	----	----
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	----	----	----	----
sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.07	----	----	----	----
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.0318	----	----	----	----
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	<0.50	----	----	----	----
tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	----	----	----	----
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	----	----	----	----
thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	----	----	----	----

Analytical Results

Sub-Matrix: **Water** (Matrix: **Water**)					Client sample ID	**NDRS02**	**----**	**----**	**----**	**----**
					Client sampling date / time	30-Aug-2022 13:00	----	----	----	----
Analyte	*CAS Number*	*Method*	*LOR*	*Unit*	**WT2213095-011**	--------	--------	--------	--------	
					Result	----	----	----	----	
Dissolved Metals										
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	----	----	----	----	
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	0.00248	----	----	----	----	
tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	----	----	----	----	
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000031	----	----	----	----	
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	----	----	----	----	
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0043	----	----	----	----	
zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	0.00031	----	----	----	----	
dissolved metals filtration location	----	EP421	-	-	Field	----	----	----	----	
Speciated Metals										
methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L	0.000128	----	----	----	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2213095**	Page	: 1 of 29
Client	: **WSP E&I Canada Limited**	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 2020 Winston Park Drive Suite 600 Mississauga ON Canada L6H 6X7	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2002	Date Samples Received	: 06-Sep-2022 12:00
PO	: ----	Issue Date	: 03-Oct-2022 17:03
C-O-C number	: ----		
Sampler	: SS/AS/DL/MG		
Site	: ----		
Quote number	: OMEMA2002		
No. of samples received	: 11		
No. of samples analysed	: 11		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] GERR LK	E298	31-Aug-2022	10-Sep-2022	----	----		12-Sep-2022	28 days	12 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] MAR LK	E298	31-Aug-2022	10-Sep-2022	----	----		12-Sep-2022	28 days	12 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] TRIP BLANK	E298	31-Aug-2022	10-Sep-2022	----	----		12-Sep-2022	28 days	12 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] JCS01	E298	30-Aug-2022	10-Sep-2022	----	----		12-Sep-2022	28 days	13 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] NDRP06	E298	30-Aug-2022	10-Sep-2022	----	----		12-Sep-2022	28 days	13 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] NDRP07	E298	30-Aug-2022	10-Sep-2022	----	----		12-Sep-2022	28 days	13 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] NDRS02	E298	30-Aug-2022	10-Sep-2022	----	----		12-Sep-2022	28 days	13 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP]										
NDRS04	E298	30-Aug-2022	10-Sep-2022	----	----		12-Sep-2022	28 days	13 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP]										
NDRS05	E298	30-Aug-2022	10-Sep-2022	----	----		12-Sep-2022	28 days	13 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
GERR LK	E235.Cl	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MAR LK	E235.Cl	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
TRIP BLANK	E235.Cl	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
JCS01	E235.Cl	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
NDRP06	E235.Cl	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
NDRP07	E235.Cl	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
NDRS04	E235.Cl	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDRS05	E235.Cl	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDRS02	E235.Cl	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	28 days	9 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] GERR LK	E235.F	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MAR LK	E235.F	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] TRIP BLANK	E235.F	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] JCS01	E235.F	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDRP06	E235.F	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDRP07	E235.F	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDRS04	E235.F	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDRS05	E235.F	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDRS02	E235.F	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	28 days	9 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] GERR LK	E235.NO3	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MAR LK	E235.NO3	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] TRIP BLANK	E235.NO3	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] JCS01	E235.NO3	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	8 days	× EHTL
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDRP06	E235.NO3	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	8 days	× EHTL
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDRP07	E235.NO3	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	8 days	× EHTL
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDRS04	E235.NO3	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	8 days	× EHTL

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDRS05	E235.NO3	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	8 days	× EHTL
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDRS02	E235.NO3	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	7 days	9 days	× EHTL
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] GERR LK	E235.NO2	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	7 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MAR LK	E235.NO2	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	7 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] TRIP BLANK	E235.NO2	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	7 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] JCS01	E235.NO2	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	8 days	× EHTL
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDRP06	E235.NO2	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	8 days	× EHTL
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDRP07	E235.NO2	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	8 days	× EHTL
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDRS04	E235.NO2	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	8 days	× EHTL

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDRS05	E235.NO2	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	7 days	8 days	× EHTL
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDRS02	E235.NO2	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	7 days	9 days	× EHTL
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] GERR LK	E235.SO4	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MAR LK	E235.SO4	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] TRIP BLANK	E235.SO4	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] JCS01	E235.SO4	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDRP06	E235.SO4	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDRP07	E235.SO4	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDRS04	E235.SO4	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
NDRS05	E235.SO4	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
NDRS02	E235.SO4	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	28 days	9 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
GERR LK	E372-U	31-Aug-2022	12-Sep-2022	----	----		13-Sep-2022	28 days	13 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
MAR LK	E372-U	31-Aug-2022	12-Sep-2022	----	----		13-Sep-2022	28 days	13 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
JCS01	E372-U	30-Aug-2022	12-Sep-2022	----	----		13-Sep-2022	28 days	14 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
NDRP06	E372-U	30-Aug-2022	12-Sep-2022	----	----		13-Sep-2022	28 days	14 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
NDRP07	E372-U	30-Aug-2022	12-Sep-2022	----	----		13-Sep-2022	28 days	14 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
NDRS02	E372-U	30-Aug-2022	12-Sep-2022	----	----		13-Sep-2022	28 days	14 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
NDRS05	E372-U	30-Aug-2022	12-Sep-2022	----	----		13-Sep-2022	28 days	14 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
TRIP BLANK	E372-U	31-Aug-2022	12-Sep-2022	----	----		13-Sep-2022	28 days	14 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
NDRS04	E372-U	30-Aug-2022	12-Sep-2022	----	----		13-Sep-2022	28 days	15 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDRS04	E339	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
GERR LK	E339	31-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	8 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
MAR LK	E339	31-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	8 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
JCS01	E339	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDRS02	E339	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDRS05	E339	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
TRIP BLANK	E339	31-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	9 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (lab preserved) NDRP06	E339	30-Aug-2022	14-Sep-2022	----	----		14-Sep-2022	24 hrs	25.24 hrs	× EHTR-FM
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (lab preserved) NDRP07	E339	30-Aug-2022	14-Sep-2022	----	----		14-Sep-2022	24 hrs	25.24 hrs	× EHTR-FM
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDRS04	E333	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GERR LK	E333	31-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	8 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) MAR LK	E333	31-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	8 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) JCS01	E333	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDRS02	E333	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDRS05	E333	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) TRIP BLANK	E333	31-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	9 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (lab preserved) NDRP06	E333	30-Aug-2022	14-Sep-2022	----	----		14-Sep-2022	24 hrs	30.24 hrs	× EHTR-FM
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (lab preserved) NDRP07	E333	30-Aug-2022	14-Sep-2022	----	----		14-Sep-2022	24 hrs	31.24 hrs	× EHTR-FM
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDRS04	E336	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) GERR LK	E336	31-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	8 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) MAR LK	E336	31-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	8 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) JCS01	E336	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDRS02	E336	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDRS05	E336	30-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) TRIP BLANK	E336	31-Aug-2022	08-Sep-2022	----	----		08-Sep-2022	14 days	9 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (lab preserved) NDRP06	E336	30-Aug-2022	14-Sep-2022	----	----		14-Sep-2022	24 hrs	30.24 hrs	× EHTR-FM
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (lab preserved) NDRP07	E336	30-Aug-2022	14-Sep-2022	----	----		14-Sep-2022	24 hrs	31.24 hrs	× EHTR-FM
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) GERR LK	E421	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MAR LK	E421	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) TRIP BLANK	E421	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) JCS01	E421	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	180 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDRP06	E421	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	180 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDRP07	E421	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	180 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDRS02	E421	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	180 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDRS04	E421	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	180 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDRS05	E421	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	180 days	8 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDRS02	E283	30-Aug-2022	10-Sep-2022	----	----		10-Sep-2022	14 days	11 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] GERR LK	E283	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	7 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] MAR LK	E283	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	7 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] TRIP BLANK	E283	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	7 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] JCS01	E283	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDRP06	E283	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDRP07	E283	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDRS04	E283	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDRS05	E283	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDRS02	E290	30-Aug-2022	08-Sep-2022	----	----		09-Sep-2022	14 days	10 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] GERR LK	E290	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MAR LK	E290	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] TRIP BLANK	E290	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] JCS01	E290	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDRP06	E290	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDRP07	E290	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDRS04	E290	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDRS05	E290	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDRS02	E100	30-Aug-2022	08-Sep-2022	----	----		09-Sep-2022	28 days	10 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] GERR LK	E100	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] MAR LK	E100	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] TRIP BLANK	E100	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] JCS01	E100	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDRP06	E100	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDRP07	E100	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDRS04	E100	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDRS05	E100	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	28 days	8 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDRS02	E108	30-Aug-2022	08-Sep-2022	----	----		09-Sep-2022	14 days	10 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] GERR LK	E108	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	7 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MAR LK	E108	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	7 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] TRIP BLANK	E108	31-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	7 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] JCS01	E108	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDRP06	E108	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDRP07	E108	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE [ON MECP] NDRS04	E108	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDRS05	E108	30-Aug-2022	07-Sep-2022	----	----		07-Sep-2022	14 days	8 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] GERR LK	E162	31-Aug-2022	----	----	----		06-Sep-2022	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MAR LK	E162	31-Aug-2022	----	----	----		06-Sep-2022	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] JCS01	E162	30-Aug-2022	----	----	----		06-Sep-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDRP06	E162	30-Aug-2022	----	----	----		06-Sep-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDRP07	E162	30-Aug-2022	----	----	----		06-Sep-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDRS02	E162	30-Aug-2022	----	----	----		06-Sep-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDRS05	E162	30-Aug-2022	----	----	----		06-Sep-2022	7 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] TRIP BLANK	E162	31-Aug-2022	----	----	----		06-Sep-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDRS04	E162	30-Aug-2022	----	----	----		06-Sep-2022	7 days	8 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] GERR LK	E160	31-Aug-2022	----	----	----		06-Sep-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] MAR LK	E160	31-Aug-2022	----	----	----		06-Sep-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] JCS01	E160	30-Aug-2022	----	----	----		06-Sep-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDRP06	E160	30-Aug-2022	----	----	----		06-Sep-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDRP07	E160	30-Aug-2022	----	----	----		06-Sep-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDRS02	E160	30-Aug-2022	----	----	----		06-Sep-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDRS05	E160	30-Aug-2022	----	----	----		06-Sep-2022	7 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
TRIP BLANK	E160	31-Aug-2022	----	----	----		06-Sep-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
NDRS04	E160	30-Aug-2022	----	----	----		06-Sep-2022	7 days	8 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry										
Opaque HDPE										
MAR LK	E870	01-Sep-2022	09-Sep-2022	2 days	8 days	× EHTR	09-Sep-2022	672 hrs	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry										
Opaque HDPE										
GERR LK	E870	01-Sep-2022	09-Sep-2022	2 days	9 days	× EHTR	09-Sep-2022	672 hrs	0 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
GERR LK	E536	31-Aug-2022	16-Sep-2022	----	----		16-Sep-2022	180 days	16 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
MAR LK	E536	31-Aug-2022	16-Sep-2022	----	----		16-Sep-2022	180 days	16 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
JCS01	E536	30-Aug-2022	16-Sep-2022	----	----		16-Sep-2022	180 days	17 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
NDRP06	E536	30-Aug-2022	16-Sep-2022	----	----		16-Sep-2022	180 days	17 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
NDRP07	E536	30-Aug-2022	16-Sep-2022	----	----		16-Sep-2022	180 days	17 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid) NDRS02	E536	30-Aug-2022	16-Sep-2022	----	----		16-Sep-2022	180 days	17 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid) NDRS05	E536	30-Aug-2022	16-Sep-2022	----	----		16-Sep-2022	180 days	17 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid) TRIP BLANK	E536	31-Aug-2022	16-Sep-2022	----	----		16-Sep-2022	180 days	17 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid) NDRS04	E536	30-Aug-2022	16-Sep-2022	----	----		16-Sep-2022	180 days	18 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Glass vial total (hydrochloric acid) GERR LK	E508-L	31-Aug-2022	13-Sep-2022	28 days	13 days	✓	13-Sep-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Glass vial total (hydrochloric acid) MAR LK	E508-L	31-Aug-2022	13-Sep-2022	28 days	13 days	✓	13-Sep-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Glass vial total (hydrochloric acid) TRIP BLANK	E508-L	31-Aug-2022	13-Sep-2022	28 days	13 days	✓	13-Sep-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Glass vial total (hydrochloric acid) JCS01	E508-L	30-Aug-2022	13-Sep-2022	28 days	14 days	✓	13-Sep-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Glass vial total (hydrochloric acid) NDRP06	E508-L	30-Aug-2022	13-Sep-2022	28 days	14 days	✓	13-Sep-2022	28 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Glass vial total (hydrochloric acid) NDRP07	E508-L	30-Aug-2022	13-Sep-2022	28 days	14 days	✓	13-Sep-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Glass vial total (hydrochloric acid) NDRS02	E508-L	30-Aug-2022	13-Sep-2022	28 days	14 days	✓	13-Sep-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Glass vial total (hydrochloric acid) NDRS04	E508-L	30-Aug-2022	13-Sep-2022	28 days	14 days	✓	13-Sep-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Glass vial total (hydrochloric acid) NDRS05	E508-L	30-Aug-2022	13-Sep-2022	28 days	14 days	✓	13-Sep-2022	28 days	0 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) GERR LK	E420	31-Aug-2022	06-Sep-2022	----	----		07-Sep-2022	180 days	7 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) MAR LK	E420	31-Aug-2022	06-Sep-2022	----	----		07-Sep-2022	180 days	7 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) JCS01	E420	30-Aug-2022	06-Sep-2022	----	----		07-Sep-2022	180 days	8 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDRP06	E420	30-Aug-2022	06-Sep-2022	----	----		07-Sep-2022	180 days	8 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDRP07	E420	30-Aug-2022	06-Sep-2022	----	----		07-Sep-2022	180 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDRS02	E420	30-Aug-2022	06-Sep-2022	----	----		07-Sep-2022	180 days	8 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDRS05	E420	30-Aug-2022	06-Sep-2022	----	----		07-Sep-2022	180 days	8 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) TRIP BLANK	E420	31-Aug-2022	06-Sep-2022	----	----		07-Sep-2022	180 days	8 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDRS04	E420	30-Aug-2022	06-Sep-2022	----	----		07-Sep-2022	180 days	9 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	634998	2	26	7.6	5.0	✓
Alkalinity Species by Titration	E290	634996	2	36	5.5	5.0	✓
Ammonia by Fluorescence	E298	640847	2	39	5.1	5.0	✓
Chloride in Water by IC	E235.Cl	635002	2	33	6.0	5.0	✓
Conductivity in Water	E100	634995	2	30	6.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	635197	1	9	11.1	5.0	✓
Fluoride in Water by IC	E235.F	634999	2	21	9.5	5.0	✓
Free Cyanide	E339	638157	3	25	12.0	5.0	✓
Nitrate in Water by IC	E235.NO3	635000	2	40	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2	635001	2	28	7.1	5.0	✓
pH by Meter	E108	634997	2	38	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	635003	2	29	6.9	5.0	✓
TDS by Gravimetry	E162	634361	1	19	5.2	5.0	✓
Total Cyanide	E333	638155	3	56	5.3	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	644254	1	20	5.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	634749	1	13	7.6	5.0	✓
Total Methylmercury in Water by GCAFS	E536	643460	2	35	5.7	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	640846	2	40	5.0	5.0	✓
TSS by Gravimetry	E160	634364	1	19	5.2	4.7	✓
WAD Cyanide	E336	638156	3	38	7.8	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	634998	2	26	7.6	5.0	✓
Alkalinity Species by Titration	E290	634996	2	36	5.5	5.0	✓
Ammonia by Fluorescence	E298	640847	2	39	5.1	5.0	✓
Chloride in Water by IC	E235.Cl	635002	2	33	6.0	5.0	✓
Chlorophyll-a by Fluorometry	E870	639543	1	2	50.0	5.0	✓
Conductivity in Water	E100	634995	2	30	6.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	635197	1	9	11.1	5.0	✓
Fluoride in Water by IC	E235.F	634999	2	21	9.5	5.0	✓
Free Cyanide	E339	638157	3	25	12.0	5.0	✓
Nitrate in Water by IC	E235.NO3	635000	2	40	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2	635001	2	28	7.1	5.0	✓
pH by Meter	E108	634997	2	38	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	635003	2	29	6.9	5.0	✓
TDS by Gravimetry	E162	634361	1	19	5.2	5.0	✓
Total Cyanide	E333	638155	3	56	5.3	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	644254	1	20	5.0	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Total metals in Water by CRC ICPMS	E420	634749	1	13	7.6	5.0	✓
Total Methylmercury in Water by GCAFS	E536	643460	2	35	5.7	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	640846	2	40	5.0	5.0	✓
TSS by Gravimetry	E160	634364	1	19	5.2	4.7	✓
WAD Cyanide	E336	638156	3	38	7.8	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	634998	2	26	7.6	5.0	✓
Alkalinity Species by Titration	E290	634996	2	36	5.5	5.0	✓
Ammonia by Fluorescence	E298	640847	2	39	5.1	5.0	✓
Chloride in Water by IC	E235.Cl	635002	2	33	6.0	5.0	✓
Chlorophyll-a by Fluorometry	E870	639543	1	2	50.0	5.0	✓
Conductivity in Water	E100	634995	2	30	6.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	635197	1	9	11.1	5.0	✓
Fluoride in Water by IC	E235.F	634999	2	21	9.5	5.0	✓
Free Cyanide	E339	638157	3	25	12.0	5.0	✓
Nitrate in Water by IC	E235.NO3	635000	2	40	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2	635001	2	28	7.1	5.0	✓
Sulfate in Water by IC	E235.SO4	635003	2	29	6.9	5.0	✓
TDS by Gravimetry	E162	634361	1	19	5.2	5.0	✓
Total Cyanide	E333	638155	3	56	5.3	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	644254	1	20	5.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	634749	1	13	7.6	5.0	✓
Total Methylmercury in Water by GCAFS	E536	643460	2	35	5.7	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	640846	2	40	5.0	5.0	✓
TSS by Gravimetry	E160	634364	1	19	5.2	4.7	✓
WAD Cyanide	E336	638156	3	38	7.8	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	640847	2	39	5.1	5.0	✓
Chloride in Water by IC	E235.Cl	635002	2	33	6.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	635197	1	9	11.1	5.0	✓
Fluoride in Water by IC	E235.F	634999	2	21	9.5	5.0	✓
Free Cyanide	E339	638157	3	25	12.0	5.0	✓
Nitrate in Water by IC	E235.NO3	635000	2	40	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2	635001	2	28	7.1	5.0	✓
Sulfate in Water by IC	E235.SO4	635003	2	29	6.9	5.0	✓
Total Cyanide	E333	638155	3	56	5.3	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	644254	1	20	5.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	634749	1	13	7.6	5.0	✓
Total Methylmercury in Water by GCAFS	E536	643460	2	35	5.7	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	640846	2	40	5.0	5.0	✓

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
WAD Cyanide	E336	638156	3	38	7.8	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Waterloo - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Waterloo - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry	E160 Waterloo - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Waterloo - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Chloride in Water by IC	E235.Cl Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC	E235.NO2 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC	E235.NO3 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Waterloo - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Waterloo - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Waterloo - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Cyanide	E333 Waterloo - Environmental	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336 Waterloo - Environmental	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339 Waterloo - Environmental	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Waterloo - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total metals in Water by CRC ICPMS	E420 Waterloo - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 Waterloo - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Total Methylmercury in Water by GCAFS	E536 Vancouver - Environmental	Water	EPA 1630 (mod)	This method follows Method 1630 of the US EPA. Samples are distilled under an inert gas flow to isolate methylmercury and minimize matrix interferences. The distillate is analyzed by aqueous phase ethylation, purge and trap, desorption and GC separation. The separated species are then pyrolized to elemental Hg and quantified by cold vapour atomic flourescence spectroscopy. Results are reported "as MeHg".

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Chlorophyll-a by Fluorometry	E870 Winnipeg - Environmental	Water	EPA 445.0 (mod)	Chlorophyll a is determined by solvent extraction followed with analysis by fluorometry using the non-acidification procedure. This method is not subject to interferences from chlorophyll b.
Dissolved Hardness (Calculated)	EC100 Waterloo - Environmental	Water	APHA 2340B	“Hardness (as CaCO3), dissolved” is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. “Total Hardness” refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Waterloo - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for Total Phosphorus in water	EP372 Waterloo - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Waterloo - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Total Methylmercury Water Preparation	EP536 Vancouver - Environmental	Water	EPA 1630	This method follows Method 1630 of the US EPA. Samples are distilled under an inert gas flow to isolate methylmercury and minimize matrix interferences. The distillate is analyzed by aqueous phase ethylation, purge and trap, desorption and GC separation. The separated species are then pyrolized to elemental Hg and quantified by cold vapour atomic flourescence spectroscopy. Results are reported "as MeHg".
Chlorophyll-a Extraction	EP870 Winnipeg - Environmental	Water	EPA 445.0 (mod)	Chlorophyll-a solvent extraction.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **WT2213095**	Page	: 1 of 22
Client	: WSP E&I Canada Limited	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 2020 Winston Park Drive Suite 600 Mississauga ON Canada L6H 6X7	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2002	Date Samples Received	: 06-Sep-2022 12:00
PO	: ----	Date Analysis Commenced	: 06-Sep-2022
C-O-C number	: ----	Issue Date	: 03-Oct-2022 17:01
Sampler	: SS/AS/DL/MG		
Site	: ----		
Quote number	: OMEMA2002		
No. of samples received	: 11		
No. of samples analysed	: 11		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Christine Mason	Analyst - Chemistry	Winnipeg Inorganics, Winnipeg, Manitoba
Greg Pokocky	Supervisor - Inorganic	Waterloo Inorganics, Waterloo, Ontario
Greg Pokocky	Supervisor - Inorganic	Waterloo Metals, Waterloo, Ontario
Hamideh Moradi	Analyst	Vancouver Metals, Burnaby, British Columbia
Jon Fisher	Department Manager - Inorganics	Waterloo Inorganics, Waterloo, Ontario
Kinny Wu	Lab Analyst	Vancouver Metals, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 634361)											
WT2213095-001	GERR LK	solids, total dissolved [TDS]	----	E162	20	mg/L	140	114	26	Diff <2x LOR	----
Physical Tests (QC Lot: 634364)											
WT2213095-001	GERR LK	solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 634995)											
WT2213093-001	Anonymous	conductivity	----	E100	1.0	µS/cm	148	146	0.748%	10%	----
Physical Tests (QC Lot: 634996)											
WT2213093-001	Anonymous	alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	60.7	62.5	2.99%	20%	----
Physical Tests (QC Lot: 634997)											
WT2213093-001	Anonymous	pH	----	E108	0.10	pH units	7.63	7.66	0.392%	4%	----
Physical Tests (QC Lot: 634998)											
WT2213093-001	Anonymous	acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 635831)											
WT2213095-011	NDRS02	acidity (as CaCO3)	----	E283	2.0	mg/L	6.3	6.6	0.4	Diff <2x LOR	----
Physical Tests (QC Lot: 637652)											
WT2212938-001	Anonymous	pH	----	E108	0.10	pH units	8.08	8.10	0.247%	4%	----
Physical Tests (QC Lot: 637653)											
WT2212938-001	Anonymous	conductivity	----	E100	2.0	µS/cm	239	240	0.418%	10%	----
Physical Tests (QC Lot: 637654)											
WT2212938-001	Anonymous	alkalinity, total (as CaCO3)	----	E290	2.0	mg/L	85.0	79.5	6.73%	20%	----
Anions and Nutrients (QC Lot: 634999)											
WT2213093-001	Anonymous	fluoride	16984-48-8	E235.F	0.020	mg/L	0.035	0.035	0.0003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 635000)											
WT2213093-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	0.081	0.080	0.0008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 635001)											
WT2213093-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 635002)											
WT2213093-001	Anonymous	chloride	16887-00-6	E235.Cl	0.50	mg/L	4.54	4.50	0.03	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 635003)											
WT2213093-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	5.52	5.49	0.510%	20%	----
Anions and Nutrients (QC Lot: 635832)											
WT2213095-011	NDRS02	nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Anions and Nutrients (QC Lot: 635833)											
WT2213095-011	NDRS02	nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 635834)											
WT2213095-011	NDRS02	chloride	16887-00-6	E235.Cl	0.50	mg/L	3.37	3.38	0.009	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 635835)											
WT2213095-011	NDRS02	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	<0.30	<0.30	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 635836)											
WT2213095-011	NDRS02	fluoride	16984-48-8	E235.F	0.020	mg/L	0.024	0.025	0.001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 640846)											
WT2213093-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0128	0.0126	0.0003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 640847)											
WT2213093-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0324	0.0327	0.0003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 641220)											
WT2213095-011	NDRS02	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0146	0.0150	0.0004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 641221)											
WT2213095-011	NDRS02	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0289	0.0299	0.0010	Diff <2x LOR	----
Cyanides (QC Lot: 638155)											
WT2213093-001	Anonymous	cyanide, strong acid dissociable (total)	----	E333	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Cyanides (QC Lot: 638156)											
WT2213093-001	Anonymous	cyanide, weak acid dissociable	----	E336	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Cyanides (QC Lot: 638157)											
WT2213093-001	Anonymous	cyanide, free	----	E339	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Cyanides (QC Lot: 638158)											
WT2213095-006	JCS01	cyanide, strong acid dissociable (total)	----	E333	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Cyanides (QC Lot: 638159)											
WT2213095-006	JCS01	cyanide, weak acid dissociable	----	E336	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Cyanides (QC Lot: 638160)											
WT2213095-006	JCS01	cyanide, free	----	E339	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Cyanides (QC Lot: 645870)											
CG2212318-001	Anonymous	cyanide, free	----	E339	0.0100	mg/L	<0.0100	<0.0100	0	Diff <2x LOR	----
Cyanides (QC Lot: 645873)											
TY2201449-011	Anonymous	cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 645874)											
WT2213095-009	NDRP06	cyanide, weak acid dissociable	----	E336	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 634749)											
WT2213112-024	Anonymous	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0083	0.0085	0.0002	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.00016	0.00014	0.00002	Diff <2x LOR	----
		beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.050	mg/L	0.193	0.190	0.003	Diff <2x LOR	----
		cesium, total	7440-46-2	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		chromium, total	7440-47-3	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	0.0051	<0.0050	0.00009	Diff <2x LOR	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		rubidium, total	7440-17-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		selenium, total	7782-49-2	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		silicon, total	7440-21-3	E420	0.10	mg/L	1.06	1.10	3.24%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	0.283	0.278	0.005	Diff <2x LOR	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.00028	0.00027	0.000002	Diff <2x LOR	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
		tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 634749) - continued											
WT2213112-024	Anonymous	uranium, total	7440-61-1	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 644254)											
WT2213093-001	Anonymous	mercury, total	7439-97-6	E508-L	0.50	ng/L	2.16	2.28	0.12	Diff <2x LOR	----
Dissolved Metals (QC Lot: 635197)											
WT2213095-001	GERR LK	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0027	0.0029	0.0002	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00061	0.00060	0.000006	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0187	0.0189	1.04%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	40.7	41.2	1.17%	20%	----
		cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00027	0.00027	0.000004	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	0.037	0.038	0.0005	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0018	0.0018	0.00006	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	10.3	10.6	2.44%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00156	0.00157	0.612%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000147	0.000150	0.000002	Diff <2x LOR	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	1.08	1.10	2.21%	20%	----
		rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00166	0.00165	0.00002	Diff <2x LOR	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000077	0.000064	0.000013	Diff <2x LOR	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.25	2.25	0.0177%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	3.67	3.75	2.02%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.0764	0.0768	0.596%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 635197) - continued											
WT2213095-001	GERR LK	sulfur, dissolved	7704-34-9	E421	0.50	mg/L	0.72	0.73	0.004	Diff <2x LOR	----
		tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000034	0.000035	0.0000008	Diff <2x LOR	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 643460)											
CG2211952-001	Anonymous	methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L	0.000059	0.000051	0.000008	Diff <2x LOR	----
Speciated Metals (QC Lot: 655879)											
VA22C1472-002	Anonymous	methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L	<0.000020	<0.000020	0	Diff <2x LOR	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 634361)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 634364)						
solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 634995)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 634996)						
alkalinity, total (as CaCO3)	----	E290	1	mg/L	1.4	----
Physical Tests (QCLot: 634998)						
acidity (as CaCO3)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 635831)						
acidity (as CaCO3)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 637653)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 637654)						
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Anions and Nutrients (QCLot: 634999)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 635000)						
nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 635001)						
nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 635002)						
chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 635003)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 635832)						
nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 635833)						
nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 635834)						
chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 635835)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 635836)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 640846)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 640847)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 641220)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 641221)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Cyanides (QCLot: 638155)						
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 638156)						
cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 638157)						
cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 638158)						
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 638159)						
cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 638160)						
cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 645870)						
cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 645873)						
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 645874)						
cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Total Metals (QCLot: 634749)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 634749) - continued						
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----
Total Metals (QCLot: 644254)						
mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Dissolved Metals (QCLot: 635197)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 635197) - continued						
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 635197) - continued						
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Speciated Metals (QCLot: 643460)						
methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	<0.000020	----
Speciated Metals (QCLot: 655879)						
methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	<0.000020	----
Plant Pigments (QCLot: 639543)						
chlorophyll a	479-61-8	E870	0.01	µg/L	<0.010	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 634361)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	97.0	85.0	115	----
Physical Tests (QCLot: 634364)									
solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	87.3	85.0	115	----
Physical Tests (QCLot: 634995)									
conductivity	----	E100	1	µS/cm	1409 µS/cm	97.7	90.0	110	----
Physical Tests (QCLot: 634996)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	150 mg/L	100	85.0	115	----
Physical Tests (QCLot: 634997)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 634998)									
acidity (as CaCO3)	----	E283	2	mg/L	50 mg/L	104	85.0	115	----
Physical Tests (QCLot: 635831)									
acidity (as CaCO3)	----	E283	2	mg/L	50 mg/L	111	85.0	115	----
Physical Tests (QCLot: 637652)									
pH	----	E108	----	pH units	7 pH units	101	98.0	102	----
Physical Tests (QCLot: 637653)									
conductivity	----	E100	1	µS/cm	1409 µS/cm	102	90.0	110	----
Physical Tests (QCLot: 637654)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	150 mg/L	100	85.0	115	----
Anions and Nutrients (QCLot: 634999)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 635000)									
nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 635001)									
nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 635002)									
chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 635003)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 635832)									
nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 635833)									

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 635833) - continued									
nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 635834)									
chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 635835)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 635836)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.4	90.0	110	----
Anions and Nutrients (QCLot: 640846)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.53 mg/L	103	80.0	120	----
Anions and Nutrients (QCLot: 640847)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	90.4	85.0	115	----
Anions and Nutrients (QCLot: 641220)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.53 mg/L	97.7	80.0	120	----
Anions and Nutrients (QCLot: 641221)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	89.0	85.0	115	----
Cyanides (QCLot: 638155)									
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	0.25 mg/L	91.7	80.0	120	----
Cyanides (QCLot: 638156)									
cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	100	80.0	120	----
Cyanides (QCLot: 638157)									
cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	98.6	80.0	120	----
Cyanides (QCLot: 638158)									
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	0.25 mg/L	90.1	80.0	120	----
Cyanides (QCLot: 638159)									
cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	99.9	80.0	120	----
Cyanides (QCLot: 638160)									
cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	105	80.0	120	----
Cyanides (QCLot: 645870)									
cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	101	80.0	120	----
Cyanides (QCLot: 645873)									
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	0.25 mg/L	95.2	80.0	120	----
Cyanides (QCLot: 645874)									
cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	101	80.0	120	----
Total Metals (QCLot: 634749)									
aluminum, total	7429-90-5	E420	0.003	mg/L	0.1 mg/L	109	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 634749) - continued									
antimony, total	7440-36-0	E420	0.0001	mg/L	0.05 mg/L	107	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	0.05 mg/L	109	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.0125 mg/L	105	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.005 mg/L	106	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	0.05 mg/L	101	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	0.05 mg/L	104	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.005 mg/L	108	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	2.5 mg/L	103	80.0	120	----
cesium, total	7440-46-2	E420	0.00001	mg/L	0.0025 mg/L	107	80.0	120	----
chromium, total	7440-47-3	E420	0.0005	mg/L	0.0125 mg/L	105	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.0125 mg/L	105	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.0125 mg/L	106	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	0.05 mg/L	108	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.025 mg/L	104	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.0125 mg/L	104	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	2.5 mg/L	107	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.0125 mg/L	104	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.0125 mg/L	104	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.025 mg/L	106	80.0	120	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	0.5 mg/L	116	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	2.5 mg/L	108	80.0	120	----
rubidium, total	7440-17-7	E420	0.0002	mg/L	0.005 mg/L	109	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	0.05 mg/L	116	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	0.5 mg/L	111	80.0	120	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.005 mg/L	103	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	2.5 mg/L	108	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.0125 mg/L	102	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	2.5 mg/L	108	80.0	120	----
tellurium, total	13494-80-9	E420	0.0002	mg/L	0.005 mg/L	101	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	0.05 mg/L	103	80.0	120	----
thorium, total	7440-29-1	E420	0.0001	mg/L	0.005 mg/L	104	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.025 mg/L	106	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.0125 mg/L	104	80.0	120	----
tungsten, total	7440-33-7	E420	0.0001	mg/L	0.005 mg/L	103	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.00025 mg/L	106	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.025 mg/L	106	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.025 mg/L	114	80.0	120	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	0.005 mg/L	110	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 644254)									
mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	101	80.0	120	----
Dissolved Metals (QCLot: 635197)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	0.1 mg/L	111	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	0.05 mg/L	104	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	0.05 mg/L	108	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.0125 mg/L	106	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.005 mg/L	107	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	0.05 mg/L	101	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	0.05 mg/L	106	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.005 mg/L	108	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	2.5 mg/L	104	80.0	120	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.0025 mg/L	106	80.0	120	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.0125 mg/L	108	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.0125 mg/L	106	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.0125 mg/L	104	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	0.05 mg/L	109	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.025 mg/L	104	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.0125 mg/L	108	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	2.5 mg/L	109	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.0125 mg/L	105	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.0125 mg/L	104	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.025 mg/L	107	80.0	120	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	0.5 mg/L	109	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	2.5 mg/L	108	80.0	120	----
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.005 mg/L	106	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	0.05 mg/L	110	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	0.5 mg/L	111	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.005 mg/L	104	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	2.5 mg/L	110	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.0125 mg/L	102	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	2.5 mg/L	105	80.0	120	----
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.005 mg/L	101	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	0.05 mg/L	102	80.0	120	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.005 mg/L	103	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.025 mg/L	105	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.0125 mg/L	103	80.0	120	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.005 mg/L	104	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 635197) - continued									
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.00025 mg/L	107	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.025 mg/L	107	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.025 mg/L	111	80.0	120	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.005 mg/L	107	80.0	120	----
Speciated Metals (QCLot: 643460)									
methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	0.0025 µg/L	78.1	70.0	130	----
Speciated Metals (QCLot: 655879)									
methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	0.0025 µg/L	79.9	70.0	130	----
Plant Pigments (QCLot: 639543)									
chlorophyll a	479-61-8	E870	0.01	µg/L	5.64 µg/L	99.5	80.0	120	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 634999)										
WT2213093-001	Anonymous	fluoride	16984-48-8	E235.F	0.992 mg/L	1 mg/L	99.2	75.0	125	----
Anions and Nutrients (QCLot: 635000)										
WT2213093-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3	2.42 mg/L	2.5 mg/L	96.6	75.0	125	----
Anions and Nutrients (QCLot: 635001)										
WT2213093-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2	0.496 mg/L	0.5 mg/L	99.2	75.0	125	----
Anions and Nutrients (QCLot: 635002)										
WT2213093-001	Anonymous	chloride	16887-00-6	E235.Cl	98.3 mg/L	100 mg/L	98.3	75.0	125	----
Anions and Nutrients (QCLot: 635003)										
WT2213093-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	99.2 mg/L	100 mg/L	99.2	75.0	125	----
Anions and Nutrients (QCLot: 635832)										
WT2213095-011	NDRS02	nitrite (as N)	14797-65-0	E235.NO2	0.486 mg/L	0.5 mg/L	97.3	75.0	125	----
Anions and Nutrients (QCLot: 635833)										
WT2213095-011	NDRS02	nitrate (as N)	14797-55-8	E235.NO3	2.37 mg/L	2.5 mg/L	94.7	75.0	125	----
Anions and Nutrients (QCLot: 635834)										
WT2213095-011	NDRS02	chloride	16887-00-6	E235.Cl	97.3 mg/L	100 mg/L	97.3	75.0	125	----
Anions and Nutrients (QCLot: 635835)										
WT2213095-011	NDRS02	sulfate (as SO4)	14808-79-8	E235.SO4	98.0 mg/L	100 mg/L	98.0	75.0	125	----
Anions and Nutrients (QCLot: 635836)										
WT2213095-011	NDRS02	fluoride	16984-48-8	E235.F	0.996 mg/L	1 mg/L	99.6	75.0	125	----
Anions and Nutrients (QCLot: 640846)										
WT2213093-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0961 mg/L	0.1 mg/L	96.1	70.0	130	----
Anions and Nutrients (QCLot: 640847)										
WT2213093-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0983 mg/L	0.1 mg/L	98.3	75.0	125	----
Anions and Nutrients (QCLot: 641220)										
WT2213095-011	NDRS02	phosphorus, total	7723-14-0	E372-U	0.0934 mg/L	0.1 mg/L	93.4	70.0	130	----
Anions and Nutrients (QCLot: 641221)										
WT2213095-011	NDRS02	ammonia, total (as N)	7664-41-7	E298	0.0917 mg/L	0.1 mg/L	91.7	75.0	125	----
Cyanides (QCLot: 638155)										

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Cyanides (QCLot: 638155) - continued										
WT2213093-001	Anonymous	cyanide, strong acid dissociable (total)	----	E333	0.223 mg/L	0.25 mg/L	89.2	75.0	125	----
Cyanides (QCLot: 638156)										
WT2213093-001	Anonymous	cyanide, weak acid dissociable	----	E336	0.127 mg/L	0.125 mg/L	101	75.0	125	----
Cyanides (QCLot: 638157)										
WT2213093-001	Anonymous	cyanide, free	----	E339	0.133 mg/L	0.125 mg/L	107	75.0	125	----
Cyanides (QCLot: 638158)										
WT2213095-006	JCS01	cyanide, strong acid dissociable (total)	----	E333	0.217 mg/L	0.25 mg/L	86.7	75.0	125	----
Cyanides (QCLot: 638159)										
WT2213095-006	JCS01	cyanide, weak acid dissociable	----	E336	0.129 mg/L	0.125 mg/L	103	75.0	125	----
Cyanides (QCLot: 638160)										
WT2213095-006	JCS01	cyanide, free	----	E339	0.136 mg/L	0.125 mg/L	108	75.0	125	----
Cyanides (QCLot: 645870)										
CG2212318-001	Anonymous	cyanide, free	----	E339	0.131 mg/L	0.125 mg/L	105	75.0	125	----
Cyanides (QCLot: 645873)										
TY2201449-011	Anonymous	cyanide, strong acid dissociable (total)	----	E333	0.250 mg/L	0.25 mg/L	100.0	75.0	125	----
Cyanides (QCLot: 645874)										
WT2213095-009	NDRP06	cyanide, weak acid dissociable	----	E336	0.131 mg/L	0.125 mg/L	105	75.0	125	----
Total Metals (QCLot: 634749)										
WT2213112-025	Anonymous	aluminum, total	7429-90-5	E420	0.103 mg/L	0.1 mg/L	103	70.0	130	----
		antimony, total	7440-36-0	E420	0.0523 mg/L	0.05 mg/L	104	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0523 mg/L	0.05 mg/L	104	70.0	130	----
		barium, total	7440-39-3	E420	0.0126 mg/L	0.0125 mg/L	101	70.0	130	----
		beryllium, total	7440-41-7	E420	0.00518 mg/L	0.005 mg/L	104	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0503 mg/L	0.05 mg/L	100	70.0	130	----
		boron, total	7440-42-8	E420	0.052 mg/L	0.05 mg/L	105	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00531 mg/L	0.005 mg/L	106	70.0	130	----
		calcium, total	7440-70-2	E420	2.53 mg/L	2.5 mg/L	101	70.0	130	----
		cesium, total	7440-46-2	E420	0.00263 mg/L	0.0025 mg/L	105	70.0	130	----
		chromium, total	7440-47-3	E420	0.0129 mg/L	0.0125 mg/L	103	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0130 mg/L	0.0125 mg/L	104	70.0	130	----
		copper, total	7440-50-8	E420	0.0129 mg/L	0.0125 mg/L	104	70.0	130	----
		iron, total	7439-89-6	E420	0.054 mg/L	0.05 mg/L	108	70.0	130	----
		lead, total	7439-92-1	E420	0.0259 mg/L	0.025 mg/L	104	70.0	130	----
		lithium, total	7439-93-2	E420	0.0128 mg/L	0.0125 mg/L	103	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 634749) - continued										
WT2213112-025	Anonymous	magnesium, total	7439-95-4	E420	2.59 mg/L	2.5 mg/L	104	70.0	130	----
		manganese, total	7439-96-5	E420	0.0129 mg/L	0.0125 mg/L	103	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0128 mg/L	0.0125 mg/L	102	70.0	130	----
		nickel, total	7440-02-0	E420	0.0261 mg/L	0.025 mg/L	104	70.0	130	----
		phosphorus, total	7723-14-0	E420	0.548 mg/L	0.5 mg/L	110	70.0	130	----
		potassium, total	7440-09-7	E420	2.60 mg/L	2.5 mg/L	104	70.0	130	----
		rubidium, total	7440-17-7	E420	0.00523 mg/L	0.005 mg/L	104	70.0	130	----
		selenium, total	7782-49-2	E420	0.0561 mg/L	0.05 mg/L	112	70.0	130	----
		silicon, total	7440-21-3	E420	ND mg/L	0.5 mg/L	ND	70.0	130	----
		silver, total	7440-22-4	E420	0.00516 mg/L	0.005 mg/L	103	70.0	130	----
		sodium, total	7440-23-5	E420	2.62 mg/L	2.5 mg/L	105	70.0	130	----
		strontium, total	7440-24-6	E420	0.0125 mg/L	0.0125 mg/L	100	70.0	130	----
		sulfur, total	7704-34-9	E420	2.62 mg/L	2.5 mg/L	105	70.0	130	----
		tellurium, total	13494-80-9	E420	0.00517 mg/L	0.005 mg/L	103	70.0	130	----
		thallium, total	7440-28-0	E420	0.0509 mg/L	0.05 mg/L	102	70.0	130	----
		thorium, total	7440-29-1	E420	0.00523 mg/L	0.005 mg/L	105	70.0	130	----
		tin, total	7440-31-5	E420	0.0262 mg/L	0.025 mg/L	105	70.0	130	----
		titanium, total	7440-32-6	E420	0.0122 mg/L	0.0125 mg/L	97.5	70.0	130	----
		tungsten, total	7440-33-7	E420	0.00514 mg/L	0.005 mg/L	103	70.0	130	----
		uranium, total	7440-61-1	E420	0.000268 mg/L	0.00025 mg/L	107	70.0	130	----
		vanadium, total	7440-62-2	E420	0.0260 mg/L	0.025 mg/L	104	70.0	130	----
		zinc, total	7440-66-6	E420	0.0256 mg/L	0.025 mg/L	102	70.0	130	----
		zirconium, total	7440-67-7	E420	0.00531 mg/L	0.005 mg/L	106	70.0	130	----
Total Metals (QCLot: 644254)										
WT2213093-002	Anonymous	mercury, total	7439-97-6	E508-L	4.99 ng/L	5 ng/L	99.8	70.0	130	----
Dissolved Metals (QCLot: 635197)										
WT2213095-003	MAR LK	aluminum, dissolved	7429-90-5	E421	0.110 mg/L	0.1 mg/L	110	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0562 mg/L	0.05 mg/L	112	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0617 mg/L	0.05 mg/L	123	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.0133 mg/L	0.0125 mg/L	106	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.00600 mg/L	0.005 mg/L	120	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0487 mg/L	0.05 mg/L	97.3	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.056 mg/L	0.05 mg/L	112	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00603 mg/L	0.005 mg/L	120	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		cesium, dissolved	7440-46-2	E421	0.00278 mg/L	0.0025 mg/L	111	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 635197) - continued										
WT2213095-003	MAR LK	chromium, dissolved	7440-47-3	E421	0.0137 mg/L	0.0125 mg/L	109	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0137 mg/L	0.0125 mg/L	110	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0139 mg/L	0.0125 mg/L	111	70.0	130	----
		iron, dissolved	7439-89-6	E421	ND mg/L	0.05 mg/L	ND	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0272 mg/L	0.025 mg/L	109	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.0141 mg/L	0.0125 mg/L	113	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.0136 mg/L	0.0125 mg/L	109	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0138 mg/L	0.0125 mg/L	110	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0279 mg/L	0.025 mg/L	112	70.0	130	----
		phosphorus, dissolved	7723-14-0	E421	0.619 mg/L	0.5 mg/L	124	70.0	130	----
		potassium, dissolved	7440-09-7	E421	2.80 mg/L	2.5 mg/L	112	70.0	130	----
		rubidium, dissolved	7440-17-7	E421	0.00547 mg/L	0.005 mg/L	109	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.529 mg/L	0.5 mg/L	106	70.0	130	----
		silicon, dissolved	7440-21-3	E421	ND mg/L	0.5 mg/L	ND	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00541 mg/L	0.005 mg/L	108	70.0	130	----
		sodium, dissolved	7440-23-5	E421	2.81 mg/L	2.5 mg/L	112	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	3.02 mg/L	2.5 mg/L	121	70.0	130	----
		tellurium, dissolved	13494-80-9	E421	0.00639 mg/L	0.005 mg/L	128	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0539 mg/L	0.05 mg/L	108	70.0	130	----
		thorium, dissolved	7440-29-1	E421	0.00532 mg/L	0.005 mg/L	106	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0274 mg/L	0.025 mg/L	110	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0135 mg/L	0.0125 mg/L	108	70.0	130	----
		tungsten, dissolved	7440-33-7	E421	0.00540 mg/L	0.005 mg/L	108	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.000284 mg/L	0.00025 mg/L	113	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.0281 mg/L	0.025 mg/L	112	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.0319 mg/L	0.025 mg/L	128	70.0	130	----
		zirconium, dissolved	7440-67-7	E421	0.00547 mg/L	0.005 mg/L	109	70.0	130	----
Speciated Metals (QCLot: 643460)										
CG2211952-002	Anonymous	methylmercury (as MeHg), total	22967-92-6	E536	0.00337 µg/L	0.0025 µg/L	67.5	60.0	140	----
Speciated Metals (QCLot: 655879)										
FC2202184-001	Anonymous	methylmercury (as MeHg), total	22967-92-6	E536	0.00174 µg/L	0.0025 µg/L	69.8	60.0	140	----

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

COC Number: 22 -

Page of

Environmental Division Waterloo

Work Order Reference WT2213095

Telephone : +1 519 886 6910

Report To	Contact and company name below will appear on the final report
Company:	WoodPLC
Contact:	Dale Klodnicki
Phone:	905-568-2929
	Company address below will appear on the final report
Street:	160 Traders Blvd East Suite 110
City/Province:	Mississauga, ON
Postal Code:	L4Z 3K7
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	
Contact:	

Reports / Recipients

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Merge QC/QCI Reports with COA ☑ YES ☐ NO ☐ N/A

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: Dale.Klodnicki@woodplc.com

Email 2: SAMANTHA.SHERMAN@WOODPLC.COM

Email 3:

Invoice Recipients

Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: apinvoice.canada@woodplc.com

Email 2:

Turnaround Time (TAT) Requested

☐ Routine [R] if received by 3pm M-F - no surcharges apply
☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.

Additional fees may apply to rush requests on weekends, st

Date and Time Required for all E&P TATs:

For all tests with rush TATs requested, please contact your AM to confirm availability.

Project Information

ALS Account # / Quote #:	Q86725 WT2022WOOD1000015
Job #:	OMEMA2002
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#:
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (ALS use only): WT2213095

ALS Contact: RICK HAWTHORNE Sampler: SS/AS/DL/MG

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Acidity, Alkalinity	Cyanides (Tot,Wad,Free)	Anions	Conductivity, PH	Hardness	Total Metals	Dissolved Metals	Low Level Mercury Total	Methyl Mercury	NH3, TP	TSS,TDS	Phyto Plankton (if needed)	Chlorophyll (if needed)	Radium 226 (if needed)	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	GERR LK	31-Aug-22	15:00	Water	9	R	R	R	R	R	R	R	R	R	R	R						
	GERR LK	1-Sep-22	12:30	Water	2												R	R				
	MAR LK	31-Aug-22	18:00	Water	9	R	R	R	R	R	R	R	R	R	R	R						
	MAR LK	1-Sep-22	12:45	Water	2												R	R				
	TRIP BLANK	-	-	Water	9	R	R	R	R	R	R	R	R	R	R	R						
	JCS01	30-Aug-22	14:30	Water	9	R	R	R	R	R	R	R	R	R	R	R						
	NDRS04	30-Aug-22	12:00	Water	9	R	R	R	R	R	R	R	R	R	R	R						
	NDRS05	30-Aug-22	14:25	Water	9	R	R	R	R	R	R	R	R	R	R	R						
	NDRP06	30-Aug-22	14:35	Water	9	R	R	R	R	R	R	R	R	R	R	R						
	NDRP07	30-Aug-22	13:00	Water	9	R	R	R	R	R	R	R	R	R	R	R						
				Water																		
				Water																		

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?
☐ YES ☑ NO

Are samples for human consumption/ use?
☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

ONLY ONE BOTTLE IS LABELLED IN JCS01 BAG DUE TO TIME CONSTRAINTS. GER AND MAR HAVE SEPARATE BAGS FOR CHLORO/PHYTO BOTTLES

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☒ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				8.9			

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
SS	1-Sep	16:00

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:
	9/6/22	900

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

FEB 2022 FRONT

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

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

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WT2215061**	Page	: 1 of 10
Client	: **WSP E&I Canada Limited**	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 2020 Winston Park Drive Suite 600 Mississauga ON Canada L6H 6X7	Address	: 60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2002	Date Samples Received	: 20-Sep-2022 09:00
PO	: ----	Date Analysis Commenced	: 23-Sep-2022
C-O-C number	: ----	Issue Date	: 11-Oct-2022 16:27
Sampler	: SS/AS/DL/MG		
Site	: ----		
Quote number	: OMEMA2002		
No. of samples received	: 9		
No. of samples analysed	: 9		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Greg Pokocky	Supervisor - Inorganic	Inorganics, Waterloo, Ontario
Hamideh Moradi	Analyst	Metals, Burnaby, British Columbia
Jon Fisher	Department Manager - Inorganics	Inorganics, Waterloo, Ontario
Jon Fisher	Department Manager - Inorganics	Metals, Waterloo, Ontario
Kinny Wu	Lab Analyst	Metals, Burnaby, British Columbia
Oleksandr Busel		Inorganics, Winnipeg, Manitoba

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
mg/L	milligrams per litre
ng/L	nanograms per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

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

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	*Description*
DLDS	*Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.*
DLHC	*Detection Limit Raised: Dilution required due to high concentration of test analyte(s).*

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-JacLk	NDR-MelLk	NDR-SutLk	NDR-DavLk	NDR-P-05
					Client sampling date / time	16-Sep-2022 18:50	16-Sep-2022 14:20	16-Sep-2022 17:30	16-Sep-2022 11:45	17-Sep-2022 10:30
						WT2215061-001	WT2215061-002	WT2215061-003	WT2215061-004	WT2215061-005
						Result	Result	Result	Result	Result
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L		<2.0	<2.0	<2.0	<2.0	4.5
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		132	146	120	122	27.5
conductivity	----	E100	1.0	µS/cm		242	265	218	220	61.2
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L		118	136	112	114	40.4
pH	----	E108	0.10	pH units		8.43	8.33	8.34	8.40	7.10
solids, total dissolved [TDS]	----	E162	10	mg/L		122 DLDS	142 DLDS	104 DLDS	114 DLDS	117 DLDS
solids, total suspended [TSS]	----	E160	3.0	mg/L		<3.0	<3.0	<3.0	<3.0	5.7
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		0.0242	0.0074	0.0062	0.0430	0.0295
chloride	16887-00-6	E235.Cl	0.50	mg/L		<0.50	<0.50	<0.50	<0.50	<0.50
fluoride	16984-48-8	E235.F	0.020	mg/L		0.060	0.044	0.036	0.037	<0.020
nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L		<0.020	<0.020	<0.020	<0.020	<0.020
nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L		0.0078	0.0056	0.0078	0.0045	0.0351
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		1.73	4.08	2.17	2.64	<0.30
Cyanides										
cyanide, free	----	E339	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	0.0022
cyanide, strong acid dissociable (total)	----	E333	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	0.0023
cyanide, weak acid dissociable	----	E336	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L		0.0065	0.0038	0.0116	0.0034	0.212
antimony, total	7440-36-0	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
arsenic, total	7440-38-2	E420	0.00010	mg/L		0.00024	0.00022	0.00025	0.00016	0.00133
barium, total	7440-39-3	E420	0.00010	mg/L		0.0134	0.0139	0.0127	0.00986	0.00849
beryllium, total	7440-41-7	E420	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
bismuth, total	7440-69-9	E420	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, total	7440-42-8	E420	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
cadmium, total	7440-43-9	E420	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000110
calcium, total	7440-70-2	E420	0.050	mg/L		29.4	35.4	31.2	29.3	11.4
cesium, total	7440-46-2	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-JacLk	NDR-MelLk	NDR-SutLk	NDR-DavLk	NDR-P-05
					Client sampling date / time	16-Sep-2022 18:50	16-Sep-2022 14:20	16-Sep-2022 17:30	16-Sep-2022 11:45	17-Sep-2022 10:30
						WT2215061-001	WT2215061-002	WT2215061-003	WT2215061-004	WT2215061-005
						Result	Result	Result	Result	Result
Total Metals										
chromium, total	7440-47-3	E420	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	0.00084
cobalt, total	7440-48-4	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	0.00048
copper, total	7440-50-8	E420	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	0.00056
iron, total	7439-89-6	E420	0.010	mg/L		0.016	<0.010	0.016	<0.010	0.842
lead, total	7439-92-1	E420	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	0.000193
lithium, total	7439-93-2	E420	0.0010	mg/L		<0.0010	0.0012	<0.0010	<0.0010	<0.0010
magnesium, total	7439-95-4	E420	0.0050	mg/L		11.7	11.8	8.94	9.74	3.11
manganese, total	7439-96-5	E420	0.00010	mg/L		0.0177	0.00596	0.0124	0.00549	0.176
mercury, total	7439-97-6	E508-L	0.50	ng/L		0.61	<0.50	0.55	<0.50	1.95
molybdenum, total	7439-98-7	E420	0.000050	mg/L		0.000089	0.000088	<0.000050	<0.000050	<0.000050
nickel, total	7440-02-0	E420	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	0.00082
phosphorus, total	7723-14-0	E420	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
potassium, total	7440-09-7	E420	0.050	mg/L		1.10	1.13	0.824	0.889	0.162
rubidium, total	7440-17-7	E420	0.00020	mg/L		0.00157	0.00195	0.00136	0.00150	0.00064
selenium, total	7782-49-2	E420	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	0.000204
silicon, total	7440-21-3	E420	0.10	mg/L		1.42	3.46	2.13	2.78	2.55
silver, total	7440-22-4	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, total	7440-23-5	E420	0.050	mg/L		2.00	1.81	1.72	1.53	0.672
strontium, total	7440-24-6	E420	0.00020	mg/L		0.0529	0.0502	0.0426	0.0428	0.0292
sulfur, total	7704-34-9	E420	0.50	mg/L		0.76	1.61	0.95	1.07	<0.50
tellurium, total	13494-80-9	E420	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
thallium, total	7440-28-0	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
thorium, total	7440-29-1	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
tin, total	7440-31-5	E420	0.00010	mg/L		<0.00010	<0.00010	0.00014	<0.00010	<0.00010
titanium, total	7440-32-6	E420	0.00030	mg/L		<0.00030	<0.00030	0.00038	<0.00030	0.00423
tungsten, total	7440-33-7	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
uranium, total	7440-61-1	E420	0.000010	mg/L		0.000040	0.000184	0.000070	0.000076	0.000018
vanadium, total	7440-62-2	E420	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	0.00052
zinc, total	7440-66-6	E420	0.0030	mg/L		<0.0030	<0.0030	0.0071	<0.0030	0.0086
zirconium, total	7440-67-7	E420	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	0.00030
Dissolved Metals										

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-JacLk	NDR-MelLk	NDR-SutLk	NDR-DavLk	NDR-P-05
					Client sampling date / time	16-Sep-2022 18:50	16-Sep-2022 14:20	16-Sep-2022 17:30	16-Sep-2022 11:45	17-Sep-2022 10:30
						WT2215061-001	WT2215061-002	WT2215061-003	WT2215061-004	WT2215061-005
						Result	Result	Result	Result	Result
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.0016	<0.0010	0.0011	<0.0010	0.147 DLHC
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00100 DLHC
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00025	0.00020	0.00024	0.00013	0.00123 DLHC
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.0129	0.0143	0.0113	0.00981	0.00758 DLHC
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	<0.000200 DLHC
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000500 DLHC
boron, dissolved	7440-42-8	E421	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.100 DLHC
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000500 DLHC
calcium, dissolved	7440-70-2	E421	0.050	mg/L		29.9	36.5	31.2	30.4	12.0 DLHC
cesium, dissolved	7440-46-2	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000100 DLHC
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00500 DLHC
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00100 DLHC
copper, dissolved	7440-50-8	E421	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00200 DLHC
iron, dissolved	7439-89-6	E421	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	0.495 DLHC
lead, dissolved	7439-92-1	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000500 DLHC
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		<0.0010	0.0011	<0.0010	<0.0010	<0.0100 DLHC
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L		10.6	11.0	8.24	9.28	2.54 DLHC
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.00138	0.00088	0.00110	0.00042	0.0798 DLHC
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		0.000084	0.000084	<0.000050	<0.000050	<0.000500 DLHC
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00500 DLHC
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.500 DLHC
potassium, dissolved	7440-09-7	E421	0.050	mg/L		1.03	1.06	0.758	0.836	<0.500 DLHC
rubidium, dissolved	7440-17-7	E421	0.00020	mg/L		0.00149	0.00188	0.00134	0.00152	<0.00200 DLHC
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		<0.000050	<0.000050	0.000053	<0.000050	<0.000500 DLHC
silicon, dissolved	7440-21-3	E421	0.050	mg/L		1.30	3.18	1.97	2.58	2.03 DLHC
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000100 DLHC
sodium, dissolved	7440-23-5	E421	0.050	mg/L		1.82	1.55	1.23	1.33	<0.500 DLHC
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		0.0485	0.0494	0.0399	0.0411	0.0260 DLHC
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		0.61	1.39	0.81	0.93	<5.00 DLHC
tellurium, dissolved	13494-80-9	E421	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00200 DLHC
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000100 DLHC

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-JacLk	NDR-MelLk	NDR-SutLk	NDR-DavLk	NDR-P-05
					Client sampling date / time	16-Sep-2022 18:50	16-Sep-2022 14:20	16-Sep-2022 17:30	16-Sep-2022 11:45	17-Sep-2022 10:30
						WT2215061-001	WT2215061-002	WT2215061-003	WT2215061-004	WT2215061-005
						Result	Result	Result	Result	Result
Dissolved Metals										
thorium, dissolved	7440-29-1	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00100 DLHC
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00100 DLHC
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		<0.00030	<0.00030	<0.00030	<0.00030	<0.00300 DLHC
tungsten, dissolved	7440-33-7	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00100 DLHC
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		0.000038	0.000166	0.000063	0.000072	<0.000100 DLHC
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00500 DLHC
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		0.0014	<0.0010	<0.0010	<0.0010	<0.0100 DLHC
zirconium, dissolved	7440-67-7	E421	0.00030	mg/L		<0.00030	<0.00030	<0.00030	<0.00030	<0.00300 DLHC
dissolved metals filtration location	----	EP421	-	-		Field	Field	Field	Field	Field
Speciated Metals										
methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L		0.000034	0.000032	0.000028	0.000027	0.000112
Plant Pigments										
chlorophyll a	479-61-8	E870	0.010	µg/L		1.40	1.59	1.66	0.721	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-S-01	WBR-P-04	WBR-P-03	WBR-S-05	----
					Client sampling date / time	18-Sep-2022 13:30	18-Sep-2022 13:30	18-Sep-2022 16:00	18-Sep-2022 17:00	----
						WT2215061-006	WT2215061-007	WT2215061-008	WT2215061-009	--------
						Result	Result	Result	Result	----
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L		4.6	3.3	2.8	4.5	----
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		25.0	11.7	13.4	10.8	----
conductivity	----	E100	1.0	µS/cm		56.5	35.9	37.7	35.2	----
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L		36.7	22.1	23.4	20.9	----
pH	----	E108	0.10	pH units		7.08	6.94	7.03	6.85	----
solids, total dissolved [TDS]	----	E162	10	mg/L		101 DLDS	47	58	57	----
solids, total suspended [TSS]	----	E160	3.0	mg/L		<3.0	3.7	4.5	<3.0	----
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		0.0240	0.0164	0.0167	0.0897	----
chloride	16887-00-6	E235.Cl	0.50	mg/L		<0.50	<0.50	<0.50	<0.50	----
fluoride	16984-48-8	E235.F	0.020	mg/L		<0.020	0.020	0.020	<0.020	----
nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L		0.047	<0.020	<0.020	0.033	----
nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	----
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L		0.0195	0.0250	0.0218	0.0271	----
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		<0.30	<0.30	<0.30	<0.30	----
Cyanides										
cyanide, free	----	E339	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	----
cyanide, strong acid dissociable (total)	----	E333	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	----
cyanide, weak acid dissociable	----	E336	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	----
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L		0.190	0.274	0.188	0.140	----
antimony, total	7440-36-0	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	----
arsenic, total	7440-38-2	E420	0.00010	mg/L		0.00102	0.00089	0.00076	0.00071	----
barium, total	7440-39-3	E420	0.00010	mg/L		0.00503	0.00572	0.00390	0.00368	----
beryllium, total	7440-41-7	E420	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	----
bismuth, total	7440-69-9	E420	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	----
boron, total	7440-42-8	E420	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	----
cadmium, total	7440-43-9	E420	0.0000050	mg/L		0.0000175	0.0000109	0.0000113	0.0000139	----
calcium, total	7440-70-2	E420	0.050	mg/L		10.4	6.51	6.62	5.77	----
cesium, total	7440-46-2	E420	0.000010	mg/L		<0.000010	0.000025	0.000012	<0.000010	----
chromium, total	7440-47-3	E420	0.00050	mg/L		0.00076	0.00086	0.00078	0.00068	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-S-01	WBR-P-04	WBR-P-03	WBR-S-05	----
					Client sampling date / time	18-Sep-2022 13:30	18-Sep-2022 13:30	18-Sep-2022 16:00	18-Sep-2022 17:00	----
						WT2215061-006	WT2215061-007	WT2215061-008	WT2215061-009	--------
						Result	Result	Result	Result	----
Total Metals										
cobalt, total	7440-48-4	E420	0.00010	mg/L		0.00018	0.00024	0.00023	0.00046	----
copper, total	7440-50-8	E420	0.00050	mg/L		0.00072	0.00054	<0.00050	0.00063	----
iron, total	7439-89-6	E420	0.010	mg/L		0.626	0.608	0.595	0.741	----
lead, total	7439-92-1	E420	0.000050	mg/L		0.000223	0.000247	0.000242	0.000296	----
lithium, total	7439-93-2	E420	0.0010	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	----
magnesium, total	7439-95-4	E420	0.0050	mg/L		2.93	2.00	1.98	1.76	----
manganese, total	7439-96-5	E420	0.00010	mg/L		0.0293	0.0301	0.0313	0.0967	----
mercury, total	7439-97-6	E508-L	0.50	ng/L		2.86	1.24	1.54	1.37	----
molybdenum, total	7439-98-7	E420	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	----
nickel, total	7440-02-0	E420	0.00050	mg/L		0.00092	0.00075	0.00070	0.00064	----
phosphorus, total	7723-14-0	E420	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	----
potassium, total	7440-09-7	E420	0.050	mg/L		0.215	0.169	0.078	0.178	----
rubidium, total	7440-17-7	E420	0.00020	mg/L		0.00107	0.00091	0.00054	0.00099	----
selenium, total	7782-49-2	E420	0.000050	mg/L		0.000186	0.000111	0.000112	0.000087	----
silicon, total	7440-21-3	E420	0.10	mg/L		2.30	1.53	1.87	2.04	----
silver, total	7440-22-4	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	----
sodium, total	7440-23-5	E420	0.050	mg/L		0.616	0.298	0.350	0.356	----
strontium, total	7440-24-6	E420	0.00020	mg/L		0.0227	0.0157	0.0135	0.0122	----
sulfur, total	7704-34-9	E420	0.50	mg/L		<0.50	<0.50	<0.50	<0.50	----
tellurium, total	13494-80-9	E420	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	----
thallium, total	7440-28-0	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	----
thorium, total	7440-29-1	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	----
tin, total	7440-31-5	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	----
titanium, total	7440-32-6	E420	0.00030	mg/L		0.00381	0.00964	0.00516	0.00340	----
tungsten, total	7440-33-7	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	----
uranium, total	7440-61-1	E420	0.000010	mg/L		0.000018	0.000017	0.000015	<0.000010	----
vanadium, total	7440-62-2	E420	0.00050	mg/L		<0.00050	0.00063	<0.00050	<0.00050	----
zinc, total	7440-66-6	E420	0.0030	mg/L		0.0090	0.0059	0.0045	0.0066	----
zirconium, total	7440-67-7	E420	0.00020	mg/L		0.00031	0.00032	0.00020	<0.00020	----
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.181 DLHC	0.0900 DLHC	0.124 DLHC	0.109 DLHC	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-S-01	WBR-P-04	WBR-P-03	WBR-S-05	----
					Client sampling date / time	18-Sep-2022 13:30	18-Sep-2022 13:30	18-Sep-2022 16:00	18-Sep-2022 17:00	----
						WT2215061-006	WT2215061-007	WT2215061-008	WT2215061-009	--------
						Result	Result	Result	Result	----
Dissolved Metals										
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		<0.00100 DLHC	<0.00100 DLHC	<0.00100 DLHC	<0.00100 DLHC	----
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00103 DLHC	<0.00100 DLHC	<0.00100 DLHC	<0.00100 DLHC	----
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.00507 DLHC	0.00403 DLHC	0.00326 DLHC	0.00342 DLHC	----
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L		<0.000200 DLHC	<0.000200 DLHC	<0.000200 DLHC	<0.000200 DLHC	----
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000500 DLHC	<0.000500 DLHC	<0.000500 DLHC	<0.000500 DLHC	----
boron, dissolved	7440-42-8	E421	0.010	mg/L		<0.100 DLHC	<0.100 DLHC	<0.100 DLHC	<0.100 DLHC	----
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		<0.0000500 DLHC	<0.0000500 DLHC	<0.0000500 DLHC	<0.0000500 DLHC	----
calcium, dissolved	7440-70-2	E421	0.050	mg/L		10.7 DLHC	6.04 DLHC	6.51 DLHC	5.86 DLHC	----
cesium, dissolved	7440-46-2	E421	0.000010	mg/L		<0.000100 DLHC	<0.000100 DLHC	<0.000100 DLHC	<0.000100 DLHC	----
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		<0.00500 DLHC	<0.00500 DLHC	<0.00500 DLHC	<0.00500 DLHC	----
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		<0.00100 DLHC	<0.00100 DLHC	<0.00100 DLHC	<0.00100 DLHC	----
copper, dissolved	7440-50-8	E421	0.00020	mg/L		<0.00200 DLHC	<0.00200 DLHC	<0.00200 DLHC	<0.00200 DLHC	----
iron, dissolved	7439-89-6	E421	0.010	mg/L		0.513 DLHC	0.295 DLHC	0.360 DLHC	0.533 DLHC	----
lead, dissolved	7439-92-1	E421	0.000050	mg/L		<0.000500 DLHC	<0.000500 DLHC	<0.000500 DLHC	<0.000500 DLHC	----
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		<0.0100 DLHC	<0.0100 DLHC	<0.0100 DLHC	<0.0100 DLHC	----
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L		2.43 DLHC	1.71 DLHC	1.73 DLHC	1.53 DLHC	----
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.0278 DLHC	0.0210 DLHC	0.0224 DLHC	0.0908 DLHC	----
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		<0.000500 DLHC	<0.000500 DLHC	<0.000500 DLHC	<0.000500 DLHC	----
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		<0.00500 DLHC	<0.00500 DLHC	<0.00500 DLHC	<0.00500 DLHC	----
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.500 DLHC	<0.500 DLHC	<0.500 DLHC	<0.500 DLHC	----
potassium, dissolved	7440-09-7	E421	0.050	mg/L		<0.500 DLHC	<0.500 DLHC	<0.500 DLHC	<0.500 DLHC	----
rubidium, dissolved	7440-17-7	E421	0.00020	mg/L		<0.00200 DLHC	<0.00200 DLHC	<0.00200 DLHC	<0.00200 DLHC	----
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		<0.000500 DLHC	<0.000500 DLHC	<0.000500 DLHC	<0.000500 DLHC	----
silicon, dissolved	7440-21-3	E421	0.050	mg/L		2.10 DLHC	0.985 DLHC	1.64 DLHC	1.84 DLHC	----
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000100 DLHC	<0.000100 DLHC	<0.000100 DLHC	<0.000100 DLHC	----
sodium, dissolved	7440-23-5	E421	0.050	mg/L		<0.500 DLHC	<0.500 DLHC	<0.500 DLHC	<0.500 DLHC	----
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		0.0200 DLHC	0.0130 DLHC	0.0122 DLHC	0.0108 DLHC	----
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		<5.00 DLHC	<5.00 DLHC	<5.00 DLHC	<5.00 DLHC	----
tellurium, dissolved	13494-80-9	E421	0.00020	mg/L		<0.00200 DLHC	<0.00200 DLHC	<0.00200 DLHC	<0.00200 DLHC	----
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000100 DLHC	<0.000100 DLHC	<0.000100 DLHC	<0.000100 DLHC	----
thorium, dissolved	7440-29-1	E421	0.00010	mg/L		<0.00100 DLHC	<0.00100 DLHC	<0.00100 DLHC	<0.00100 DLHC	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

					Client sample ID	NDR-S-01	WBR-P-04	WBR-P-03	WBR-S-05	----
					Client sampling date / time	18-Sep-2022 13:30	18-Sep-2022 13:30	18-Sep-2022 16:00	18-Sep-2022 17:00	----
Analyte	CAS Number	Method	LOR	Unit		WT2215061-006	WT2215061-007	WT2215061-008	WT2215061-009	--------
						Result	Result	Result	Result	----
Dissolved Metals										
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00100 DLHC	<0.00100 DLHC	<0.00100 DLHC	<0.00100 DLHC	----
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		<0.00300 DLHC	<0.00300 DLHC	<0.00300 DLHC	<0.00300 DLHC	----
tungsten, dissolved	7440-33-7	E421	0.00010	mg/L		<0.00100 DLHC	<0.00100 DLHC	<0.00100 DLHC	<0.00100 DLHC	----
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		<0.000100 DLHC	<0.000100 DLHC	<0.000100 DLHC	<0.000100 DLHC	----
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		<0.00500 DLHC	<0.00500 DLHC	<0.00500 DLHC	<0.00500 DLHC	----
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		0.0111 DLHC	<0.0100 DLHC	<0.0100 DLHC	<0.0100 DLHC	----
zirconium, dissolved	7440-67-7	E421	0.00030	mg/L		<0.00300 DLHC	<0.00300 DLHC	<0.00300 DLHC	<0.00300 DLHC	----
dissolved metals filtration location	----	EP421	-	-		Field	Field	Field	Field	----
Speciated Metals										
methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L		0.000150	0.000047	0.000078	0.000062	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2215061**	Page	: 1 of 29
Client	: **WSP E&I Canada Limited**	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 2020 Winston Park Drive Suite 600 Mississauga ON Canada L6H 6X7	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2002	Date Samples Received	: 20-Sep-2022 09:00
PO	: ----	Issue Date	: 11-Oct-2022 16:27
C-O-C number	: ----		
Sampler	: SS/AS/DL/MG		
Site	: ----		
Quote number	: OMEMA2002		
No. of samples received	: 9		
No. of samples analysed	: 9		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] NDR-P-05	E298	17-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	10 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] NDR-DavLk	E298	16-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	11 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] NDR-JacLk	E298	16-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	11 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] NDR-MelLk	E298	16-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	11 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] NDR-SutLk	E298	16-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	11 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] NDR-S-01	E298	18-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	9 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] WBR-P-03	E298	18-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	9 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP]										
WBR-P-04	E298	18-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	9 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP]										
WBR-S-05	E298	18-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	9 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
NDR-DavLk	E235.Cl	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	10 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
NDR-JacLk	E235.Cl	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	10 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
NDR-MelLk	E235.Cl	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	10 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
NDR-SutLk	E235.Cl	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	10 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
NDR-S-01	E235.Cl	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
WBR-P-03	E235.Cl	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
WBR-P-04	E235.Cl	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
WBR-S-05	E235.Cl	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
NDR-P-05	E235.Cl	17-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	9 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
NDR-DavLk	E235.F	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	10 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
NDR-JacLk	E235.F	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	10 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
NDR-MelLk	E235.F	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	10 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
NDR-SutLk	E235.F	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	10 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
NDR-S-01	E235.F	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
WBR-P-03	E235.F	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
WBR-P-04	E235.F	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
WBR-S-05	E235.F	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
NDR-P-05	E235.F	17-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	9 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
NDR-DavLk	E235.NO3	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	7 days	10 days	× EHT
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
NDR-JacLk	E235.NO3	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	7 days	10 days	× EHT
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
NDR-MelLk	E235.NO3	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	7 days	10 days	× EHT
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
NDR-SutLk	E235.NO3	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	7 days	10 days	× EHT
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
NDR-S-01	E235.NO3	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	7 days	8 days	× EHT
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
WBR-P-03	E235.NO3	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	7 days	8 days	× EHT
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
WBR-P-04	E235.NO3	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	7 days	8 days	× EHT

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] WBR-S-05	E235.NO3	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	7 days	8 days	× EHT
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-P-05	E235.NO3	17-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	7 days	9 days	× EHT
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-DavLk	E235.NO2	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	7 days	10 days	× EHT
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-JacLk	E235.NO2	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	7 days	10 days	× EHT
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-MelLk	E235.NO2	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	7 days	10 days	× EHT
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-SutLk	E235.NO2	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	7 days	10 days	× EHT
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-S-01	E235.NO2	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	7 days	8 days	× EHT
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] WBR-P-03	E235.NO2	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	7 days	8 days	× EHT
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] WBR-P-04	E235.NO2	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	7 days	8 days	× EHT

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
WBR-S-05	E235.NO2	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	7 days	8 days	× EHT
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
NDR-P-05	E235.NO2	17-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	7 days	9 days	× EHT
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
NDR-DavLk	E235.SO4	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	10 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
NDR-JacLk	E235.SO4	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	10 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
NDR-MelLk	E235.SO4	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	10 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
NDR-SutLk	E235.SO4	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	10 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
NDR-S-01	E235.SO4	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
WBR-P-03	E235.SO4	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
WBR-P-04	E235.SO4	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
WBR-S-05	E235.SO4	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
NDR-P-05	E235.SO4	17-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	9 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
NDR-S-01	E372-U	18-Sep-2022	27-Sep-2022	----	----		28-Sep-2022	28 days	10 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
WBR-P-03	E372-U	18-Sep-2022	27-Sep-2022	----	----		28-Sep-2022	28 days	10 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
WBR-P-04	E372-U	18-Sep-2022	27-Sep-2022	----	----		28-Sep-2022	28 days	10 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
WBR-S-05	E372-U	18-Sep-2022	27-Sep-2022	----	----		28-Sep-2022	28 days	10 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
NDR-P-05	E372-U	17-Sep-2022	27-Sep-2022	----	----		28-Sep-2022	28 days	11 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
NDR-DavLk	E372-U	16-Sep-2022	27-Sep-2022	----	----		28-Sep-2022	28 days	12 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
NDR-JacLk	E372-U	16-Sep-2022	27-Sep-2022	----	----		28-Sep-2022	28 days	12 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
NDR-MelLk	E372-U	16-Sep-2022	27-Sep-2022	----	----		28-Sep-2022	28 days	12 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
NDR-SutLk	E372-U	16-Sep-2022	27-Sep-2022	----	----		28-Sep-2022	28 days	12 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
NDR-DavLk	E339	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	14 days	10 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
NDR-JacLk	E339	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	14 days	10 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
NDR-MelLk	E339	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	14 days	10 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
NDR-SutLk	E339	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	14 days	10 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
NDR-S-01	E339	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	14 days	8 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
WBR-P-03	E339	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	14 days	8 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
WBR-P-04	E339	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	14 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
WBR-S-05	E339	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	14 days	8 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
NDR-P-05	E339	17-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide)										
NDR-DavLk	E333	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	14 days	10 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide)										
NDR-JacLk	E333	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	14 days	10 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide)										
NDR-MelLk	E333	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	14 days	10 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide)										
NDR-SutLk	E333	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	14 days	10 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide)										
NDR-S-01	E333	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	14 days	8 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide)										
WBR-P-03	E333	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	14 days	8 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide)										
WBR-P-04	E333	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	14 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide)										
WBR-S-05	E333	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	14 days	8 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide)										
NDR-P-05	E333	17-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	14 days	9 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide)										
NDR-DavLk	E336	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	14 days	10 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide)										
NDR-JacLk	E336	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	14 days	10 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide)										
NDR-MelLk	E336	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	14 days	10 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide)										
NDR-SutLk	E336	16-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	14 days	10 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide)										
NDR-S-01	E336	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	14 days	8 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide)										
WBR-P-03	E336	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	14 days	8 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide)										
WBR-P-04	E336	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	14 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide)										
WBR-S-05	E336	18-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	14 days	8 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide)										
NDR-P-05	E336	17-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	14 days	9 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
NDR-S-01	E421	18-Sep-2022	23-Sep-2022	----	----		24-Sep-2022	180 days	5 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
WBR-P-03	E421	18-Sep-2022	23-Sep-2022	----	----		24-Sep-2022	180 days	5 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
WBR-P-04	E421	18-Sep-2022	23-Sep-2022	----	----		24-Sep-2022	180 days	5 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
WBR-S-05	E421	18-Sep-2022	23-Sep-2022	----	----		24-Sep-2022	180 days	5 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
NDR-P-05	E421	17-Sep-2022	23-Sep-2022	----	----		24-Sep-2022	180 days	6 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
NDR-DavLk	E421	16-Sep-2022	23-Sep-2022	----	----		24-Sep-2022	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
NDR-JacLk	E421	16-Sep-2022	23-Sep-2022	----	----		24-Sep-2022	180 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDR-MelLk	E421	16-Sep-2022	23-Sep-2022	----	----		24-Sep-2022	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDR-SutLk	E421	16-Sep-2022	23-Sep-2022	----	----		24-Sep-2022	180 days	7 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-P-05	E283	17-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	14 days	10 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-DavLk	E283	16-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	14 days	11 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-JacLk	E283	16-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	14 days	11 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-MelLk	E283	16-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	14 days	11 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-SutLk	E283	16-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	14 days	11 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-S-01	E283	18-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	14 days	9 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] WBR-P-03	E283	18-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	14 days	9 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Acidity by Titration										
HDPE [ON MECP]										
WBR-P-04	E283	18-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	14 days	9 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP]										
WBR-S-05	E283	18-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	14 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
NDR-P-05	E290	17-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	14 days	10 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
NDR-DavLk	E290	16-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	14 days	11 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
NDR-JacLk	E290	16-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	14 days	11 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
NDR-MelLk	E290	16-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	14 days	11 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
NDR-SutLk	E290	16-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	14 days	11 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
NDR-S-01	E290	18-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	14 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
WBR-P-03	E290	18-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	14 days	9 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] WBR-P-04	E290	18-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	14 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] WBR-S-05	E290	18-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	14 days	9 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-P-05	E100	17-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	10 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-DavLk	E100	16-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	11 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-JacLk	E100	16-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	11 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-MelLk	E100	16-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	11 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-SutLk	E100	16-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	11 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-S-01	E100	18-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	9 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] WBR-P-03	E100	18-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	9 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE [ON MECP] WBR-P-04	E100	18-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	9 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] WBR-S-05	E100	18-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	9 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-P-05	E108	17-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	14 days	10 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-DavLk	E108	16-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	14 days	11 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-JacLk	E108	16-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	14 days	11 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-MelLk	E108	16-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	14 days	11 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-SutLk	E108	16-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	14 days	11 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-S-01	E108	18-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	14 days	9 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] WBR-P-03	E108	18-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	14 days	9 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE [ON MECP] WBR-P-04	E108	18-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	14 days	9 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] WBR-S-05	E108	18-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	14 days	9 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-S-01	E162	18-Sep-2022	----	----	----		24-Sep-2022	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] WBR-P-03	E162	18-Sep-2022	----	----	----		24-Sep-2022	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] WBR-P-04	E162	18-Sep-2022	----	----	----		24-Sep-2022	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] WBR-S-05	E162	18-Sep-2022	----	----	----		24-Sep-2022	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-P-05	E162	17-Sep-2022	----	----	----		24-Sep-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-DavLk	E162	16-Sep-2022	----	----	----		24-Sep-2022	7 days	8 days	× EHT
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-JacLk	E162	16-Sep-2022	----	----	----		24-Sep-2022	7 days	8 days	× EHT

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-MelLk	E162	16-Sep-2022	----	----	----		24-Sep-2022	7 days	8 days	× EHT
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-SutLk	E162	16-Sep-2022	----	----	----		24-Sep-2022	7 days	8 days	× EHT
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-S-01	E160	18-Sep-2022	----	----	----		24-Sep-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] WBR-P-03	E160	18-Sep-2022	----	----	----		24-Sep-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] WBR-P-04	E160	18-Sep-2022	----	----	----		24-Sep-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] WBR-S-05	E160	18-Sep-2022	----	----	----		24-Sep-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-P-05	E160	17-Sep-2022	----	----	----		24-Sep-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-DavLk	E160	16-Sep-2022	----	----	----		24-Sep-2022	7 days	8 days	× EHT
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-JacLk	E160	16-Sep-2022	----	----	----		24-Sep-2022	7 days	8 days	× EHT

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
NDR-MelLk	E160	16-Sep-2022	----	----	----		24-Sep-2022	7 days	8 days	× EHT
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
NDR-SutLk	E160	16-Sep-2022	----	----	----		24-Sep-2022	7 days	8 days	× EHT
Plant Pigments : Chlorophyll-a by Fluorometry										
Opaque HDPE										
NDR-DavLk	E870	16-Sep-2022	29-Sep-2022	2 days	13 days	× EHTR	29-Sep-2022	672 hrs	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry										
Opaque HDPE										
NDR-JacLk	E870	16-Sep-2022	29-Sep-2022	2 days	13 days	× EHTR	29-Sep-2022	672 hrs	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry										
Opaque HDPE										
NDR-MelLk	E870	16-Sep-2022	29-Sep-2022	2 days	13 days	× EHTR	29-Sep-2022	672 hrs	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry										
Opaque HDPE										
NDR-SutLk	E870	16-Sep-2022	29-Sep-2022	2 days	13 days	× EHTR	29-Sep-2022	672 hrs	0 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
NDR-S-01	E536	18-Sep-2022	04-Oct-2022	----	----		08-Oct-2022	180 days	20 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
WBR-P-03	E536	18-Sep-2022	04-Oct-2022	----	----		08-Oct-2022	180 days	20 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
WBR-P-04	E536	18-Sep-2022	04-Oct-2022	----	----		08-Oct-2022	180 days	20 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
WBR-S-05	E536	18-Sep-2022	04-Oct-2022	----	----		08-Oct-2022	180 days	20 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
NDR-P-05	E536	17-Sep-2022	04-Oct-2022	----	----		08-Oct-2022	180 days	21 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
NDR-DavLk	E536	16-Sep-2022	04-Oct-2022	----	----		08-Oct-2022	180 days	22 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
NDR-JacLk	E536	16-Sep-2022	04-Oct-2022	----	----		08-Oct-2022	180 days	22 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
NDR-MelLk	E536	16-Sep-2022	04-Oct-2022	----	----		08-Oct-2022	180 days	22 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid)										
NDR-SutLk	E536	16-Sep-2022	04-Oct-2022	----	----		08-Oct-2022	180 days	22 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved)										
NDR-S-01	E508-L	18-Sep-2022	29-Sep-2022	28 days	11 days	✓	29-Sep-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved)										
WBR-P-03	E508-L	18-Sep-2022	29-Sep-2022	28 days	11 days	✓	29-Sep-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved)										
WBR-P-04	E508-L	18-Sep-2022	29-Sep-2022	28 days	11 days	✓	29-Sep-2022	28 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved)										
WBR-S-05	E508-L	18-Sep-2022	29-Sep-2022	28 days	11 days	✓	29-Sep-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved)										
NDR-P-05	E508-L	17-Sep-2022	29-Sep-2022	28 days	12 days	✓	29-Sep-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved)										
NDR-DavLk	E508-L	16-Sep-2022	29-Sep-2022	28 days	13 days	✓	29-Sep-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved)										
NDR-JacLk	E508-L	16-Sep-2022	29-Sep-2022	28 days	13 days	✓	29-Sep-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved)										
NDR-MelLk	E508-L	16-Sep-2022	29-Sep-2022	28 days	13 days	✓	29-Sep-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved)										
NDR-SutLk	E508-L	16-Sep-2022	29-Sep-2022	28 days	13 days	✓	29-Sep-2022	28 days	0 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
NDR-S-01	E420	18-Sep-2022	25-Sep-2022	----	----		25-Sep-2022	180 days	7 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
WBR-P-03	E420	18-Sep-2022	25-Sep-2022	----	----		25-Sep-2022	180 days	7 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
WBR-P-04	E420	18-Sep-2022	25-Sep-2022	----	----		25-Sep-2022	180 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
WBR-S-05	E420	18-Sep-2022	25-Sep-2022	----	----		25-Sep-2022	180 days	7 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
NDR-P-05	E420	17-Sep-2022	25-Sep-2022	----	----		25-Sep-2022	180 days	8 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
NDR-DavLk	E420	16-Sep-2022	25-Sep-2022	----	----		25-Sep-2022	180 days	9 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
NDR-JacLk	E420	16-Sep-2022	25-Sep-2022	----	----		25-Sep-2022	180 days	9 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
NDR-MelLk	E420	16-Sep-2022	25-Sep-2022	----	----		25-Sep-2022	180 days	9 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
NDR-SutLk	E420	16-Sep-2022	25-Sep-2022	----	----		25-Sep-2022	180 days	9 days	✓

Legend & Qualifier Definitions

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	663722	1	19	5.2	5.0	✓
Alkalinity Species by Titration	E290	663720	1	19	5.2	5.0	✓
Ammonia by Fluorescence	E298	662977	1	12	8.3	5.0	✓
Chloride in Water by IC	E235.Cl	663717	1	19	5.2	5.0	✓
Conductivity in Water	E100	663719	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	662938	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	663715	1	9	11.1	5.0	✓
Free Cyanide	E339	666272	1	10	10.0	5.0	✓
Nitrate in Water by IC	E235.NO3	663714	1	19	5.2	5.0	✓
Nitrite in Water by IC	E235.NO2	663716	1	19	5.2	5.0	✓
pH by Meter	E108	663721	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	663718	1	19	5.2	5.0	✓
TDS by Gravimetry	E162	664098	2	40	5.0	5.0	✓
Total Cyanide	E333	666270	2	30	6.6	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	672884	1	9	11.1	5.0	✓
Total metals in Water by CRC ICPMS	E420	664619	1	20	5.0	5.0	✓
Total Methylmercury in Water by GCAFS	E536	677508	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	662975	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	664041	2	40	5.0	4.7	✓
WAD Cyanide	E336	666271	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	663722	1	19	5.2	5.0	✓
Alkalinity Species by Titration	E290	663720	1	19	5.2	5.0	✓
Ammonia by Fluorescence	E298	662977	1	12	8.3	5.0	✓
Chloride in Water by IC	E235.Cl	663717	1	19	5.2	5.0	✓
Chlorophyll-a by Fluorometry	E870	672581	1	4	25.0	5.0	✓
Conductivity in Water	E100	663719	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	662938	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	663715	1	9	11.1	5.0	✓
Free Cyanide	E339	666272	1	10	10.0	5.0	✓
Nitrate in Water by IC	E235.NO3	663714	1	19	5.2	5.0	✓
Nitrite in Water by IC	E235.NO2	663716	1	19	5.2	5.0	✓
pH by Meter	E108	663721	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	663718	1	19	5.2	5.0	✓
TDS by Gravimetry	E162	664098	2	40	5.0	5.0	✓
Total Cyanide	E333	666270	2	30	6.6	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	672884	1	9	11.1	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Total metals in Water by CRC ICPMS	E420	664619	1	20	5.0	5.0	✓
Total Methylmercury in Water by GCAFS	E536	677508	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	662975	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	664041	2	40	5.0	4.7	✓
WAD Cyanide	E336	666271	1	20	5.0	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	663722	1	19	5.2	5.0	✓
Alkalinity Species by Titration	E290	663720	1	19	5.2	5.0	✓
Ammonia by Fluorescence	E298	662977	1	12	8.3	5.0	✓
Chloride in Water by IC	E235.Cl	663717	1	19	5.2	5.0	✓
Chlorophyll-a by Fluorometry	E870	672581	1	4	25.0	5.0	✓
Conductivity in Water	E100	663719	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	662938	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	663715	1	9	11.1	5.0	✓
Free Cyanide	E339	666272	1	10	10.0	5.0	✓
Nitrate in Water by IC	E235.NO3	663714	1	19	5.2	5.0	✓
Nitrite in Water by IC	E235.NO2	663716	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	663718	1	19	5.2	5.0	✓
TDS by Gravimetry	E162	664098	2	40	5.0	5.0	✓
Total Cyanide	E333	666270	2	30	6.6	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	672884	1	9	11.1	5.0	✓
Total metals in Water by CRC ICPMS	E420	664619	1	20	5.0	5.0	✓
Total Methylmercury in Water by GCAFS	E536	677508	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	662975	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	664041	2	40	5.0	4.7	✓
WAD Cyanide	E336	666271	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	662977	1	12	8.3	5.0	✓
Chloride in Water by IC	E235.Cl	663717	1	19	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	662938	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	663715	1	9	11.1	5.0	✓
Free Cyanide	E339	666272	1	10	10.0	5.0	✓
Nitrate in Water by IC	E235.NO3	663714	1	19	5.2	5.0	✓
Nitrite in Water by IC	E235.NO2	663716	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	663718	1	19	5.2	5.0	✓
Total Cyanide	E333	666270	2	30	6.6	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	672884	1	9	11.1	5.0	✓
Total metals in Water by CRC ICPMS	E420	664619	1	20	5.0	5.0	✓
Total Methylmercury in Water by GCAFS	E536	677508	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	662975	1	20	5.0	5.0	✓

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
WAD Cyanide	E336	666271	1	20	5.0	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Waterloo - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Waterloo - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry	E160 Waterloo - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Waterloo - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Chloride in Water by IC	E235.Cl Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC	E235.NO2 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC	E235.NO3 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Waterloo - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Waterloo - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Waterloo - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Cyanide	E333 Waterloo - Environmental	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336 Waterloo - Environmental	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339 Waterloo - Environmental	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Waterloo - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total metals in Water by CRC ICPMS	E420 Waterloo - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 Waterloo - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Total Methylmercury in Water by GCAFS	E536 Vancouver - Environmental	Water	EPA 1630 (mod)	This method follows Method 1630 of the US EPA. Samples are distilled under an inert gas flow to isolate methylmercury and minimize matrix interferences. The distillate is analyzed by aqueous phase ethylation, purge and trap, desorption and GC separation. The separated species are then pyrolized to elemental Hg and quantified by cold vapour atomic flourescence spectroscopy. Results are reported "as MeHg".

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Chlorophyll-a by Fluorometry	E870 Winnipeg - Environmental	Water	EPA 445.0 (mod)	Chlorophyll a is determined by solvent extraction followed with analysis by fluorometry using the non-acidification procedure. This method is not subject to interferences from chlorophyll b.
Dissolved Hardness (Calculated)	EC100 Waterloo - Environmental	Water	APHA 2340B	“Hardness (as CaCO3), dissolved” is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. “Total Hardness” refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Waterloo - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for Total Phosphorus in water	EP372 Waterloo - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Waterloo - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Total Methylmercury Water Preparation	EP536 Vancouver - Environmental	Water	EPA 1630	This method follows Method 1630 of the US EPA. Samples are distilled under an inert gas flow to isolate methylmercury and minimize matrix interferences. The distillate is analyzed by aqueous phase ethylation, purge and trap, desorption and GC separation. The separated species are then pyrolized to elemental Hg and quantified by cold vapour atomic flourescence spectroscopy. Results are reported "as MeHg".
Chlorophyll-a Extraction	EP870 Winnipeg - Environmental	Water	EPA 445.0 (mod)	Chlorophyll-a solvent extraction.

QUALITY CONTROL REPORT

Work Order	: **WT2215061**	Page	: 1 of 18
Client	: WSP E&I Canada Limited	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 2020 Winston Park Drive Suite 600 Mississauga ON Canada L6H 6X7	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2002	Date Samples Received	: 20-Sep-2022 09:00
PO	: ----	Date Analysis Commenced	: 23-Sep-2022
C-O-C number	: ----	Issue Date	: 11-Oct-2022 16:27
Sampler	: SS/AS/DL/MG		
Site	: ----		
Quote number	: OMEMA2002		
No. of samples received	: 9		
No. of samples analysed	: 9		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Greg Pokocky	Supervisor - Inorganic	Waterloo Inorganics, Waterloo, Ontario
Hamideh Moradi	Analyst	Vancouver Metals, Burnaby, British Columbia
Jon Fisher	Department Manager - Inorganics	Waterloo Inorganics, Waterloo, Ontario
Jon Fisher	Department Manager - Inorganics	Waterloo Metals, Waterloo, Ontario
Kinny Wu	Lab Analyst	Vancouver Metals, Burnaby, British Columbia
Oleksandr Busel		Winnipeg Inorganics, Winnipeg, Manitoba

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 663719)											
WT2215061-001	NDR-JacLk	conductivity	----	E100	1.0	µS/cm	242	238	1.67%	10%	----
Physical Tests (QC Lot: 663720)											
WT2215061-001	NDR-JacLk	alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	132	132	0.288%	20%	----
Physical Tests (QC Lot: 663721)											
WT2215061-001	NDR-JacLk	pH	----	E108	0.10	pH units	8.43	8.43	0.00%	4%	----
Physical Tests (QC Lot: 663722)											
WT2215061-001	NDR-JacLk	acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 664041)											
WT2215061-001	NDR-JacLk	solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 664098)											
WT2215061-001	NDR-JacLk	solids, total dissolved [TDS]	----	E162	20	mg/L	122	126	4	Diff <2x LOR	----
Physical Tests (QC Lot: 664100)											
WT2215145-001	Anonymous	solids, total dissolved [TDS]	----	E162	20	mg/L	397	397	0.00%	20%	----
Physical Tests (QC Lot: 664101)											
WT2215145-001	Anonymous	solids, total suspended [TSS]	----	E160	7.5	mg/L	264	268	1.69%	20%	----
Anions and Nutrients (QC Lot: 662975)											
WT2214778-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.276	0.274	0.726%	20%	----
Anions and Nutrients (QC Lot: 662977)											
WT2214755-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 663714)											
WT2215061-001	NDR-JacLk	nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 663715)											
WT2215061-001	NDR-JacLk	fluoride	16984-48-8	E235.F	0.020	mg/L	0.060	0.059	0.001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 663716)											
WT2215061-001	NDR-JacLk	nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 663717)											
WT2215061-001	NDR-JacLk	chloride	16887-00-6	E235.Cl	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 663718)											
WT2215061-001	NDR-JacLk	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	1.73	1.68	0.05	Diff <2x LOR	----
Cyanides (QC Lot: 666270)											
VA22C2219-002	Anonymous	cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Cyanides (QC Lot: 666271)											
VA22C2219-002	Anonymous	cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 666272)											
VA22C2219-002	Anonymous	cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 666273)											
WT2215061-004	NDR-DavLk	cyanide, strong acid dissociable (total)	----	E333	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Total Metals (QC Lot: 664619)											
WT2215061-001	NDR-JacLk	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0065	0.0074	0.0008	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00024	0.00024	0.000007	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.0134	0.0134	0.372%	20%	----
		beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.050	mg/L	29.4	30.2	2.77%	20%	----
		cesium, total	7440-46-2	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		chromium, total	7440-47-3	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	0.016	0.017	0.0008	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	11.7	11.8	1.44%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.0177	0.0177	0.217%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000089	0.000088	0.000001	Diff <2x LOR	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.050	mg/L	1.10	1.10	0.00516%	20%	----
		rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00157	0.00156	0.000003	Diff <2x LOR	----
		selenium, total	7782-49-2	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		silicon, total	7440-21-3	E420	0.10	mg/L	1.42	1.47	3.03%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	2.00	2.04	1.85%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.0529	0.0526	0.570%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	0.76	0.81	0.06	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 664619) - continued											
WT2215061-001	NDR-JacLk	tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.000040	0.000041	0.000001	Diff <2x LOR	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 672884)											
WT2215061-001	NDR-JacLk	mercury, total	7439-97-6	E508-L	0.50	ng/L	0.61	<0.50	0.11	Diff <2x LOR	----
Dissolved Metals (QC Lot: 662938)											
WT2215061-001	NDR-JacLk	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0016	0.0021	0.0005	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00025	0.00022	0.00003	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0129	0.0130	0.753%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	29.9	30.7	2.54%	20%	----
		cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	10.6	10.9	2.62%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00138	0.00139	1.26%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000084	0.000084	0.0000003	Diff <2x LOR	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	1.03	1.05	2.08%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 662938) - continued											
WT2215061-001	NDR-JacLk	rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00149	0.00152	0.00003	Diff <2x LOR	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	1.30	1.32	1.43%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	1.82	1.83	0.262%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.0485	0.0492	1.36%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	0.61	0.59	0.02	Diff <2x LOR	----
		tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000038	0.000037	0.0000001	Diff <2x LOR	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0014	0.0014	0.00006	Diff <2x LOR	----
		zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 677508)											
TY2201758-001	Anonymous	methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L	0.000286	0.000316	9.74%	30%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 663719)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 663720)						
alkalinity, total (as CaCO3)	----	E290	1	mg/L	1.2	----
Physical Tests (QCLot: 663722)						
acidity (as CaCO3)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 664041)						
solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 664098)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 664100)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 664101)						
solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Anions and Nutrients (QCLot: 662975)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 662977)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 663714)						
nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 663715)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 663716)						
nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 663717)						
chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 663718)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Cyanides (QCLot: 666270)						
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 666271)						
cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 666272)						
cyanide, free	----	E339	0.002	mg/L	<0.0020	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Cyanides (QCLot: 666273)						
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	<0.0020	----
Total Metals (QCLot: 664619)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 664619) - continued						
tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----
Total Metals (QCLot: 672884)						
mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Dissolved Metals (QCLot: 662938)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 662938) - continued						
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Speciated Metals (QCLot: 677508)						
methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	<0.000020	----
Plant Pigments (QCLot: 672581)						
chlorophyll a	479-61-8	E870	0.01	µg/L	<0.010	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 663719)									
conductivity	----	E100	1	µS/cm	1409 µS/cm	98.9	90.0	110	----
Physical Tests (QCLot: 663720)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	150 mg/L	98.8	85.0	115	----
Physical Tests (QCLot: 663721)									
pH	----	E108	----	pH units	7 pH units	101	98.0	102	----
Physical Tests (QCLot: 663722)									
acidity (as CaCO3)	----	E283	2	mg/L	50 mg/L	106	85.0	115	----
Physical Tests (QCLot: 664041)									
solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	98.5	85.0	115	----
Physical Tests (QCLot: 664098)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	85.8	85.0	115	----
Physical Tests (QCLot: 664100)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	87.6	85.0	115	----
Physical Tests (QCLot: 664101)									
solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	97.5	85.0	115	----
Anions and Nutrients (QCLot: 662975)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.53 mg/L	99.9	80.0	120	----
Anions and Nutrients (QCLot: 662977)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	99.0	85.0	115	----
Anions and Nutrients (QCLot: 663714)									
nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 663715)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 663716)									
nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 663717)									
chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 663718)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Cyanides (QCLot: 666270)									
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	0.25 mg/L	88.4	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Cyanides (QCLot: 666271)									
cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	100	80.0	120	----
Cyanides (QCLot: 666272)									
cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	98.4	80.0	120	----
Cyanides (QCLot: 666273)									
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	0.25 mg/L	88.3	80.0	120	----
Total Metals (QCLot: 664619)									
aluminum, total	7429-90-5	E420	0.003	mg/L	0.1 mg/L	102	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	0.05 mg/L	99.1	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	0.05 mg/L	99.8	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.0125 mg/L	95.8	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.005 mg/L	94.2	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	0.05 mg/L	96.3	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	0.05 mg/L	90.4	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.005 mg/L	102	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	2.5 mg/L	96.1	80.0	120	----
cesium, total	7440-46-2	E420	0.00001	mg/L	0.0025 mg/L	99.3	80.0	120	----
chromium, total	7440-47-3	E420	0.0005	mg/L	0.0125 mg/L	100	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.0125 mg/L	101	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.0125 mg/L	99.3	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	0.05 mg/L	101	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.025 mg/L	99.3	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.0125 mg/L	92.6	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	2.5 mg/L	110	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.0125 mg/L	99.3	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.0125 mg/L	93.7	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.025 mg/L	101	80.0	120	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	0.5 mg/L	98.8	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	2.5 mg/L	98.6	80.0	120	----
rubidium, total	7440-17-7	E420	0.0002	mg/L	0.005 mg/L	102	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	0.05 mg/L	101	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	0.5 mg/L	99.3	80.0	120	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.005 mg/L	98.4	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	2.5 mg/L	108	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.0125 mg/L	100	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	2.5 mg/L	98.8	80.0	120	----
tellurium, total	13494-80-9	E420	0.0002	mg/L	0.005 mg/L	100	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 664619) - continued									
thallium, total	7440-28-0	E420	0.00001	mg/L	0.05 mg/L	97.7	80.0	120	----
thorium, total	7440-29-1	E420	0.0001	mg/L	0.005 mg/L	96.9	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.025 mg/L	92.6	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.0125 mg/L	95.3	80.0	120	----
tungsten, total	7440-33-7	E420	0.0001	mg/L	0.005 mg/L	96.2	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.00025 mg/L	99.1	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.025 mg/L	102	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.025 mg/L	98.6	80.0	120	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	0.005 mg/L	97.7	80.0	120	----
Total Metals (QCLot: 672884)									
mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	109	80.0	120	----
Dissolved Metals (QCLot: 662938)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	0.1 mg/L	94.5	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	0.05 mg/L	106	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	0.05 mg/L	104	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.0125 mg/L	105	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.005 mg/L	89.0	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	0.05 mg/L	101	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	0.05 mg/L	85.4	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.005 mg/L	102	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	2.5 mg/L	101	80.0	120	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.0025 mg/L	107	80.0	120	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.0125 mg/L	98.4	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.0125 mg/L	98.8	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.0125 mg/L	97.6	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	0.05 mg/L	97.2	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.025 mg/L	103	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.0125 mg/L	84.7	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	2.5 mg/L	93.5	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.0125 mg/L	98.1	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.0125 mg/L	98.5	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.025 mg/L	98.7	80.0	120	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	0.5 mg/L	93.1	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	2.5 mg/L	94.5	80.0	120	----
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.005 mg/L	104	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	0.05 mg/L	105	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 662938) - continued									
silicon, dissolved	7440-21-3	E421	0.05	mg/L	0.5 mg/L	94.2	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.005 mg/L	97.0	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	2.5 mg/L	97.5	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.0125 mg/L	102	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	2.5 mg/L	90.8	80.0	120	----
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.005 mg/L	102	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	0.05 mg/L	105	80.0	120	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.005 mg/L	104	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.025 mg/L	101	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.0125 mg/L	93.9	80.0	120	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.005 mg/L	97.9	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.00025 mg/L	106	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.025 mg/L	98.9	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.025 mg/L	102	80.0	120	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.005 mg/L	99.4	80.0	120	----
Speciated Metals (QCLot: 677508)									
methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	0.0025 µg/L	77.3	70.0	130	----
Plant Pigments (QCLot: 672581)									
chlorophyll a	479-61-8	E870	0.01	µg/L	5.64 µg/L	103	80.0	120	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 662975)										
WT2214778-001	Anonymous	phosphorus, total	7723-14-0	E372-U	ND mg/L	0.1 mg/L	ND	70.0	130	----
Anions and Nutrients (QCLot: 662977)										
WT2214755-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0983 mg/L	0.1 mg/L	98.3	75.0	125	----
Anions and Nutrients (QCLot: 663714)										
WT2215061-001	NDR-JacLk	nitrate (as N)	14797-55-8	E235.NO3	2.41 mg/L	2.5 mg/L	96.2	75.0	125	----
Anions and Nutrients (QCLot: 663715)										
WT2215061-001	NDR-JacLk	fluoride	16984-48-8	E235.F	0.994 mg/L	1 mg/L	99.4	75.0	125	----
Anions and Nutrients (QCLot: 663716)										
WT2215061-001	NDR-JacLk	nitrite (as N)	14797-65-0	E235.NO2	0.496 mg/L	0.5 mg/L	99.3	75.0	125	----
Anions and Nutrients (QCLot: 663717)										
WT2215061-001	NDR-JacLk	chloride	16887-00-6	E235.Cl	99.4 mg/L	100 mg/L	99.4	75.0	125	----
Anions and Nutrients (QCLot: 663718)										
WT2215061-001	NDR-JacLk	sulfate (as SO4)	14808-79-8	E235.SO4	97.8 mg/L	100 mg/L	97.8	75.0	125	----
Cyanides (QCLot: 666270)										
VA22C2219-002	Anonymous	cyanide, strong acid dissociable (total)	----	E333	0.212 mg/L	0.25 mg/L	84.8	75.0	125	----
Cyanides (QCLot: 666271)										
VA22C2219-002	Anonymous	cyanide, weak acid dissociable	----	E336	0.126 mg/L	0.125 mg/L	101	75.0	125	----
Cyanides (QCLot: 666272)										
VA22C2219-002	Anonymous	cyanide, free	----	E339	0.126 mg/L	0.125 mg/L	101	75.0	125	----
Cyanides (QCLot: 666273)										
WT2215061-004	NDR-DavLk	cyanide, strong acid dissociable (total)	----	E333	0.224 mg/L	0.25 mg/L	89.5	75.0	125	----
Total Metals (QCLot: 664619)										
WT2215061-002	NDR-MelLk	aluminum, total	7429-90-5	E420	0.103 mg/L	0.1 mg/L	103	70.0	130	----
		antimony, total	7440-36-0	E420	0.0529 mg/L	0.05 mg/L	106	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0509 mg/L	0.05 mg/L	102	70.0	130	----
		barium, total	7440-39-3	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		beryllium, total	7440-41-7	E420	0.00474 mg/L	0.005 mg/L	94.8	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0500 mg/L	0.05 mg/L	100	70.0	130	----
		boron, total	7440-42-8	E420	0.045 mg/L	0.05 mg/L	91.0	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 664619) - continued										
WT2215061-002	NDR-MelLk	cadmium, total	7440-43-9	E420	0.00531 mg/L	0.005 mg/L	106	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		cesium, total	7440-46-2	E420	0.00261 mg/L	0.0025 mg/L	104	70.0	130	----
		chromium, total	7440-47-3	E420	0.0129 mg/L	0.0125 mg/L	103	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0127 mg/L	0.0125 mg/L	102	70.0	130	----
		copper, total	7440-50-8	E420	0.0125 mg/L	0.0125 mg/L	99.9	70.0	130	----
		iron, total	7439-89-6	E420	0.051 mg/L	0.05 mg/L	102	70.0	130	----
		lead, total	7439-92-1	E420	0.0254 mg/L	0.025 mg/L	102	70.0	130	----
		lithium, total	7439-93-2	E420	0.0116 mg/L	0.0125 mg/L	93.0	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.0122 mg/L	0.0125 mg/L	97.4	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0125 mg/L	0.0125 mg/L	100	70.0	130	----
		nickel, total	7440-02-0	E420	0.0256 mg/L	0.025 mg/L	102	70.0	130	----
		phosphorus, total	7723-14-0	E420	0.532 mg/L	0.5 mg/L	106	70.0	130	----
		potassium, total	7440-09-7	E420	2.44 mg/L	2.5 mg/L	97.7	70.0	130	----
		rubidium, total	7440-17-7	E420	0.00508 mg/L	0.005 mg/L	102	70.0	130	----
		selenium, total	7782-49-2	E420	0.0519 mg/L	0.05 mg/L	104	70.0	130	----
		silicon, total	7440-21-3	E420	ND mg/L	0.5 mg/L	ND	70.0	130	----
		silver, total	7440-22-4	E420	0.00521 mg/L	0.005 mg/L	104	70.0	130	----
		sodium, total	7440-23-5	E420	2.48 mg/L	2.5 mg/L	99.4	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	2.30 mg/L	2.5 mg/L	92.2	70.0	130	----
		tellurium, total	13494-80-9	E420	0.00494 mg/L	0.005 mg/L	98.7	70.0	130	----
		thallium, total	7440-28-0	E420	0.0503 mg/L	0.05 mg/L	101	70.0	130	----
		thorium, total	7440-29-1	E420	0.00509 mg/L	0.005 mg/L	102	70.0	130	----
		tin, total	7440-31-5	E420	0.0248 mg/L	0.025 mg/L	99.2	70.0	130	----
		titanium, total	7440-32-6	E420	0.0124 mg/L	0.0125 mg/L	99.1	70.0	130	----
		tungsten, total	7440-33-7	E420	0.00498 mg/L	0.005 mg/L	99.7	70.0	130	----
		uranium, total	7440-61-1	E420	0.000256 mg/L	0.00025 mg/L	102	70.0	130	----
		vanadium, total	7440-62-2	E420	0.0264 mg/L	0.025 mg/L	106	70.0	130	----
		zinc, total	7440-66-6	E420	0.0241 mg/L	0.025 mg/L	96.3	70.0	130	----
		zirconium, total	7440-67-7	E420	0.00520 mg/L	0.005 mg/L	104	70.0	130	----
Total Metals (QCLot: 672884)										
WT2215061-002	NDR-MelLk	mercury, total	7439-97-6	E508-L	4.88 ng/L	5 ng/L	97.7	70.0	130	----
Dissolved Metals (QCLot: 662938)										
WT2215061-002	NDR-MelLk	aluminum, dissolved	7429-90-5	E421	0.0934 mg/L	0.1 mg/L	93.4	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 662938) - continued										
WT2215061-002	NDR-MelLk	antimony, dissolved	7440-36-0	E421	0.0515 mg/L	0.05 mg/L	103	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0530 mg/L	0.05 mg/L	106	70.0	130	----
		barium, dissolved	7440-39-3	E421	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.00484 mg/L	0.005 mg/L	96.9	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0446 mg/L	0.05 mg/L	89.2	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.043 mg/L	0.05 mg/L	85.8	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00501 mg/L	0.005 mg/L	100	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		cesium, dissolved	7440-46-2	E421	0.00258 mg/L	0.0025 mg/L	103	70.0	130	----
		chromium, dissolved	7440-47-3	E421	0.0117 mg/L	0.0125 mg/L	93.9	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0117 mg/L	0.0125 mg/L	93.8	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0116 mg/L	0.0125 mg/L	92.5	70.0	130	----
		iron, dissolved	7439-89-6	E421	0.047 mg/L	0.05 mg/L	93.6	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0256 mg/L	0.025 mg/L	102	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.0118 mg/L	0.0125 mg/L	94.4	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.0118 mg/L	0.0125 mg/L	94.3	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0118 mg/L	0.0125 mg/L	94.4	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0233 mg/L	0.025 mg/L	93.1	70.0	130	----
		phosphorus, dissolved	7723-14-0	E421	0.493 mg/L	0.5 mg/L	98.5	70.0	130	----
		potassium, dissolved	7440-09-7	E421	2.27 mg/L	2.5 mg/L	90.7	70.0	130	----
		rubidium, dissolved	7440-17-7	E421	0.00531 mg/L	0.005 mg/L	106	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0620 mg/L	0.05 mg/L	124	70.0	130	----
		silicon, dissolved	7440-21-3	E421	ND mg/L	0.5 mg/L	ND	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00456 mg/L	0.005 mg/L	91.1	70.0	130	----
		sodium, dissolved	7440-23-5	E421	2.24 mg/L	2.5 mg/L	89.6	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	2.52 mg/L	2.5 mg/L	101	70.0	130	----
		tellurium, dissolved	13494-80-9	E421	0.00559 mg/L	0.005 mg/L	112	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0503 mg/L	0.05 mg/L	101	70.0	130	----
		thorium, dissolved	7440-29-1	E421	0.00476 mg/L	0.005 mg/L	95.1	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0242 mg/L	0.025 mg/L	96.8	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0116 mg/L	0.0125 mg/L	92.7	70.0	130	----
		tungsten, dissolved	7440-33-7	E421	0.00477 mg/L	0.005 mg/L	95.5	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.000253 mg/L	0.00025 mg/L	101	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.0240 mg/L	0.025 mg/L	95.9	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.0244 mg/L	0.025 mg/L	97.7	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 662938) - continued										
WT2215061-002	NDR-MelLk	zirconium, dissolved	7440-67-7	E421	0.00477 mg/L	0.005 mg/L	95.4	70.0	130	----
Speciated Metals (QCLot: 677508)										
TY2201758-002	Anonymous	methylmercury (as MeHg), total	22967-92-6	E536	0.00239 µg/L	0.0025 µg/L	95.5	60.0	140	----

Chain of Custody (COC) / Analytical Request Form

COC Number: 22 -

Page of

Environmental Division Waterloo

Work Order Reference

WT2215061

Canada Toll Free: 1 800 668 9878

Telephone : +1 519 886 6910

www.alsglobal.com

Report To	Contact and company name below will appear on the final report
Company:	WoodPLC
Contact:	Dale Klodnicki
Phone:	905-568-2929
	Company address below will appear on the final report
Street:	160 Traders Blvd East Suite 110
City/Province:	Mississauga, ON
Postal Code:	L4Z 3K7
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	
Contact:	

Reports / Recipients

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Merge QC/QCI Reports with COA ☑ YES ☐ NO ☐ N/A

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: Dale.Klodnicki@woodplc.com

Email 2: SAMANTHA.SHERMAN@WOODPLC.COM

Email 3:

Invoice Recipients

Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: apinvoice.canada@woodplc.com

Email 2:

Turnaround Time (TAT) Requested

☐ Routine [R] if received by 3pm M-F - no surcharges apply

☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minir

☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge mini

☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge mini

☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge mini

☐ Same day [E2] if received by 10am M-S - 200% rush surchar

Additional fees may apply to rush requests on weekend

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

Project Information

ALS Account # / Quote #:	Q86725 WT2022WOOD1000015
Job #:	OMEMA2002
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (ALS use only): WT2215061

ALS Contact: RICK HAWTHORNE Sampler: SS/AS/DL/MG

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Acidity, Alkalinity	Cyanides (Tot,Wad,Free)	Anions	Conductivity, PH	Hardness	Total Metals	Dissolved Metals	Low Level Mercury Total	Methyl Mercury	NH3, TP	TSS,TDS	Phyto Plankton (if needed)	Chlorophyll (if needed)	Radium 226 (if needed)	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	NDR-JacLk	16-Sep-22	18:50	Water	11	R	R	R	R	R	R	R	R	R	R	R	R	R				
	NDR-MelLk	16-Sep-22	14:20	Water	11	R	R	R	R	R	R	R	R	R	R	R	R	R				
	NDR-SutLk	16-Sep-22	17:30	Water	11	R	R	R	R	R	R	R	R	R	R	R	R	R				
	NDR-DavLk	16-Sep-22	11:45	Water	11	R	R	R	R	R	R	R	R	R	R	R	R	R				
	NDR-P-05	17-Sep-22	10:30	Water	9	R	R	R	R	R	R	R	R	R	R	R						
	NDR-S-01	18-Sep-22	13:30	Water	9	R	R	R	R	R	R	R	R	R	R	R						
	WBR-P-04	17-Sep-22	13:30	Water	9	R	R	R	R	R	R	R	R	R	R	R						
	WBR-P-03	17-Sep-22	16:00	Water	9	R	R	R	R	R	R	R	R	R	R	R						
	WBR-S-05	17-Sep-22	17:00	Water	9	R	R	R	R	R	R	R	R	R	R	R						

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☑ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				2.6	1.9		

SHIPMENT RELEASE (client use)

Released by:	DL	Date:	19-Sep	Time:	10:00

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by:	AP	Date:	20-Sep-22	Time:	9:00

FEB 2022 FRONT

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

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

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

CERTIFICATE OF ANALYSIS

Work Order	: **WT2218393**	Page	: 1 of 10
Client	: **WSP E&I Canada Limited**	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 2020 Winston Park Drive Suite 600 Mississauga ON Canada L6H 6X7	Address	: 60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2002	Date Samples Received	: 19-Oct-2022 11:55
PO	: ----	Date Analysis Commenced	: 19-Oct-2022
C-O-C number	: ----	Issue Date	: 18-Nov-2022 12:56
Sampler	: DL, RD		
Site	: ----		
Quote number	: OMEMA2002		
No. of samples received	: 8		
No. of samples analysed	: 8		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Greg Pokocky	Supervisor - Inorganic	Inorganics, Waterloo, Ontario
Jayden Piattelli	Analyst	Metals, Burnaby, British Columbia
Jon Fisher	Department Manager - Inorganics	Inorganics, Waterloo, Ontario
Jon Fisher	Department Manager - Inorganics	Metals, Waterloo, Ontario
Kinny Wu	Lab Analyst	Metals, Burnaby, British Columbia
Parnian Sane	Analyst	Metals, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances

LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	no unit
µg/L	micrograms per litre
µS/cm	microsiemens per centimetre
mg/L	milligrams per litre
ng/L	nanograms per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

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

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	*Description*
DLDS	*Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.*
DLM	*Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).*
DTC	*Dissolved concentration exceeds total. Results were confirmed by re-analysis.*

Analytical Results

Sub-Matrix: Surface Water
(Matrix: Water)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-P-03	NDR-P-02	NDR-P-01	NDR-S-04	NDR-P-04
					Client sampling date / time	13-Oct-2022 14:15	13-Oct-2022 11:15	13-Oct-2022 17:00	13-Oct-2022 10:30	13-Oct-2022 10:30
						WT2218393-001	WT2218393-002	WT2218393-003	WT2218393-004	WT2218393-005
						Result	Result	Result	Result	Result
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L		3.3	<2.0	9.1	5.0	3.9
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		43.6	96.6	11.0	33.8	87.3
conductivity	----	E100	1.0	µS/cm		83.0	180	42.5	88.4	165
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L		42.9	88.4	32.8	48.4	85.6
pH	----	E108	0.10	pH units		7.79	8.17	6.51	7.33	7.92
solids, total dissolved [TDS]	----	E162	10	mg/L		50 DLDS	93 DLDS	119 DLDS	125 DLDS	100 DLDS
solids, total suspended [TSS]	----	E160	3.0	mg/L		3.7	<3.0	3.7	<3.0	<3.0
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		0.0327	<0.0050	0.0366	0.0318	0.0108
chloride	16887-00-6	E235.Cl	0.50	mg/L		<0.50	<0.50	<0.50	5.82	<0.50
fluoride	16984-48-8	E235.F	0.020	mg/L		0.028	0.022	<0.020	<0.020	0.023
nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L		<0.020	<0.020	<0.020	0.022	<0.020
nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L		0.0060	0.0031	0.0078	0.0118	0.0042
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		<0.30	<0.30	<0.30	<0.30	<0.30
Cyanides										
cyanide, free	----	E339	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
cyanide, strong acid dissociable (total)	----	E333	0.0020	mg/L		<0.0020	<0.0020	0.0021	<0.0020	<0.0020
cyanide, weak acid dissociable	----	E336	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L		0.0191	0.0043	0.289	0.181	0.0374
antimony, total	7440-36-0	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
arsenic, total	7440-38-2	E420	0.00010	mg/L		0.00029	0.00050	0.00118	0.00098	0.00027
barium, total	7440-39-3	E420	0.00010	mg/L		0.00283	0.00207	0.00596	0.00622	0.00576
beryllium, total	7440-41-7	E420	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
bismuth, total	7440-69-9	E420	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, total	7440-42-8	E420	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
cadmium, total	7440-43-9	E420	0.0000050	mg/L		<0.0000050	<0.0000050	0.0000265	<0.0000200 DLM	<0.0000050
calcium, total	7440-70-2	E420	0.050	mg/L		12.3	27.9	9.57	13.8	25.6

Analytical Results

Sub-Matrix: **Surface Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-P-03	NDR-P-02	NDR-P-01	NDR-S-04	NDR-P-04
					Client sampling date / time	13-Oct-2022 14:15	13-Oct-2022 11:15	13-Oct-2022 17:00	13-Oct-2022 10:30	13-Oct-2022 10:30
						WT2218393-001	WT2218393-002	WT2218393-003	WT2218393-004	WT2218393-005
						Result	Result	Result	Result	Result
Total Metals										
cesium, total	7440-46-2	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
chromium, total	7440-47-3	E420	0.00050	mg/L		<0.00050	<0.00050	0.00081	0.00069	<0.00050
cobalt, total	7440-48-4	E420	0.00010	mg/L		<0.00010	<0.00010	0.00017	<0.00010	0.00011
copper, total	7440-50-8	E420	0.00050	mg/L		<0.00050	<0.00050	0.00072	0.00095	<0.00050
iron, total	7439-89-6	E420	0.010	mg/L		0.140	0.031	0.733	0.537	0.163
lead, total	7439-92-1	E420	0.000050	mg/L		<0.000050	<0.000050	0.000290	0.000151	<0.000050
lithium, total	7439-93-2	E420	0.0010	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
magnesium, total	7439-95-4	E420	0.0050	mg/L		2.94	4.90	2.24	3.60	4.93
manganese, total	7439-96-5	E420	0.00010	mg/L		0.0340	0.00745	0.0339	0.0349	0.0620
mercury, total	7439-97-6	E508-L	0.50	ng/L		1.16	0.62	4.11	5.06	0.73
molybdenum, total	7439-98-7	E420	0.000050	mg/L		<0.000050	0.000062	<0.000050	0.000062	<0.000050
nickel, total	7440-02-0	E420	0.00050	mg/L		<0.00050	<0.00050	0.00075	0.00072	<0.00050
phosphorus, total	7723-14-0	E420	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
potassium, total	7440-09-7	E420	0.050	mg/L		0.377	1.79	0.132	0.210	0.784
rubidium, total	7440-17-7	E420	0.00020	mg/L		0.00071	0.00145	0.00026	0.00064	0.00107
selenium, total	7782-49-2	E420	0.000050	mg/L		0.000062	<0.000050	0.000159	0.000166	<0.000050
silicon, total	7440-21-3	E420	0.10	mg/L		0.44	0.81	0.94	1.78	2.06
silver, total	7440-22-4	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, total	7440-23-5	E420	0.050	mg/L		0.517	0.413	0.521	4.29	0.569
strontium, total	7440-24-6	E420	0.00020	mg/L		0.0182	0.0234	0.0164	0.0238	0.0321
sulfur, total	7704-34-9	E420	0.50	mg/L		<0.50	<0.50	0.55	0.52	<0.50
tellurium, total	13494-80-9	E420	0.00020	mg/L		0.00032	<0.00020	<0.00020	<0.00020	<0.00020
thallium, total	7440-28-0	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
thorium, total	7440-29-1	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
tin, total	7440-31-5	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, total	7440-32-6	E420	0.00030	mg/L		<0.00030	<0.00030	0.00492	0.00344	0.00141
tungsten, total	7440-33-7	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
uranium, total	7440-61-1	E420	0.000010	mg/L		0.000010	<0.000010	0.000016	0.000034	<0.000010
vanadium, total	7440-62-2	E420	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
zinc, total	7440-66-6	E420	0.0030	mg/L		<0.0030	<0.0030	0.0098	0.0055	<0.0030

Analytical Results

Sub-Matrix: **Surface Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-P-03	NDR-P-02	NDR-P-01	NDR-S-04	NDR-P-04
					Client sampling date / time	13-Oct-2022 14:15	13-Oct-2022 11:15	13-Oct-2022 17:00	13-Oct-2022 10:30	13-Oct-2022 10:30
						WT2218393-001	WT2218393-002	WT2218393-003	WT2218393-004	WT2218393-005
						Result	Result	Result	Result	Result
Total Metals										
zirconium, total	7440-67-7	E420	0.00020	mg/L		<0.00020	<0.00020	0.00024	0.00027	<0.00020
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.0085	0.0013	0.243	0.243	0.0040
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00030	0.00053	0.00105	0.00096	0.00027
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.00256	0.00193	0.00454	0.00641	0.00556
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, dissolved	7440-42-8	E421	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		<0.0000050	<0.0000050	0.0000228	0.0000159	<0.0000050
calcium, dissolved	7440-70-2	E421	0.050	mg/L		12.4	27.5	9.67	13.9	26.3
cesium, dissolved	7440-46-2	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		<0.00050	<0.00050	0.00082	0.00069	<0.00050
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	0.00013	<0.00010
copper, dissolved	7440-50-8	E421	0.00020	mg/L		<0.00020	<0.00020	0.00057	0.00084	<0.00020
iron, dissolved	7439-89-6	E421	0.010	mg/L		0.042	0.013	0.613	0.592	0.048
lead, dissolved	7439-92-1	E421	0.000050	mg/L		<0.000050	<0.000050	0.000217	0.000191	<0.000050
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L		2.89	4.80	2.11	3.32	4.84
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.00140	0.00417	0.0202	0.0401	0.0409
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		<0.000050	0.000060	<0.000050	0.000052	<0.000050
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		<0.00050	<0.00050	0.00076	0.00070	<0.00050
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
potassium, dissolved	7440-09-7	E421	0.050	mg/L		0.363	1.85	0.081	0.222	0.735
rubidium, dissolved	7440-17-7	E421	0.00020	mg/L		0.00068	0.00148	<0.00020	0.00085	0.00108
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.000060	<0.000050	0.000172	0.000156	<0.000050
silicon, dissolved	7440-21-3	E421	0.050	mg/L		0.407	0.785	0.817	1.81	1.91
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, dissolved	7440-23-5	E421	0.050	mg/L		0.512	0.416	0.600	3.98	0.555
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		0.0176	0.0230	0.0168	0.0241	0.0318

Analytical Results

Sub-Matrix: **Surface Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-P-03	NDR-P-02	NDR-P-01	NDR-S-04	NDR-P-04
					Client sampling date / time	13-Oct-2022 14:15	13-Oct-2022 11:15	13-Oct-2022 17:00	13-Oct-2022 10:30	13-Oct-2022 10:30
						WT2218393-001	WT2218393-002	WT2218393-003	WT2218393-004	WT2218393-005
						Result	Result	Result	Result	Result
Dissolved Metals										
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		<0.50	<0.50	0.61	<0.50	<0.50
tellurium, dissolved	13494-80-9	E421	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
thorium, dissolved	7440-29-1	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		<0.00030	<0.00030	0.00326	0.00679 DTC	<0.00030
tungsten, dissolved	7440-33-7	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		<0.000010	<0.000010	0.000014	0.000035	<0.000010
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	0.00054	<0.00050
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		<0.0010	0.0022	0.0102	0.0052	<0.0010
zirconium, dissolved	7440-67-7	E421	0.00030	mg/L		<0.00030	<0.00030	<0.00030	0.00042	<0.00030
dissolved metals filtration location	----	EP421	-	-		Field	Field	Field	Field	Field
Speciated Metals										
methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L		0.000068	<0.000020	0.000057	0.000114	0.000025

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Surface Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-P-07	NDR-P-06	NDR-TRIB-02	----	----
					Client sampling date / time	15-Oct-2022 15:00	16-Oct-2022 12:00	16-Oct-2022 16:00	----	----
						WT2218393-006	WT2218393-007	WT2218393-008	--------	--------
						Result	Result	Result	----	----
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L		10.0	9.3	8.0	----	----
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		4.4	4.6	7.5	----	----
conductivity	----	E100	1.0	µS/cm		31.3	28.3	29.9	----	----
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L		21.9	19.6	21.9	----	----
pH	----	E108	0.10	pH units		5.63	5.77	6.31	----	----
solids, total dissolved [TDS]	----	E162	10	mg/L		87	84	76	----	----
solids, total suspended [TSS]	----	E160	3.0	mg/L		<3.0	<3.0	<3.0	----	----
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		0.0182	0.0183	0.0160	----	----
chloride	16887-00-6	E235.Cl	0.50	mg/L		<0.50	<0.50	<0.50	----	----
fluoride	16984-48-8	E235.F	0.020	mg/L		<0.020	<0.020	<0.020	----	----
nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L		<0.020	<0.020	0.055	----	----
nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L		<0.010	<0.010	<0.010	----	----
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L		0.0047	0.0742 DLM	0.0083	----	----
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		<0.30	<0.30	<0.30	----	----
Cyanides										
cyanide, free	----	E339	0.0020	mg/L		<0.0020	<0.0020	<0.0020	----	----
cyanide, strong acid dissociable (total)	----	E333	0.0020	mg/L		<0.0020	<0.0020	<0.0020	----	----
cyanide, weak acid dissociable	----	E336	0.0020	mg/L		<0.0020	<0.0020	<0.0020	----	----
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L		0.0965	0.166	0.127	----	----
antimony, total	7440-36-0	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
arsenic, total	7440-38-2	E420	0.00010	mg/L		0.00091	0.00070	0.00062	----	----
barium, total	7440-39-3	E420	0.00010	mg/L		0.00327	0.00393	0.00345	----	----
beryllium, total	7440-41-7	E420	0.000020	mg/L		<0.000020	<0.000020	<0.000020	----	----
bismuth, total	7440-69-9	E420	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
boron, total	7440-42-8	E420	0.010	mg/L		<0.010	<0.010	<0.010	----	----
cadmium, total	7440-43-9	E420	0.0000050	mg/L		0.0000255	0.0000222	0.0000158	----	----
calcium, total	7440-70-2	E420	0.050	mg/L		5.72	5.49	5.70	----	----
cesium, total	7440-46-2	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----

Analytical Results

Sub-Matrix: **Surface Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-P-07	NDR-P-06	NDR-TRIB-02	----	----
					Client sampling date / time	15-Oct-2022 15:00	16-Oct-2022 12:00	16-Oct-2022 16:00	----	----
						WT2218393-006	WT2218393-007	WT2218393-008	--------	--------
						Result	Result	Result	----	----
Total Metals										
chromium, total	7440-47-3	E420	0.00050	mg/L		<0.00050	0.00052	<0.00050	----	----
cobalt, total	7440-48-4	E420	0.00010	mg/L		<0.00010	0.00018	<0.00010	----	----
copper, total	7440-50-8	E420	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
iron, total	7439-89-6	E420	0.010	mg/L		0.352	0.510	0.424	----	----
lead, total	7439-92-1	E420	0.000050	mg/L		0.000562	0.000367	0.000238	----	----
lithium, total	7439-93-2	E420	0.0010	mg/L		<0.0010	<0.0010	<0.0010	----	----
magnesium, total	7439-95-4	E420	0.0050	mg/L		1.88	1.51	1.66	----	----
manganese, total	7439-96-5	E420	0.00010	mg/L		0.0290	0.0496	0.00882	----	----
mercury, total	7439-97-6	E508-L	0.50	ng/L		4.14	2.60	3.23	----	----
molybdenum, total	7439-98-7	E420	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
nickel, total	7440-02-0	E420	0.00050	mg/L		<0.00050	0.00050	<0.00050	----	----
phosphorus, total	7723-14-0	E420	0.050	mg/L		<0.050	<0.050	<0.050	----	----
potassium, total	7440-09-7	E420	0.050	mg/L		<0.050	<0.050	0.285	----	----
rubidium, total	7440-17-7	E420	0.00020	mg/L		<0.00020	<0.00020	0.00106	----	----
selenium, total	7782-49-2	E420	0.000050	mg/L		0.000118	0.000103	0.000100	----	----
silicon, total	7440-21-3	E420	0.10	mg/L		1.15	0.81	1.15	----	----
silver, total	7440-22-4	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
sodium, total	7440-23-5	E420	0.050	mg/L		0.502	0.441	0.435	----	----
strontium, total	7440-24-6	E420	0.00020	mg/L		0.00971	0.0102	0.0110	----	----
sulfur, total	7704-34-9	E420	0.50	mg/L		<0.50	<0.50	<0.50	----	----
tellurium, total	13494-80-9	E420	0.00020	mg/L		<0.00020	<0.00020	<0.00020	----	----
thallium, total	7440-28-0	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
thorium, total	7440-29-1	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
tin, total	7440-31-5	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
titanium, total	7440-32-6	E420	0.00030	mg/L		0.00113	0.00329	0.00342	----	----
tungsten, total	7440-33-7	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
uranium, total	7440-61-1	E420	0.000010	mg/L		<0.000010	0.000016	0.000016	----	----
vanadium, total	7440-62-2	E420	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
zinc, total	7440-66-6	E420	0.0030	mg/L		0.0050	0.0094	0.0057	----	----
zirconium, total	7440-67-7	E420	0.00020	mg/L		<0.00020	<0.00020	<0.00020	----	----

Analytical Results

Sub-Matrix: **Surface Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-P-07	NDR-P-06	NDR-TRIB-02	----	----
					Client sampling date / time	15-Oct-2022 15:00	16-Oct-2022 12:00	16-Oct-2022 16:00	----	----
						WT2218393-006	WT2218393-007	WT2218393-008	--------	--------
						Result	Result	Result	----	----
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.0862	0.153	0.128	----	----
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00090	0.00066	0.00060	----	----
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.00332	0.00388	0.00363	----	----
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L		<0.000020	<0.000020	<0.000020	----	----
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
boron, dissolved	7440-42-8	E421	0.010	mg/L		<0.010	<0.010	<0.010	----	----
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		0.0000220	0.0000210	0.0000184	----	----
calcium, dissolved	7440-70-2	E421	0.050	mg/L		5.81	5.52	5.90	----	----
cesium, dissolved	7440-46-2	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		<0.00010	0.00016	<0.00010	----	----
copper, dissolved	7440-50-8	E421	0.00020	mg/L		0.00037	0.00027	0.00048	----	----
iron, dissolved	7439-89-6	E421	0.010	mg/L		0.333	0.454	0.442	----	----
lead, dissolved	7439-92-1	E421	0.000050	mg/L		0.000536	0.000333	0.000229	----	----
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		<0.0010	<0.0010	<0.0010	----	----
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L		1.80	1.42	1.74	----	----
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.0294	0.0469	0.00862	----	----
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	<0.050	----	----
potassium, dissolved	7440-09-7	E421	0.050	mg/L		<0.050	<0.050	0.284	----	----
rubidium, dissolved	7440-17-7	E421	0.00020	mg/L		<0.00020	<0.00020	0.00109	----	----
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.000147	0.000126	0.000126	----	----
silicon, dissolved	7440-21-3	E421	0.050	mg/L		1.07	0.749	1.13	----	----
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
sodium, dissolved	7440-23-5	E421	0.050	mg/L		0.502	0.427	0.463	----	----
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		0.00974	0.0103	0.0112	----	----
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		<0.50	<0.50	<0.50	----	----
tellurium, dissolved	13494-80-9	E421	0.00020	mg/L		<0.00020	<0.00020	<0.00020	----	----

Analytical Results

Sub-Matrix: Surface Water (Matrix: Water)					Client sample ID	NDR-P-07	NDR-P-06	NDR-TRIB-02	----	----
					Client sampling date / time	15-Oct-2022 15:00	16-Oct-2022 12:00	16-Oct-2022 16:00	----	----
Analyte	CAS Number	Method	LOR	Unit		WT2218393-006	WT2218393-007	WT2218393-008	--------	--------
						Result	Result	Result	----	----
Dissolved Metals										
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
thorium, dissolved	7440-29-1	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		0.00089	0.00276	0.00345	----	----
tungsten, dissolved	7440-33-7	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		<0.000010	0.000013	0.000016	----	----
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		0.0058	0.0101	0.0076	----	----
zirconium, dissolved	7440-67-7	E421	0.00030	mg/L		<0.00030	<0.00030	<0.00030	----	----
dissolved metals filtration location	----	EP421	-	-		Field	Field	Laboratory	----	----
Speciated Metals										
methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L		0.000142	0.000052	0.000089	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2218393**	Page	: 1 of 28
Client	: **WSP E&I Canada Limited**	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 2020 Winston Park Drive Suite 600 Mississauga ON Canada L6H 6X7	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2002	Date Samples Received	: 19-Oct-2022 11:55
PO	: ----	Issue Date	: 18-Nov-2022 12:54
C-O-C number	: ----		
Sampler	: DL, RD		
Site	: ----		
Quote number	: OMEMA2002		
No. of samples received	: 8		
No. of samples analysed	: 8		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- Matrix Spike outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Matrix Spike (MS) Recoveries								
Dissolved Metals	Anonymous	Anonymous	silver, dissolved	7440-22-4	E421	52.8 % MS-Ag	70.0-130%	Recovery less than lower data quality objective
Dissolved Metals	Anonymous	Anonymous	tellurium, dissolved	13494-80-9	E421	68.0 % MES	70.0-130%	Recovery less than lower data quality objective

Result Qualifiers

Qualifier	*Description*
MES	*Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).*
MS-Ag	*MS-Ag: Matrix Spike recovery for silver was marginally below DQO (40 to <60%) due to its instability in the sample matrix. Silver was not detected. Reported result (< LOR) is reliable*

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] NDR-P-06	E298	16-Oct-2022	24-Oct-2022	----	----		26-Oct-2022	28 days	10 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] NDR-P-07	E298	15-Oct-2022	24-Oct-2022	----	----		26-Oct-2022	28 days	11 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] NDR-P-01	E298	13-Oct-2022	24-Oct-2022	----	----		26-Oct-2022	28 days	13 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] NDR-P-02	E298	13-Oct-2022	24-Oct-2022	----	----		26-Oct-2022	28 days	13 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] NDR-P-03	E298	13-Oct-2022	24-Oct-2022	----	----		26-Oct-2022	28 days	13 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] NDR-P-04	E298	13-Oct-2022	24-Oct-2022	----	----		26-Oct-2022	28 days	14 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] NDR-S-04	E298	13-Oct-2022	24-Oct-2022	----	----		26-Oct-2022	28 days	14 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
HDPE [ON MECP] NDR-TRIB-02	E298	16-Oct-2022	21-Oct-2022	3 days	5 days	× EHTL	24-Oct-2022	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-P-06	E235.Cl	16-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-TRIB-02	E235.Cl	16-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-P-07	E235.Cl	15-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-P-01	E235.Cl	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-P-02	E235.Cl	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-P-03	E235.Cl	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-P-04	E235.Cl	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-S-04	E235.Cl	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-P-06	E235.F	16-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	4 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-TRIB-02	E235.F	16-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	4 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-P-07	E235.F	15-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	5 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-P-01	E235.F	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-P-02	E235.F	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-P-03	E235.F	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-P-04	E235.F	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-S-04	E235.F	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-P-06	E235.NO3	16-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	7 days	4 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-TRIB-02	E235.NO3	16-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	7 days	4 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-P-07	E235.NO3	15-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	7 days	5 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-P-01	E235.NO3	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-P-02	E235.NO3	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-P-03	E235.NO3	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-P-04	E235.NO3	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-S-04	E235.NO3	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	7 days	7 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-P-06	E235.NO2	16-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	7 days	4 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-TRIB-02	E235.NO2	16-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	7 days	4 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-P-07	E235.NO2	15-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	7 days	5 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-P-01	E235.NO2	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	7 days	7 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-P-02	E235.NO2	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	7 days	7 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-P-03	E235.NO2	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	7 days	7 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-P-04	E235.NO2	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	7 days	7 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-S-04	E235.NO2	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	7 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDR-P-06	E235.SO4	16-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDR-TRIB-02	E235.SO4	16-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDR-P-07	E235.SO4	15-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDR-P-01	E235.SO4	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDR-P-02	E235.SO4	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDR-P-03	E235.SO4	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDR-P-04	E235.SO4	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDR-S-04	E235.SO4	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP] NDR-P-06	E372-U	16-Oct-2022	25-Oct-2022	----	----		26-Oct-2022	28 days	10 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP] NDR-P-07	E372-U	15-Oct-2022	25-Oct-2022	----	----		26-Oct-2022	28 days	11 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP] NDR-P-01	E372-U	13-Oct-2022	25-Oct-2022	----	----		26-Oct-2022	28 days	13 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP] NDR-P-02	E372-U	13-Oct-2022	25-Oct-2022	----	----		26-Oct-2022	28 days	13 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP] NDR-P-03	E372-U	13-Oct-2022	25-Oct-2022	----	----		26-Oct-2022	28 days	13 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP] NDR-P-04	E372-U	13-Oct-2022	25-Oct-2022	----	----		26-Oct-2022	28 days	13 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP] NDR-S-04	E372-U	13-Oct-2022	25-Oct-2022	----	----		26-Oct-2022	28 days	13 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
HDPE [ON MECP] NDR-TRIB-02	E372-U	16-Oct-2022	24-Oct-2022	3 days	8 days	× EHTL	25-Oct-2022	28 days	1 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDR-P-06	E339	16-Oct-2022	26-Oct-2022	----	----		26-Oct-2022	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDR-TRIB-02	E339	16-Oct-2022	26-Oct-2022	----	----		26-Oct-2022	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDR-P-07	E339	15-Oct-2022	26-Oct-2022	----	----		26-Oct-2022	14 days	11 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDR-P-01	E339	13-Oct-2022	26-Oct-2022	----	----		26-Oct-2022	14 days	13 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDR-P-02	E339	13-Oct-2022	26-Oct-2022	----	----		26-Oct-2022	14 days	13 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDR-P-03	E339	13-Oct-2022	26-Oct-2022	----	----		26-Oct-2022	14 days	13 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDR-P-04	E339	13-Oct-2022	26-Oct-2022	----	----		26-Oct-2022	14 days	13 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDR-S-04	E339	13-Oct-2022	26-Oct-2022	----	----		26-Oct-2022	14 days	13 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDR-P-06	E333	16-Oct-2022	26-Oct-2022	----	----		26-Oct-2022	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDR-TRIB-02	E333	16-Oct-2022	26-Oct-2022	----	----		26-Oct-2022	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDR-P-07	E333	15-Oct-2022	26-Oct-2022	----	----		26-Oct-2022	14 days	11 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDR-P-01	E333	13-Oct-2022	26-Oct-2022	----	----		26-Oct-2022	14 days	13 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDR-P-02	E333	13-Oct-2022	26-Oct-2022	----	----		26-Oct-2022	14 days	13 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDR-P-03	E333	13-Oct-2022	26-Oct-2022	----	----		26-Oct-2022	14 days	13 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDR-P-04	E333	13-Oct-2022	26-Oct-2022	----	----		26-Oct-2022	14 days	13 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDR-S-04	E333	13-Oct-2022	26-Oct-2022	----	----		26-Oct-2022	14 days	13 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDR-P-06	E336	16-Oct-2022	26-Oct-2022	----	----		26-Oct-2022	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDR-TRIB-02	E336	16-Oct-2022	26-Oct-2022	----	----		26-Oct-2022	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDR-P-07	E336	15-Oct-2022	26-Oct-2022	----	----		26-Oct-2022	14 days	11 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDR-P-01	E336	13-Oct-2022	26-Oct-2022	----	----		26-Oct-2022	14 days	13 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDR-P-02	E336	13-Oct-2022	26-Oct-2022	----	----		26-Oct-2022	14 days	13 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDR-P-03	E336	13-Oct-2022	26-Oct-2022	----	----		26-Oct-2022	14 days	13 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDR-P-04	E336	13-Oct-2022	26-Oct-2022	----	----		26-Oct-2022	14 days	13 days	✓

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDR-S-04	E336	13-Oct-2022	26-Oct-2022	----	----		26-Oct-2022	14 days	13 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE [ON MECP]										
NDR-TRIB-02	E421	16-Oct-2022	21-Oct-2022	0.03 hrs	3 hrs	✖ EHTR-FM	21-Oct-2022	-120.75 hrs	0.03 hrs	✖ EHTR-FM
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
NDR-P-06	E421	16-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	180 days	4 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
NDR-P-07	E421	15-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	180 days	5 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
NDR-P-01	E421	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
NDR-P-02	E421	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
NDR-P-03	E421	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
NDR-P-04	E421	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
NDR-S-04	E421	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	180 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-P-06	E283	16-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	14 days	4 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-TRIB-02	E283	16-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	14 days	4 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-P-07	E283	15-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	14 days	5 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-P-01	E283	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	14 days	7 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-P-02	E283	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	14 days	7 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-P-03	E283	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	14 days	7 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-P-04	E283	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	14 days	7 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-S-04	E283	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-P-06	E290	16-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	14 days	4 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-TRIB-02	E290	16-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	14 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-P-07	E290	15-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-P-01	E290	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-P-02	E290	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-P-03	E290	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-P-04	E290	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-S-04	E290	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	14 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-P-06	E100	16-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	4 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-TRIB-02	E100	16-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	4 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-P-07	E100	15-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-P-01	E100	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-P-02	E100	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-P-03	E100	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-P-04	E100	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-S-04	E100	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	28 days	7 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-P-06	E108	16-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	14 days	4 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-TRIB-02	E108	16-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	14 days	4 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-P-07	E108	15-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	14 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-P-01	E108	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	14 days	7 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-P-02	E108	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	14 days	7 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-P-03	E108	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	14 days	7 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-P-04	E108	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	14 days	7 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-S-04	E108	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	14 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-P-06	E162	16-Oct-2022	----	----	----		19-Oct-2022	7 days	3 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-TRIB-02	E162	16-Oct-2022	----	----	----		19-Oct-2022	7 days	3 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-P-07	E162	15-Oct-2022	----	----	----		19-Oct-2022	7 days	4 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-P-01	E162	13-Oct-2022	----	----	----		19-Oct-2022	7 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-P-02	E162	13-Oct-2022	----	----	----		19-Oct-2022	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-P-03	E162	13-Oct-2022	----	----	----		19-Oct-2022	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-P-04	E162	13-Oct-2022	----	----	----		19-Oct-2022	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-S-04	E162	13-Oct-2022	----	----	----		19-Oct-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-P-06	E160	16-Oct-2022	----	----	----		19-Oct-2022	7 days	3 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-TRIB-02	E160	16-Oct-2022	----	----	----		19-Oct-2022	7 days	3 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-P-07	E160	15-Oct-2022	----	----	----		19-Oct-2022	7 days	4 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-P-01	E160	13-Oct-2022	----	----	----		19-Oct-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-P-02	E160	13-Oct-2022	----	----	----		19-Oct-2022	7 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-P-03	E160	13-Oct-2022	----	----	----		19-Oct-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-P-04	E160	13-Oct-2022	----	----	----		19-Oct-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-S-04	E160	13-Oct-2022	----	----	----		19-Oct-2022	7 days	6 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid) NDR-P-06	E536	16-Oct-2022	03-Nov-2022	----	----		07-Nov-2022	180 days	22 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid) NDR-TRIB-02	E536	16-Oct-2022	03-Nov-2022	----	----		07-Nov-2022	180 days	22 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid) NDR-P-07	E536	15-Oct-2022	03-Nov-2022	----	----		07-Nov-2022	180 days	23 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid) NDR-P-01	E536	13-Oct-2022	03-Nov-2022	----	----		07-Nov-2022	180 days	25 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid) NDR-P-02	E536	13-Oct-2022	03-Nov-2022	----	----		07-Nov-2022	180 days	25 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid) NDR-P-03	E536	13-Oct-2022	03-Nov-2022	----	----		07-Nov-2022	180 days	25 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid) NDR-P-04	E536	13-Oct-2022	03-Nov-2022	----	----		07-Nov-2022	180 days	25 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid) NDR-S-04	E536	13-Oct-2022	03-Nov-2022	----	----		07-Nov-2022	180 days	25 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved) NDR-P-06	E508-L	16-Oct-2022	07-Nov-2022	28 days	22 days	✓	07-Nov-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved) NDR-TRIB-02	E508-L	16-Oct-2022	07-Nov-2022	28 days	22 days	✓	07-Nov-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved) NDR-P-07	E508-L	15-Oct-2022	07-Nov-2022	28 days	23 days	✓	07-Nov-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved) NDR-P-01	E508-L	13-Oct-2022	07-Nov-2022	28 days	25 days	✓	07-Nov-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved) NDR-P-02	E508-L	13-Oct-2022	07-Nov-2022	28 days	25 days	✓	07-Nov-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved) NDR-P-03	E508-L	13-Oct-2022	07-Nov-2022	28 days	25 days	✓	07-Nov-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved) NDR-P-04	E508-L	13-Oct-2022	07-Nov-2022	28 days	25 days	✓	07-Nov-2022	28 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved) NDR-S-04	E508-L	13-Oct-2022	07-Nov-2022	28 days	25 days	✓	07-Nov-2022	28 days	0 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDR-P-06	E420	16-Oct-2022	20-Oct-2022	----	----		21-Oct-2022	180 days	5 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDR-TRIB-02	E420	16-Oct-2022	20-Oct-2022	----	----		21-Oct-2022	180 days	5 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDR-P-07	E420	15-Oct-2022	20-Oct-2022	----	----		21-Oct-2022	180 days	6 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDR-P-02	E420	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	180 days	7 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDR-P-03	E420	13-Oct-2022	20-Oct-2022	----	----		20-Oct-2022	180 days	7 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDR-P-01	E420	13-Oct-2022	20-Oct-2022	----	----		21-Oct-2022	180 days	8 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDR-P-04	E420	13-Oct-2022	20-Oct-2022	----	----		21-Oct-2022	180 days	8 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDR-S-04	E420	13-Oct-2022	20-Oct-2022	----	----		21-Oct-2022	180 days	8 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	705132	1	8	12.5	5.0	✓
Alkalinity Species by Titration	E290	705131	1	14	7.1	5.0	✓
Ammonia by Fluorescence	E298	708262	2	33	6.0	5.0	✓
Chloride in Water by IC	E235.Cl	705133	1	16	6.2	5.0	✓
Conductivity in Water	E100	705130	1	9	11.1	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	705191	2	40	5.0	5.0	✓
Fluoride in Water by IC	E235.F	705135	1	13	7.6	5.0	✓
Free Cyanide	E339	715777	1	8	12.5	5.0	✓
Nitrate in Water by IC	E235.NO3	705136	1	14	7.1	5.0	✓
Nitrite in Water by IC	E235.NO2	705137	1	14	7.1	5.0	✓
pH by Meter	E108	705129	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	705134	1	14	7.1	5.0	✓
TDS by Gravimetry	E162	703780	1	20	5.0	5.0	✓
Total Cyanide	E333	715779	1	8	12.5	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	733430	1	13	7.6	5.0	✓
Total metals in Water by CRC ICPMS	E420	705010	2	40	5.0	5.0	✓
Total Methylmercury in Water by GCAFS	E536	728312	1	19	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	708261	2	34	5.8	5.0	✓
TSS by Gravimetry	E160	703815	1	13	7.6	4.7	✓
WAD Cyanide	E336	715778	1	8	12.5	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	705132	1	8	12.5	5.0	✓
Alkalinity Species by Titration	E290	705131	1	14	7.1	5.0	✓
Ammonia by Fluorescence	E298	708262	2	33	6.0	5.0	✓
Chloride in Water by IC	E235.Cl	705133	1	16	6.2	5.0	✓
Conductivity in Water	E100	705130	1	9	11.1	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	705191	2	40	5.0	5.0	✓
Fluoride in Water by IC	E235.F	705135	1	13	7.6	5.0	✓
Free Cyanide	E339	715777	1	8	12.5	5.0	✓
Nitrate in Water by IC	E235.NO3	705136	1	14	7.1	5.0	✓
Nitrite in Water by IC	E235.NO2	705137	1	14	7.1	5.0	✓
pH by Meter	E108	705129	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	705134	1	14	7.1	5.0	✓
TDS by Gravimetry	E162	703780	1	20	5.0	5.0	✓
Total Cyanide	E333	715779	1	8	12.5	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	733430	1	13	7.6	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Total metals in Water by CRC ICPMS	E420	705010	2	40	5.0	5.0	✓
Total Methylmercury in Water by GCAFS	E536	728312	2	19	10.5	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	708261	2	34	5.8	5.0	✓
TSS by Gravimetry	E160	703815	1	13	7.6	4.7	✓
WAD Cyanide	E336	715778	1	8	12.5	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	705132	1	8	12.5	5.0	✓
Alkalinity Species by Titration	E290	705131	1	14	7.1	5.0	✓
Ammonia by Fluorescence	E298	708262	2	33	6.0	5.0	✓
Chloride in Water by IC	E235.Cl	705133	1	16	6.2	5.0	✓
Conductivity in Water	E100	705130	1	9	11.1	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	705191	2	40	5.0	5.0	✓
Fluoride in Water by IC	E235.F	705135	1	13	7.6	5.0	✓
Free Cyanide	E339	715777	1	8	12.5	5.0	✓
Nitrate in Water by IC	E235.NO3	705136	1	14	7.1	5.0	✓
Nitrite in Water by IC	E235.NO2	705137	1	14	7.1	5.0	✓
Sulfate in Water by IC	E235.SO4	705134	1	14	7.1	5.0	✓
TDS by Gravimetry	E162	703780	1	20	5.0	5.0	✓
Total Cyanide	E333	715779	1	8	12.5	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	733430	1	13	7.6	5.0	✓
Total metals in Water by CRC ICPMS	E420	705010	2	40	5.0	5.0	✓
Total Methylmercury in Water by GCAFS	E536	728312	2	19	10.5	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	708261	2	34	5.8	5.0	✓
TSS by Gravimetry	E160	703815	1	13	7.6	4.7	✓
WAD Cyanide	E336	715778	1	8	12.5	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	708262	2	33	6.0	5.0	✓
Chloride in Water by IC	E235.Cl	705133	1	16	6.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	705191	2	40	5.0	5.0	✓
Fluoride in Water by IC	E235.F	705135	1	13	7.6	5.0	✓
Free Cyanide	E339	715777	1	8	12.5	5.0	✓
Nitrate in Water by IC	E235.NO3	705136	1	14	7.1	5.0	✓
Nitrite in Water by IC	E235.NO2	705137	1	14	7.1	5.0	✓
Sulfate in Water by IC	E235.SO4	705134	1	14	7.1	5.0	✓
Total Cyanide	E333	715779	1	8	12.5	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	733430	1	13	7.6	5.0	✓
Total metals in Water by CRC ICPMS	E420	705010	2	40	5.0	5.0	✓
Total Methylmercury in Water by GCAFS	E536	728312	1	19	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	708261	2	34	5.8	5.0	✓

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
WAD Cyanide	E336	715778	1	8	12.5	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Waterloo - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Waterloo - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry	E160 Waterloo - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Waterloo - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Chloride in Water by IC	E235.Cl Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC	E235.NO2 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC	E235.NO3 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
	Waterloo - Environmental			
Alkalinity Species by Titration	E290 Waterloo - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Waterloo - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Cyanide	E333 Waterloo - Environmental	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336 Waterloo - Environmental	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339 Waterloo - Environmental	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Waterloo - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total metals in Water by CRC ICPMS	E420 Waterloo - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 Waterloo - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Methylmercury in Water by GCAFS	E536 Vancouver - Environmental	Water	EPA 1630 (mod)	This method follows Method 1630 of the US EPA. Samples are distilled under an inert gas flow to isolate methylmercury and minimize matrix interferences. The distillate is analyzed by aqueous phase ethylation, purge and trap, desorption and GC separation. The separated species are then pyrolized to elemental Hg and quantified by cold vapour atomic flourescence spectroscopy. Results are reported "as MeHg".
Dissolved Hardness (Calculated)	EC100 Waterloo - Environmental	Water	APHA 2340B	“Hardness (as CaCO3), dissolved” is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. “Total Hardness” refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Waterloo - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for Total Phosphorus in water	EP372 Waterloo - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Waterloo - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Total Methylmercury Water Preparation	EP536 Vancouver - Environmental	Water	EPA 1630	This method follows Method 1630 of the US EPA. Samples are distilled under an inert gas flow to isolate methylmercury and minimize matrix interferences. The distillate is analyzed by aqueous phase ethylation, purge and trap, desorption and GC separation. The separated species are then pyrolized to elemental Hg and quantified by cold vapour atomic flourescence spectroscopy. Results are reported "as MeHg".

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QUALITY CONTROL REPORT

Work Order	: **WT2218393**	Page	: 1 of 26
Client	: WSP E&I Canada Limited	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 2020 Winston Park Drive Suite 600 Mississauga ON Canada L6H 6X7	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	:	Telephone	: +1 519 886 6910
Project	: OMEMA2002	Date Samples Received	: 19-Oct-2022 11:55
PO	: ----	Date Analysis Commenced	: 19-Oct-2022
C-O-C number	: ----	Issue Date	: 18-Nov-2022 12:54
Sampler	: DL, RD 905 568 2929, Ext. 4140		
Site	: ----		
Quote number	: OMEMA2002		
No. of samples received	: 8		
No. of samples analysed	: 8		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Greg Pokocky	Supervisor - Inorganic	Waterloo Inorganics, Waterloo, Ontario
Jayden Piattelli	Analyst	Vancouver Metals, Burnaby, British Columbia
Jon Fisher	Department Manager - Inorganics	Waterloo Inorganics, Waterloo, Ontario
Jon Fisher	Department Manager - Inorganics	Waterloo Metals, Waterloo, Ontario
Kinny Wu	Lab Analyst	Vancouver Metals, Burnaby, British Columbia
Parnian Sane	Analyst	Vancouver Metals, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 703780)											
WT2218393-001	NDR-P-03	solids, total dissolved [TDS]	----	E162	13	mg/L	50	56	7	Diff <2x LOR	----
Physical Tests (QC Lot: 703815)											
WT2218373-001	Anonymous	solids, total suspended [TSS]	----	E160	7.5	mg/L	137	151	9.70%	20%	----
Physical Tests (QC Lot: 705129)											
WT2218393-001	NDR-P-03	pH	----	E108	0.10	pH units	7.79	7.82	0.384%	4%	----
Physical Tests (QC Lot: 705130)											
WT2218393-001	NDR-P-03	conductivity	----	E100	1.0	µS/cm	83.0	84.0	1.20%	10%	----
Physical Tests (QC Lot: 705131)											
WT2218393-001	NDR-P-03	alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	43.6	43.8	0.366%	20%	----
Physical Tests (QC Lot: 705132)											
WT2218393-002	NDR-P-02	acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	2.6	0.6	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 705133)											
WT2218148-001	Anonymous	chloride	16887-00-6	E235.Cl	0.50	mg/L	1.35	1.32	0.03	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 705134)											
WT2218148-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	402	397	1.34%	20%	----
Anions and Nutrients (QC Lot: 705135)											
WT2218148-001	Anonymous	fluoride	16984-48-8	E235.F	0.020	mg/L	0.708	0.715	1.03%	20%	----
Anions and Nutrients (QC Lot: 705136)											
WT2218148-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 705137)											
WT2218148-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 708261)											
WT2218064-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0099	0.0090	0.0009	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 708262)											
WT2218088-008	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0143	0.0160	0.0017	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 712183)											
WT2218368-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.162	0.179	9.80%	20%	----
Anions and Nutrients (QC Lot: 712184)											
WT2218393-001	NDR-P-03	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0327	0.0324	0.0003	Diff <2x LOR	----
Cyanides (QC Lot: 715777)											

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Cyanides (QC Lot: 715777) - continued											
WT2218393-001	NDR-P-03	cyanide, free	----	E339	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Cyanides (QC Lot: 715778)											
WT2218393-001	NDR-P-03	cyanide, weak acid dissociable	----	E336	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Cyanides (QC Lot: 715779)											
WT2218393-001	NDR-P-03	cyanide, strong acid dissociable (total)	----	E333	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Total Metals (QC Lot: 705010)											
WT2218223-001	Anonymous	aluminum, total	7429-90-5	E420	0.0300	mg/L	<0.0300	<0.0300	0	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00100	mg/L	0.0536	0.0544	1.51%	20%	----
		beryllium, total	7440-41-7	E420	0.000200	mg/L	<0.000200	<0.000200	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000500	mg/L	<0.000500	<0.000500	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.100	mg/L	<0.100	<0.100	0	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000500	mg/L	<0.0000500	<0.0000500	0	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.500	mg/L	109	110	1.02%	20%	----
		cesium, total	7440-46-2	E420	0.000100	mg/L	0.000639	0.000654	0.000015	Diff <2x LOR	----
		chromium, total	7440-47-3	E420	0.00500	mg/L	<0.00500	<0.00500	0	Diff <2x LOR	----
		cobalt, total	7440-48-4	E420	0.00100	mg/L	<0.00090	<0.00100	0.00010	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00500	mg/L	<0.00100	<0.00500	0.00400	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.100	mg/L	<0.100	<0.100	0	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000500	mg/L	<0.000500	<0.000500	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0100	mg/L	0.0406	0.0420	0.0013	Diff <2x LOR	----
		magnesium, total	7439-95-4	E420	0.0500	mg/L	53.5	53.8	0.566%	20%	----
		manganese, total	7439-96-5	E420	0.00100	mg/L	0.00535	0.00513	0.00022	Diff <2x LOR	----
		molybdenum, total	7439-98-7	E420	0.000500	mg/L	<0.000500	<0.000500	0	Diff <2x LOR	----
		nickel, total	7440-02-0	E420	0.00500	mg/L	<0.00500	<0.00500	0	Diff <2x LOR	----
		phosphorus, total	7723-14-0	E420	0.500	mg/L	<0.500	<0.500	0	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.500	mg/L	25.4	25.2	0.974%	20%	----
		rubidium, total	7440-17-7	E420	0.00200	mg/L	0.0668	0.0658	1.45%	20%	----
		selenium, total	7782-49-2	E420	0.000500	mg/L	<0.000500	<0.000500	0	Diff <2x LOR	----
		silicon, total	7440-21-3	E420	1.00	mg/L	20.8	21.0	0.664%	20%	----
		silver, total	7440-22-4	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.500	mg/L	924	919	0.602%	20%	----
		strontium, total	7440-24-6	E420	0.00200	mg/L	2.25	2.33	3.50%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 705010) - continued											
WT2218223-001	Anonymous	sulfur, total	7704-34-9	E420	5.00	mg/L	18.4	19.0	0.58	Diff <2x LOR	----
		tellurium, total	13494-80-9	E420	0.00200	mg/L	<0.00200	<0.00200	0	Diff <2x LOR	----
		thallium, total	7440-28-0	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		thorium, total	7440-29-1	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00300	mg/L	<0.00300	<0.00300	0	Diff <2x LOR	----
		tungsten, total	7440-33-7	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		vanadium, total	7440-62-2	E420	0.00500	mg/L	<0.00500	<0.00500	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0300	mg/L	<0.0300	<0.0300	0	Diff <2x LOR	----
		zirconium, total	7440-67-7	E420	0.00200	mg/L	<0.00200	<0.00200	0	Diff <2x LOR	----
Total Metals (QC Lot: 705052)											
WT2218296-001	Anonymous	aluminum, total	7429-90-5	E420	0.0300	mg/L	0.143	0.149	0.0065	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00100	mg/L	0.0286	0.0285	0.300%	20%	----
		beryllium, total	7440-41-7	E420	0.000200	mg/L	<0.000200	<0.000200	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000500	mg/L	0.000534	<0.000500	0.000034	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.100	mg/L	0.180	0.187	0.008	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000500	mg/L	<0.0000500	<0.0000500	0	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.500	mg/L	38.4	39.8	3.66%	20%	----
		cesium, total	7440-46-2	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		chromium, total	7440-47-3	E420	0.00500	mg/L	<0.00500	<0.00500	0	Diff <2x LOR	----
		cobalt, total	7440-48-4	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00500	mg/L	0.132	0.136	2.94%	20%	----
		iron, total	7439-89-6	E420	0.100	mg/L	0.879	0.875	0.004	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000500	mg/L	0.000584	0.000638	0.000054	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0100	mg/L	<0.0100	<0.0100	0	Diff <2x LOR	----
		magnesium, total	7439-95-4	E420	0.0500	mg/L	9.90	10.1	2.27%	20%	----
		manganese, total	7439-96-5	E420	0.00100	mg/L	0.0194	0.0196	1.05%	20%	----
		molybdenum, total	7439-98-7	E420	0.000500	mg/L	0.00180	0.00172	0.000082	Diff <2x LOR	----
		nickel, total	7440-02-0	E420	0.00500	mg/L	<0.00500	<0.00500	0	Diff <2x LOR	----
		phosphorus, total	7723-14-0	E420	0.500	mg/L	4.73	5.13	0.400	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.500	mg/L	19.0	19.5	2.39%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 705052) - continued											
WT2218296-001	Anonymous	rubidium, total	7440-17-7	E420	0.00200	mg/L	0.00998	0.00997	0.000006	Diff <2x LOR	----
		selenium, total	7782-49-2	E420	0.000500	mg/L	<0.000500	<0.000500	0	Diff <2x LOR	----
		silicon, total	7440-21-3	E420	1.00	mg/L	2.15	2.20	0.05	Diff <2x LOR	----
		silver, total	7440-22-4	E420	0.000100	mg/L	0.00801	0.00817	1.96%	20%	----
		sodium, total	7440-23-5	E420	0.500	mg/L	109	111	1.81%	20%	----
		strontium, total	7440-24-6	E420	0.00200	mg/L	0.198	0.203	2.25%	20%	----
		sulfur, total	7704-34-9	E420	5.00	mg/L	16.5	17.0	0.48	Diff <2x LOR	----
		tellurium, total	13494-80-9	E420	0.00200	mg/L	<0.00200	<0.00200	0	Diff <2x LOR	----
		thorium, total	7440-29-1	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00100	mg/L	0.00236	0.00246	0.00010	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00300	mg/L	<0.00300	<0.00300	0	Diff <2x LOR	----
		tungsten, total	7440-33-7	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000100	mg/L	0.000352	0.000352	0.0000003	Diff <2x LOR	----
		vanadium, total	7440-62-2	E420	0.00500	mg/L	<0.00500	<0.00500	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0300	mg/L	0.0559	0.0566	0.0006	Diff <2x LOR	----
		zirconium, total	7440-67-7	E420	0.00200	mg/L	<0.00200	<0.00200	0	Diff <2x LOR	----
Total Metals (QC Lot: 733430)											
WT2218393-001	NDR-P-03	mercury, total	7439-97-6	E508-L	0.50	ng/L	1.16	1.29	0.12	Diff <2x LOR	----
Dissolved Metals (QC Lot: 705191)											
TY2202902-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 705191) - continued											
TY2202902-001	Anonymous	lithium, dissolved	7439-93-2	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
		tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 708744)											
TY2202737-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0100	mg/L	0.610	0.611	0.180%	20%	----
		antimony, dissolved	7440-36-0	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00100	mg/L	0.170	0.169	0.637%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000200	mg/L	<0.000200	<0.000200	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000500	mg/L	<0.000500	<0.000500	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.100	mg/L	<0.100	<0.100	0	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000500	mg/L	0.000152	0.000192	0.0000402	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.500	mg/L	54.3	54.5	0.310%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 708744) - continued											
TY2202737-001	Anonymous	cesium, dissolved	7440-46-2	E421	0.000100	mg/L	0.000587	0.000605	0.000018	Diff <2x LOR	----
		chromium, dissolved	7440-47-3	E421	0.00500	mg/L	<0.00500	<0.00500	0	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00200	mg/L	0.00332	0.00348	0.00016	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.100	mg/L	<0.100	<0.100	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000500	mg/L	<0.000500	<0.000500	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0100	mg/L	<0.0100	<0.0100	0	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E421	0.0500	mg/L	4.77	4.84	1.34%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00100	mg/L	0.311	0.310	0.170%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000500	mg/L	0.00334	0.00349	0.000151	Diff <2x LOR	----
		nickel, dissolved	7440-02-0	E421	0.00500	mg/L	<0.00500	<0.00500	0	Diff <2x LOR	----
		phosphorus, dissolved	7723-14-0	E421	0.500	mg/L	<0.500	<0.500	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.500	mg/L	15.1	15.2	0.996%	20%	----
		rubidium, dissolved	7440-17-7	E421	0.00200	mg/L	0.0458	0.0461	0.567%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000500	mg/L	0.00168	0.00144	0.000239	Diff <2x LOR	----
		silicon, dissolved	7440-21-3	E421	0.500	mg/L	2.23	2.35	0.120	Diff <2x LOR	----
		silver, dissolved	7440-22-4	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.500	mg/L	428	436	1.78%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00200	mg/L	0.0995	0.100	0.788%	20%	----
		sulfur, dissolved	7704-34-9	E421	5.00	mg/L	292	305	4.41%	20%	----
		tellurium, dissolved	13494-80-9	E421	0.00200	mg/L	<0.00200	<0.00200	0	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		thorium, dissolved	7440-29-1	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00300	mg/L	<0.00300	<0.00300	0	Diff <2x LOR	----
		tungsten, dissolved	7440-33-7	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000100	mg/L	0.000123	0.000115	0.000008	Diff <2x LOR	----
		vanadium, dissolved	7440-62-2	E421	0.00500	mg/L	0.00569	0.00606	0.00037	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0100	mg/L	<0.0100	<0.0100	0	Diff <2x LOR	----
		zirconium, dissolved	7440-67-7	E421	0.00300	mg/L	<0.00300	<0.00300	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 728312)											
FJ2202949-005	Anonymous	methylmercury (as MeHg), total	22967-92-6	E536	0.000080	µg/L	<0.000000080 mg/L	<0.000080	0	Diff <2x LOR	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 703780)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 703815)						
solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 705130)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 705131)						
alkalinity, total (as CaCO3)	----	E290	1	mg/L	1.0	----
Physical Tests (QCLot: 705132)						
acidity (as CaCO3)	----	E283	2	mg/L	<2.0	----
Anions and Nutrients (QCLot: 705133)						
chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 705134)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 705135)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 705136)						
nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 705137)						
nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 708261)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 708262)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 712183)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 712184)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Cyanides (QCLot: 715777)						
cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 715778)						
cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Cyanides (QCLot: 715779)						
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	<0.0020	----
Total Metals (QCLot: 705010)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 705010) - continued						
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----
Total Metals (QCLot: 705052)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 705052) - continued						
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----
Total Metals (QCLot: 733430)						
mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Dissolved Metals (QCLot: 705191)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 705191) - continued						
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Dissolved Metals (QCLot: 708744)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 708744) - continued						
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Speciated Metals (QCLot: 728312)						
methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	<0.000020	----
Speciated Metals (QCLot: 740379)						
methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	<0.000020	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 703780)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	104	85.0	115	----
Physical Tests (QCLot: 703815)									
solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	102	85.0	115	----
Physical Tests (QCLot: 705129)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 705130)									
conductivity	----	E100	1	µS/cm	1409 µS/cm	101	90.0	110	----
Physical Tests (QCLot: 705131)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	150 mg/L	104	85.0	115	----
Physical Tests (QCLot: 705132)									
acidity (as CaCO3)	----	E283	2	mg/L	50 mg/L	113	85.0	115	----
Anions and Nutrients (QCLot: 705133)									
chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 705134)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 705135)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 705136)									
nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 705137)									
nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 708261)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.53 mg/L	96.8	80.0	120	----
Anions and Nutrients (QCLot: 708262)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 712183)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.53 mg/L	101	80.0	120	----
Anions and Nutrients (QCLot: 712184)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	100	85.0	115	----
Cyanides (QCLot: 715777)									

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Concentration	LCS	Low	High	Qualifier
Cyanides (QCLot: 715777) - continued									
cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	94.6	80.0	120	----
Cyanides (QCLot: 715778)									
cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	101	80.0	120	----
Cyanides (QCLot: 715779)									
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	0.25 mg/L	92.5	80.0	120	----
Total Metals (QCLot: 705010)									
aluminum, total	7429-90-5	E420	0.003	mg/L	0.1 mg/L	107	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	0.05 mg/L	103	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	0.05 mg/L	109	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.0125 mg/L	108	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.005 mg/L	106	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	0.05 mg/L	102	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	0.05 mg/L	100	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.005 mg/L	106	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	2.5 mg/L	105	80.0	120	----
cesium, total	7440-46-2	E420	0.00001	mg/L	0.0025 mg/L	106	80.0	120	----
chromium, total	7440-47-3	E420	0.0005	mg/L	0.0125 mg/L	102	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.0125 mg/L	104	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.0125 mg/L	103	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	0.05 mg/L	99.9	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.025 mg/L	101	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.0125 mg/L	103	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	2.5 mg/L	103	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.0125 mg/L	104	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.0125 mg/L	99.2	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.025 mg/L	103	80.0	120	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	0.5 mg/L	107	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	2.5 mg/L	104	80.0	120	----
rubidium, total	7440-17-7	E420	0.0002	mg/L	0.005 mg/L	109	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	0.05 mg/L	108	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	0.5 mg/L	102	80.0	120	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.005 mg/L	105	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	2.5 mg/L	104	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.0125 mg/L	101	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	2.5 mg/L	96.6	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 705010) - continued									
tellurium, total	13494-80-9	E420	0.0002	mg/L	0.005 mg/L	104	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	0.05 mg/L	100	80.0	120	----
thorium, total	7440-29-1	E420	0.0001	mg/L	0.005 mg/L	100	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.025 mg/L	102	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.0125 mg/L	103	80.0	120	----
tungsten, total	7440-33-7	E420	0.0001	mg/L	0.005 mg/L	101	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.00025 mg/L	104	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.025 mg/L	105	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.025 mg/L	106	80.0	120	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	0.005 mg/L	94.5	80.0	120	----
Total Metals (QCLot: 705052)									
aluminum, total	7429-90-5	E420	0.003	mg/L	0.1 mg/L	111	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	0.05 mg/L	110	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	0.05 mg/L	109	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.0125 mg/L	108	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.005 mg/L	109	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	0.05 mg/L	105	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	0.05 mg/L	103	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.005 mg/L	109	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	2.5 mg/L	107	80.0	120	----
cesium, total	7440-46-2	E420	0.00001	mg/L	0.0025 mg/L	105	80.0	120	----
chromium, total	7440-47-3	E420	0.0005	mg/L	0.0125 mg/L	108	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.0125 mg/L	108	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.0125 mg/L	105	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	0.05 mg/L	106	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.025 mg/L	107	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.0125 mg/L	105	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	2.5 mg/L	110	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.0125 mg/L	111	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.0125 mg/L	105	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.025 mg/L	110	80.0	120	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	0.5 mg/L	109	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	2.5 mg/L	111	80.0	120	----
rubidium, total	7440-17-7	E420	0.0002	mg/L	0.005 mg/L	113	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	0.05 mg/L	106	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	0.5 mg/L	107	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 705052) - continued									
silver, total	7440-22-4	E420	0.00001	mg/L	0.005 mg/L	111	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	2.5 mg/L	108	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.0125 mg/L	103	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	2.5 mg/L	108	80.0	120	----
tellurium, total	13494-80-9	E420	0.0002	mg/L	0.005 mg/L	105	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	0.05 mg/L	107	80.0	120	----
thorium, total	7440-29-1	E420	0.0001	mg/L	0.005 mg/L	108	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.025 mg/L	105	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.0125 mg/L	106	80.0	120	----
tungsten, total	7440-33-7	E420	0.0001	mg/L	0.005 mg/L	104	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.00025 mg/L	110	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.025 mg/L	108	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.025 mg/L	111	80.0	120	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	0.005 mg/L	106	80.0	120	----
Total Metals (QCLot: 733430)									
mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	112	80.0	120	----
Dissolved Metals (QCLot: 705191)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	0.1 mg/L	104	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	0.05 mg/L	98.5	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	0.05 mg/L	106	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.0125 mg/L	106	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.005 mg/L	103	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	0.05 mg/L	104	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	0.05 mg/L	100	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.005 mg/L	103	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	2.5 mg/L	107	80.0	120	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.0025 mg/L	105	80.0	120	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.0125 mg/L	100	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.0125 mg/L	102	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.0125 mg/L	99.9	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	0.05 mg/L	101	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.025 mg/L	106	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.0125 mg/L	100.0	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	2.5 mg/L	100	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.0125 mg/L	105	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 705191) - continued									
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.0125 mg/L	98.8	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.025 mg/L	101	80.0	120	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	0.5 mg/L	109	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	2.5 mg/L	103	80.0	120	----
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.005 mg/L	108	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	0.05 mg/L	102	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	0.5 mg/L	101	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.005 mg/L	99.5	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	2.5 mg/L	97.3	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.0125 mg/L	99.1	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	2.5 mg/L	100	80.0	120	----
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.005 mg/L	99.2	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	0.05 mg/L	106	80.0	120	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.005 mg/L	105	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.025 mg/L	99.6	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.0125 mg/L	102	80.0	120	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.005 mg/L	105	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.00025 mg/L	111	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.025 mg/L	103	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.025 mg/L	110	80.0	120	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.005 mg/L	94.1	80.0	120	----
Dissolved Metals (QCLot: 708744)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	0.1 mg/L	108	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	0.05 mg/L	104	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	0.05 mg/L	103	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.0125 mg/L	103	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.005 mg/L	111	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	0.05 mg/L	104	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	0.05 mg/L	104	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.005 mg/L	102	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	2.5 mg/L	104	80.0	120	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.0025 mg/L	99.6	80.0	120	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.0125 mg/L	102	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.0125 mg/L	100	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.0125 mg/L	98.5	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	0.05 mg/L	99.3	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 708744) - continued									
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.025 mg/L	106	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.0125 mg/L	109	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	2.5 mg/L	104	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.0125 mg/L	105	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.0125 mg/L	100	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.025 mg/L	102	80.0	120	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	0.5 mg/L	111	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	2.5 mg/L	106	80.0	120	----
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.005 mg/L	109	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	0.05 mg/L	101	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	0.5 mg/L	106	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.005 mg/L	105	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	2.5 mg/L	108	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.0125 mg/L	98.8	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	2.5 mg/L	112	80.0	120	----
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.005 mg/L	101	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	0.05 mg/L	103	80.0	120	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.005 mg/L	105	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.025 mg/L	100	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.0125 mg/L	100	80.0	120	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.005 mg/L	101	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.00025 mg/L	106	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.025 mg/L	103	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.025 mg/L	104	80.0	120	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.005 mg/L	100	80.0	120	----
Speciated Metals (QCLot: 728312)									
methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	0.0025 µg/L	76.3	70.0	130	----
Speciated Metals (QCLot: 740379)									
methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	0.0025 µg/L	81.8	70.0	130	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 705133)										
WT2218148-001	Anonymous	chloride	16887-00-6	E235.Cl	99.0 mg/L	100 mg/L	99.0	75.0	125	----
Anions and Nutrients (QCLot: 705134)										
WT2218148-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 705135)										
WT2218148-001	Anonymous	fluoride	16984-48-8	E235.F	1.000 mg/L	1 mg/L	100.0	75.0	125	----
Anions and Nutrients (QCLot: 705136)										
WT2218148-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3	2.36 mg/L	2.5 mg/L	94.2	75.0	125	----
Anions and Nutrients (QCLot: 705137)										
WT2218148-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2	0.502 mg/L	0.5 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 708261)										
WT2218064-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0957 mg/L	0.1 mg/L	95.7	70.0	130	----
Anions and Nutrients (QCLot: 708262)										
WT2218088-008	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.108 mg/L	0.1 mg/L	108	75.0	125	----
Anions and Nutrients (QCLot: 712183)										
WT2218368-001	Anonymous	phosphorus, total	7723-14-0	E372-U	ND mg/L	0.1 mg/L	ND	70.0	130	----
Anions and Nutrients (QCLot: 712184)										
WT2218393-001	NDR-P-03	ammonia, total (as N)	7664-41-7	E298	0.107 mg/L	0.1 mg/L	107	75.0	125	----
Cyanides (QCLot: 715777)										
WT2218393-001	NDR-P-03	cyanide, free	----	E339	0.127 mg/L	0.125 mg/L	101	75.0	125	----
Cyanides (QCLot: 715778)										
WT2218393-001	NDR-P-03	cyanide, weak acid dissociable	----	E336	0.134 mg/L	0.125 mg/L	107	75.0	125	----
Cyanides (QCLot: 715779)										
WT2218393-001	NDR-P-03	cyanide, strong acid dissociable (total)	----	E333	0.229 mg/L	0.25 mg/L	91.5	75.0	125	----
Total Metals (QCLot: 705010)										
WT2218246-002	Anonymous	aluminum, total	7429-90-5	E420	0.0975 mg/L	0.1 mg/L	97.5	70.0	130	----
		antimony, total	7440-36-0	E420	0.0500 mg/L	0.05 mg/L	100	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0512 mg/L	0.05 mg/L	102	70.0	130	----
		barium, total	7440-39-3	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 705010) - continued										
WT2218246-002	Anonymous	beryllium, total	7440-41-7	E420	0.00535 mg/L	0.005 mg/L	107	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0535 mg/L	0.05 mg/L	107	70.0	130	----
		boron, total	7440-42-8	E420	ND mg/L	0.05 mg/L	ND	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00498 mg/L	0.005 mg/L	99.6	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		cesium, total	7440-46-2	E420	0.00267 mg/L	0.0025 mg/L	107	70.0	130	----
		chromium, total	7440-47-3	E420	0.0132 mg/L	0.0125 mg/L	106	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0134 mg/L	0.0125 mg/L	107	70.0	130	----
		copper, total	7440-50-8	E420	0.0126 mg/L	0.0125 mg/L	101	70.0	130	----
		iron, total	7439-89-6	E420	ND mg/L	0.05 mg/L	ND	70.0	130	----
		lead, total	7439-92-1	E420	0.0257 mg/L	0.025 mg/L	103	70.0	130	----
		lithium, total	7439-93-2	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	0.0121 mg/L	0.0125 mg/L	96.7	70.0	130	----
		molybdenum, total	7439-98-7	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		nickel, total	7440-02-0	E420	0.0253 mg/L	0.025 mg/L	101	70.0	130	----
		phosphorus, total	7723-14-0	E420	0.514 mg/L	0.5 mg/L	103	70.0	130	----
		potassium, total	7440-09-7	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		rubidium, total	7440-17-7	E420	ND mg/L	0.005 mg/L	ND	70.0	130	----
		selenium, total	7782-49-2	E420	0.0524 mg/L	0.05 mg/L	105	70.0	130	----
		silicon, total	7440-21-3	E420	ND mg/L	0.5 mg/L	ND	70.0	130	----
		silver, total	7440-22-4	E420	0.00508 mg/L	0.005 mg/L	102	70.0	130	----
		sodium, total	7440-23-5	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		tellurium, total	13494-80-9	E420	0.00384 mg/L	0.005 mg/L	76.7	70.0	130	----
		thallium, total	7440-28-0	E420	0.0512 mg/L	0.05 mg/L	102	70.0	130	----
		thorium, total	7440-29-1	E420	0.00433 mg/L	0.005 mg/L	86.6	70.0	130	----
		tin, total	7440-31-5	E420	0.0257 mg/L	0.025 mg/L	103	70.0	130	----
		titanium, total	7440-32-6	E420	0.0132 mg/L	0.0125 mg/L	105	70.0	130	----
		tungsten, total	7440-33-7	E420	ND mg/L	0.005 mg/L	ND	70.0	130	----
		uranium, total	7440-61-1	E420	ND mg/L	0.00025 mg/L	ND	70.0	130	----
		vanadium, total	7440-62-2	E420	0.0257 mg/L	0.025 mg/L	103	70.0	130	----
		zinc, total	7440-66-6	E420	0.0272 mg/L	0.025 mg/L	109	70.0	130	----
		zirconium, total	7440-67-7	E420	0.00420 mg/L	0.005 mg/L	84.1	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 705052)										
WT2218336-001	Anonymous	aluminum, total	7429-90-5	E420	ND mg/L	0.1 mg/L	ND	70.0	130	----
		antimony, total	7440-36-0	E420	0.0524 mg/L	0.05 mg/L	105	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0513 mg/L	0.05 mg/L	102	70.0	130	----
		barium, total	7440-39-3	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		beryllium, total	7440-41-7	E420	0.00521 mg/L	0.005 mg/L	104	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0476 mg/L	0.05 mg/L	95.3	70.0	130	----
		boron, total	7440-42-8	E420	0.047 mg/L	0.05 mg/L	94.6	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00494 mg/L	0.005 mg/L	98.8	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		cesium, total	7440-46-2	E420	0.00256 mg/L	0.0025 mg/L	102	70.0	130	----
		chromium, total	7440-47-3	E420	0.0125 mg/L	0.0125 mg/L	100.0	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0123 mg/L	0.0125 mg/L	98.5	70.0	130	----
		copper, total	7440-50-8	E420	0.0119 mg/L	0.0125 mg/L	95.4	70.0	130	----
		iron, total	7439-89-6	E420	ND mg/L	0.05 mg/L	ND	70.0	130	----
		lead, total	7439-92-1	E420	0.0240 mg/L	0.025 mg/L	96.2	70.0	130	----
		lithium, total	7439-93-2	E420	0.0126 mg/L	0.0125 mg/L	101	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0130 mg/L	0.0125 mg/L	104	70.0	130	----
		nickel, total	7440-02-0	E420	0.0244 mg/L	0.025 mg/L	97.5	70.0	130	----
		phosphorus, total	7723-14-0	E420	0.538 mg/L	0.5 mg/L	108	70.0	130	----
		potassium, total	7440-09-7	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		rubidium, total	7440-17-7	E420	0.00517 mg/L	0.005 mg/L	103	70.0	130	----
		selenium, total	7782-49-2	E420	0.0494 mg/L	0.05 mg/L	98.9	70.0	130	----
		silicon, total	7440-21-3	E420	ND mg/L	0.5 mg/L	ND	70.0	130	----
		silver, total	7440-22-4	E420	0.00507 mg/L	0.005 mg/L	101	70.0	130	----
		sodium, total	7440-23-5	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		tellurium, total	13494-80-9	E420	0.00467 mg/L	0.005 mg/L	93.4	70.0	130	----
		thallium, total	7440-28-0	E420	0.0481 mg/L	0.05 mg/L	96.3	70.0	130	----
		thorium, total	7440-29-1	E420	0.00482 mg/L	0.005 mg/L	96.4	70.0	130	----
		tin, total	7440-31-5	E420	0.0250 mg/L	0.025 mg/L	100	70.0	130	----
		titanium, total	7440-32-6	E420	0.0121 mg/L	0.0125 mg/L	97.0	70.0	130	----
		tungsten, total	7440-33-7	E420	0.00502 mg/L	0.005 mg/L	100	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 705052) - continued										
WT2218336-001	Anonymous	uranium, total	7440-61-1	E420	ND mg/L	0.00025 mg/L	ND	70.0	130	----
		vanadium, total	7440-62-2	E420	0.0260 mg/L	0.025 mg/L	104	70.0	130	----
		zinc, total	7440-66-6	E420	0.0241 mg/L	0.025 mg/L	96.4	70.0	130	----
		zirconium, total	7440-67-7	E420	0.00460 mg/L	0.005 mg/L	92.0	70.0	130	----
Total Metals (QCLot: 733430)										
WT2218393-002	NDR-P-02	mercury, total	7439-97-6	E508-L	4.82 ng/L	5 ng/L	96.5	70.0	130	----
Dissolved Metals (QCLot: 705191)										
TY2202908-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0989 mg/L	0.1 mg/L	98.9	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0466 mg/L	0.05 mg/L	93.2	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0551 mg/L	0.05 mg/L	110	70.0	130	----
		barium, dissolved	7440-39-3	E421	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.00515 mg/L	0.005 mg/L	103	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0457 mg/L	0.05 mg/L	91.5	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.045 mg/L	0.05 mg/L	89.4	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00514 mg/L	0.005 mg/L	103	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		cesium, dissolved	7440-46-2	E421	0.00259 mg/L	0.0025 mg/L	104	70.0	130	----
		chromium, dissolved	7440-47-3	E421	0.0122 mg/L	0.0125 mg/L	97.3	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0120 mg/L	0.0125 mg/L	96.2	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0118 mg/L	0.0125 mg/L	94.7	70.0	130	----
		iron, dissolved	7439-89-6	E421	ND mg/L	0.05 mg/L	ND	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0246 mg/L	0.025 mg/L	98.2	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.0118 mg/L	0.0125 mg/L	94.1	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0120 mg/L	0.0125 mg/L	95.6	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0236 mg/L	0.025 mg/L	94.4	70.0	130	----
		phosphorus, dissolved	7723-14-0	E421	0.532 mg/L	0.5 mg/L	106	70.0	130	----
		potassium, dissolved	7440-09-7	E421	2.44 mg/L	2.5 mg/L	97.5	70.0	130	----
		rubidium, dissolved	7440-17-7	E421	0.00548 mg/L	0.005 mg/L	110	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0594 mg/L	0.05 mg/L	119	70.0	130	----
		silicon, dissolved	7440-21-3	E421	ND mg/L	0.5 mg/L	ND	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00264 mg/L	0.005 mg/L	52.8	70.0	130	MS-Ag
		sodium, dissolved	7440-23-5	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.0125 mg/L	ND	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 705191) - continued										
TY2202908-001	Anonymous	sulfur, dissolved	7704-34-9	E421	2.45 mg/L	2.5 mg/L	98.2	70.0	130	----
		tellurium, dissolved	13494-80-9	E421	0.00340 mg/L	0.005 mg/L	68.0	70.0	130	MES
		thallium, dissolved	7440-28-0	E421	0.0494 mg/L	0.05 mg/L	98.8	70.0	130	----
		thorium, dissolved	7440-29-1	E421	0.00480 mg/L	0.005 mg/L	95.9	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0234 mg/L	0.025 mg/L	93.6	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0123 mg/L	0.0125 mg/L	98.8	70.0	130	----
		tungsten, dissolved	7440-33-7	E421	0.00497 mg/L	0.005 mg/L	99.4	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.000256 mg/L	0.00025 mg/L	103	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.0247 mg/L	0.025 mg/L	98.9	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.0254 mg/L	0.025 mg/L	102	70.0	130	----
		zirconium, dissolved	7440-67-7	E421	0.00441 mg/L	0.005 mg/L	88.2	70.0	130	----
Dissolved Metals (QCLot: 708744)										
TY2202737-002	Anonymous	aluminum, dissolved	7429-90-5	E421	ND mg/L	0.1 mg/L	ND	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0467 mg/L	0.05 mg/L	93.4	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0490 mg/L	0.05 mg/L	98.0	70.0	130	----
		barium, dissolved	7440-39-3	E421	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.00480 mg/L	0.005 mg/L	96.0	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0470 mg/L	0.05 mg/L	94.0	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.045 mg/L	0.05 mg/L	90.4	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00483 mg/L	0.005 mg/L	96.6	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		cesium, dissolved	7440-46-2	E421	0.00229 mg/L	0.0025 mg/L	91.8	70.0	130	----
		chromium, dissolved	7440-47-3	E421	0.0118 mg/L	0.0125 mg/L	94.7	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0119 mg/L	0.0125 mg/L	95.0	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0118 mg/L	0.0125 mg/L	94.8	70.0	130	----
		iron, dissolved	7439-89-6	E421	ND mg/L	0.05 mg/L	ND	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0242 mg/L	0.025 mg/L	96.9	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.0129 mg/L	0.0125 mg/L	103	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0114 mg/L	0.0125 mg/L	91.4	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0233 mg/L	0.025 mg/L	93.3	70.0	130	----
		phosphorus, dissolved	7723-14-0	E421	ND mg/L	0.5 mg/L	ND	70.0	130	----
		potassium, dissolved	7440-09-7	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		rubidium, dissolved	7440-17-7	E421	ND mg/L	0.005 mg/L	ND	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 708744) - continued										
TY2202737-002	Anonymous	selenium, dissolved	7782-49-2	E421	0.0484 mg/L	0.05 mg/L	96.9	70.0	130	----
		silicon, dissolved	7440-21-3	E421	ND mg/L	0.5 mg/L	ND	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00460 mg/L	0.005 mg/L	92.1	70.0	130	----
		sodium, dissolved	7440-23-5	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		tellurium, dissolved	13494-80-9	E421	0.00458 mg/L	0.005 mg/L	91.5	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0476 mg/L	0.05 mg/L	95.1	70.0	130	----
		thorium, dissolved	7440-29-1	E421	0.00426 mg/L	0.005 mg/L	85.3	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0219 mg/L	0.025 mg/L	87.8	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0127 mg/L	0.0125 mg/L	102	70.0	130	----
		tungsten, dissolved	7440-33-7	E421	0.00472 mg/L	0.005 mg/L	94.4	70.0	130	----
		uranium, dissolved	7440-61-1	E421	ND mg/L	0.00025 mg/L	ND	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.0245 mg/L	0.025 mg/L	98.1	70.0	130	----
		zinc, dissolved	7440-66-6	E421	ND mg/L	0.025 mg/L	ND	70.0	130	----
		zirconium, dissolved	7440-67-7	E421	0.00431 mg/L	0.005 mg/L	86.2	70.0	130	----
Speciated Metals (QCLot: 728312)										
FJ2202978-001	Anonymous	methylmercury (as MeHg), total	22967-92-6	E536	0.00178 µg/L	0.0025 µg/L	71.1	60.0	140	----

Qualifiers

Qualifier	Description
MES	*Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).*
MS-Ag	*MS-Ag: Matrix Spike recovery for silver was marginally below DQO (40 to <60%) due to its instability in the sample matrix. Silver was not detected. Reported result (< LOR) is reliable*

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

COC Number: 22 -

Page 1 of 1

Environmental Division Waterloo

Work Order Reference

WT2218393

Telephone : +1 519 886 6910

Report To	Contact and company name below will appear on the final report
Company:	Wood PLC
Contact:	Dale Klodnicki
Phone:	647-993-4243
	Company address below will appear on the final report
Street:	2020 Winston Park Drive, #700
City/Province:	Oakville Ontario
Postal Code:	L6H 6X7
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	
Contact:	

Project Information	
ALS Account # / Quote #:	21500
Job #:	OMEMA2002
PO / AFE:	
LSD:	
ALS Lab Work Order # (ALS use only):	

Reports / Recipients

Select Report Format: ☐ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Merge QC/QCI Reports with COA ☐ YES ☐ NO ☐ N/A

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: dale.klodnicki@woodplc.com

Email 2: roxanne.dibbley@woodplc.com

Email 3:

Invoice Recipients

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: dale.klodnicki@woodplc.com

Email 2:

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Contact: Gayle Braun Sampler: RD, DL

Turnaround Time (TAT) Requested

- ☐ Routine [R] if received by 3pm M-F - no surcharges apply
- ☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
- ☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
- ☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
- ☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
- ☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.

Additional fees may apply to rush requests on weekends.

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

Analysis Request

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	CN	Dissolved metals	Gen chem	Low T Mercury	Metals	MeHg	NH3/TP	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
						F									
	NDR-P-03	13-Oct-22	14:15	SW	7	R	R	R	R	R	R	R			
	NDR-P-02	13-Oct-22	11:15	SW	7	R	R	R	R	R	R	R			
	NDR-P-01	13-Oct-22	17:00	SW	7	R	R	R	R	R	R	R			
	NDR-S-04	13-Oct-22	10:30	SW	7	R	R	R	R	R	R	R			
	NDR-P-04	13-Oct-22	10:30	SW	7	R	R	R	R	R	R	R			
	NDR-P-07	15-Oct-22	15:00	SW	7	R	R	R	R	R	R	R			
	NDR-P-06	16-Oct-22	12:00	SW	7	R	R	R	R	R	R	R			
	NDR-Trib-02	16-Oct-22	16:00	SW	7	R	R	R	R	R	R	R			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

NDR-Trib-02 needs to be field filtered

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☑ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				1.2			

SHIPMENT RELEASE (client use)

Released by:	Dustin LePage	Date:	17-Oct-22	Time:

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by:	FH	Date:	2022-10-18	Time:	4PM

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

FEB 2022 FRONT

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

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

GC-572, CN-172

MM-322, N-317, 318

CERTIFICATE OF ANALYSIS

Work Order	: **WT2219907**	Page	: 1 of 14
Client	: **WSP E&I Canada Limited**	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 2020 Winston Park Drive Suite 600 Mississauga ON Canada L6H 6X7	Address	: 60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2002.2021C.400.5120.573000	Date Samples Received	: 28-Oct-2022 10:00
PO	: OMEMA2002.2021C.400.5120.573000	Date Analysis Commenced	: 31-Oct-2022
C-O-C number	: ----	Issue Date	: 17-Nov-2022 18:18
Sampler	: ----		
Site	: ----		
Quote number	: OMEMA2002		
No. of samples received	: 14		
No. of samples analysed	: 14		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Greg Pokocky	Supervisor - Inorganic	Inorganics, Waterloo, Ontario
Greg Pokocky	Supervisor - Inorganic	Metals, Waterloo, Ontario
Hamideh Moradi	Analyst	Metals, Burnaby, British Columbia
Jayden Piattelli	Analyst	Metals, Burnaby, British Columbia
Jon Fisher	Department Manager - Inorganics	Inorganics, Waterloo, Ontario
Kinny Wu	Lab Analyst	Metals, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances

LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	no unit
µg/L	micrograms per litre
µS/cm	microsiemens per centimetre
mg/L	milligrams per litre
ng/L	nanograms per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

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

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	*Description*
DLDS	*Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.*
DLHC	*Detection Limit Raised: Dilution required due to high concentration of test analyte(s).*
DLIS	*Detection Limit Adjusted due to insufficient sample.*
PEHT	*Parameter exceeded recommended holding time prior to analysis.*

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MATR-02	MATR-01	CNC-DUP-01	WBR-P-04	WBR-P-03
					Client sampling date / time	25-Oct-2022 15:15	25-Oct-2022 14:30	17-Oct-2022	24-Oct-2022 11:15	24-Oct-2022 15:00
						WT2219907-001	WT2219907-002	WT2219907-003	WT2219907-004	WT2219907-005
						Result	Result	Result	Result	Result
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L		<2.0	<2.0	<2.0	10.2	7.5
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		36.5	35.5	34.9	1.0	4.6
conductivity	----	E100	1.0	µS/cm		82.8	83.3	83.6	31.0	32.3
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L		40.9	43.7	49.5	17.6	22.3
pH	----	E108	0.10	pH units		7.68	7.67	7.50 PEHT	5.05	5.67
solids, total dissolved [TDS]	----	E162	10	mg/L		90 DLDS	81 DLDS	114 DLDS	99	106
solids, total suspended [TSS]	----	E160	3.0	mg/L		5.0	5.8	5.2 DLHC	<3.0	<5.0 DLHC
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		0.0140	0.0189	0.0391	0.0236	0.0267
chloride	16887-00-6	E235.Cl	0.50	mg/L		1.76	1.83	3.09	<0.50	<0.50
fluoride	16984-48-8	E235.F	0.020	mg/L		0.024	0.025	0.021	<0.020	<0.020
nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L		0.032	0.035	0.024	<0.020	<0.020
nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L		0.0047	0.0062	0.0133	0.0060	0.0088
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		2.27	2.32	<0.30	<0.30	<0.30
Cyanides										
cyanide, free	----	E339	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
cyanide, strong acid dissociable (total)	----	E333	0.0020	mg/L		<0.0020	<0.0020	0.0022	<0.0020	<0.0020
cyanide, weak acid dissociable	----	E336	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L		0.315	0.324	0.242	0.149	0.225
antimony, total	7440-36-0	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
arsenic, total	7440-38-2	E420	0.00010	mg/L		0.00062	0.00061	0.00099	0.00080	0.00092
barium, total	7440-39-3	E420	0.00010	mg/L		0.00702	0.00713	0.00711	0.00306	0.00491
beryllium, total	7440-41-7	E420	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
bismuth, total	7440-69-9	E420	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, total	7440-42-8	E420	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
cadmium, total	7440-43-9	E420	0.0000050	mg/L		0.0000181	0.0000165	0.0000167	0.0000338	0.0000352
calcium, total	7440-70-2	E420	0.050	mg/L		12.7	12.9	14.7	5.17	6.53

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MATR-02	MATR-01	CNC-DUP-01	WBR-P-04	WBR-P-03
					Client sampling date / time	25-Oct-2022 15:15	25-Oct-2022 14:30	17-Oct-2022	24-Oct-2022 11:15	24-Oct-2022 15:00
						WT2219907-001	WT2219907-002	WT2219907-003	WT2219907-004	WT2219907-005
						Result	Result	Result	Result	Result
Total Metals										
cesium, total	7440-46-2	E420	0.000010	mg/L		0.000028	0.000028	<0.000010	<0.000010	<0.000010
chromium, total	7440-47-3	E420	0.00050	mg/L		0.00091	0.00096	0.00076	<0.00050	0.00061
cobalt, total	7440-48-4	E420	0.00010	mg/L		0.00018	0.00019	0.00018	0.00021	0.00017
copper, total	7440-50-8	E420	0.00050	mg/L		0.00125	0.00134	0.00088	<0.00050	0.00063
iron, total	7439-89-6	E420	0.010	mg/L		0.493	0.498	0.709	0.554	0.680
lead, total	7439-92-1	E420	0.000050	mg/L		0.000190	0.000195	0.000225	0.000474	0.000445
lithium, total	7439-93-2	E420	0.0010	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
magnesium, total	7439-95-4	E420	0.0050	mg/L		3.05	3.03	3.44	1.34	1.64
manganese, total	7439-96-5	E420	0.00010	mg/L		0.0224	0.0226	0.0644	0.0632	0.0527
mercury, total	7439-97-6	E508-L	0.50	ng/L		4.62	3.77	3.65	2.23	3.52
molybdenum, total	7439-98-7	E420	0.000050	mg/L		0.000078	0.000079	0.000055	<0.000050	<0.000050
nickel, total	7440-02-0	E420	0.00050	mg/L		0.00083	0.00081	0.00072	<0.00050	0.00060
phosphorus, total	7723-14-0	E420	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
potassium, total	7440-09-7	E420	0.050	mg/L		0.410	0.439	0.253	0.052	0.076
rubidium, total	7440-17-7	E420	0.00020	mg/L		0.00132	0.00128	0.00076	<0.00020	0.00038
selenium, total	7782-49-2	E420	0.000050	mg/L		0.000118	0.000125	0.000157	0.000136	0.000153
silicon, total	7440-21-3	E420	0.10	mg/L		2.97	2.85	1.88	1.22	1.27
silver, total	7440-22-4	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, total	7440-23-5	E420	0.050	mg/L		1.77	1.78	2.68	0.344	0.403
strontium, total	7440-24-6	E420	0.00020	mg/L		0.0207	0.0210	0.0258	0.00951	0.0118
sulfur, total	7704-34-9	E420	0.50	mg/L		0.98	0.96	<0.50	<0.50	<0.50
tellurium, total	13494-80-9	E420	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
thallium, total	7440-28-0	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
thorium, total	7440-29-1	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
tin, total	7440-31-5	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, total	7440-32-6	E420	0.00030	mg/L		0.0104	0.0104	0.00629	0.00277	0.00469
tungsten, total	7440-33-7	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
uranium, total	7440-61-1	E420	0.000010	mg/L		0.000062	0.000062	0.000041	<0.000010	0.000015
vanadium, total	7440-62-2	E420	0.00050	mg/L		0.00080	0.00079	0.00062	<0.00050	0.00050
zinc, total	7440-66-6	E420	0.0030	mg/L		0.0041	0.0049	0.0058	0.0084	0.0088

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MATR-02	MATR-01	CNC-DUP-01	WBR-P-04	WBR-P-03
					Client sampling date / time	25-Oct-2022 15:15	25-Oct-2022 14:30	17-Oct-2022	24-Oct-2022 11:15	24-Oct-2022 15:00
						WT2219907-001	WT2219907-002	WT2219907-003	WT2219907-004	WT2219907-005
						Result	Result	Result	Result	Result
Total Metals										
zirconium, total	7440-67-7	E420	0.00020	mg/L		0.00034	0.00037	0.00032	<0.00020	0.00021
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.106	0.100	0.173	0.141	0.208
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00051	0.00052	0.00091	0.00078	0.00084
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.00510	0.00507	0.00662	0.00337	0.00456
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, dissolved	7440-42-8	E421	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		0.0000122	0.0000146	0.0000158	0.0000309	0.0000343
calcium, dissolved	7440-70-2	E421	0.050	mg/L		11.4	12.8	13.6	4.86	6.24
cesium, dissolved	7440-46-2	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		0.00057	<0.00050	0.00058	<0.00050	0.00054
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		<0.00010	<0.00010	0.00014	0.00021	0.00014
copper, dissolved	7440-50-8	E421	0.00020	mg/L		0.00102	0.00103	0.00078	0.00039	0.00049
iron, dissolved	7439-89-6	E421	0.010	mg/L		0.218	0.218	0.574	0.512	0.641
lead, dissolved	7439-92-1	E421	0.000050	mg/L		0.000068	0.000065	0.000152	0.000450	0.000357
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L		3.03	2.85	3.78	1.32	1.63
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.0104	0.0104	0.0565	0.0627	0.0467
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		0.000072	0.000063	<0.000050	<0.000050	<0.000050
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		0.00055	<0.00050	0.00063	<0.00050	0.00061
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
potassium, dissolved	7440-09-7	E421	0.050	mg/L		0.321	0.311	0.230	<0.050	<0.050
rubidium, dissolved	7440-17-7	E421	0.00020	mg/L		0.00088	0.00090	0.00062	<0.00020	0.00025
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.000108	0.000115	0.000138	0.000136	0.000148
silicon, dissolved	7440-21-3	E421	0.050	mg/L		2.28	2.26	1.70	1.15	1.18
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, dissolved	7440-23-5	E421	0.050	mg/L		1.67	1.61	2.78	0.344	0.393
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		0.0202	0.0211	0.0254	0.00944	0.0115

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MATR-02	MATR-01	CNC-DUP-01	WBR-P-04	WBR-P-03
					Client sampling date / time	25-Oct-2022 15:15	25-Oct-2022 14:30	17-Oct-2022	24-Oct-2022 11:15	24-Oct-2022 15:00
						WT2219907-001	WT2219907-002	WT2219907-003	WT2219907-004	WT2219907-005
						Result	Result	Result	Result	Result
Dissolved Metals										
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		0.94	0.86	<0.50	<0.50	<0.50
tellurium, dissolved	13494-80-9	E421	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
thorium, dissolved	7440-29-1	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	0.00014	<0.00010
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		0.00217	0.00190	0.00315	0.00223	0.00377
tungsten, dissolved	7440-33-7	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		0.000047	0.000049	0.000032	<0.000010	0.000012
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		0.0032	0.0033	0.0055	0.0099	0.0088
zirconium, dissolved	7440-67-7	E421	0.00030	mg/L		<0.00030	<0.00030	0.00030	<0.00030	<0.00030
dissolved metals filtration location	----	EP421	-	-		Field	Field	Field	Field	Field
Speciated Metals										
methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L		0.000086	0.000077	0.000105	0.000059	0.000102

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-GERLK	NDR-SUFLK	NDR-MARKLK-SUR	CNC-DUP-02	NDR-TRIB-01
					Client sampling date / time	20-Oct-2022 11:30	21-Oct-2022 13:30	20-Oct-2022 14:45	25-Oct-2022	18-Oct-2022 12:15
						WT2219907-006	WT2219907-007	WT2219907-008	WT2219907-009	WT2219907-010
						Result	Result	Result	Result	Result
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L		<2.0	<2.0	<2.0	<2.0	<2.0
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		136	125	57.0	33.9 DLIS	47.3
conductivity	----	E100	1.0	µS/cm		258	236	110	81.5	110
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L		133	119	61.4	44.5	56.2
pH	----	E108	0.10	pH units		8.21	8.23	7.73	6.65	7.56
solids, total dissolved [TDS]	----	E162	10	mg/L		153 DLDS	123 DLDS	104 DLDS	85 DLDS	107 DLDS
solids, total suspended [TSS]	----	E160	3.0	mg/L		<7.5 DLHC	<3.0	<3.0 PEHT	5.7 DLHC	3.9
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		0.0364	0.0347	0.0169	0.0161	0.0608
chloride	16887-00-6	E235.Cl	0.50	mg/L		0.58	<0.50	<0.50	1.73	4.92
fluoride	16984-48-8	E235.F	0.020	mg/L		0.062	0.030	0.025	0.026	0.021
nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L		<0.020	<0.020	<0.020	0.037	0.020
nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L		0.0102	0.0046	0.0117	0.0119	0.0110
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		1.07	2.14	0.35	2.12	<0.30
Cyanides										
cyanide, free	----	E339	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
cyanide, strong acid dissociable (total)	----	E333	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
cyanide, weak acid dissociable	----	E336	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L		0.0404	0.0081	0.113	0.303	0.202
antimony, total	7440-36-0	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
arsenic, total	7440-38-2	E420	0.00010	mg/L		0.00056	0.00024	0.00067	0.00064	0.00090
barium, total	7440-39-3	E420	0.00010	mg/L		0.0196	0.0137	0.00830	0.00705	0.00792
beryllium, total	7440-41-7	E420	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
bismuth, total	7440-69-9	E420	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, total	7440-42-8	E420	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
cadmium, total	7440-43-9	E420	0.0000050	mg/L		<0.0000050	<0.0000050	0.0000108	0.0000143	0.0000152
calcium, total	7440-70-2	E420	0.050	mg/L		39.9	36.2	18.6	12.8	17.3
cesium, total	7440-46-2	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	0.000028	0.000011

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-GERLK	NDR-SUFLK	NDR-MARKLK-SUR	CNC-DUP-02	NDR-TRIB-01
					Client sampling date / time	20-Oct-2022 11:30	21-Oct-2022 13:30	20-Oct-2022 14:45	25-Oct-2022	18-Oct-2022 12:15
						WT2219907-006	WT2219907-007	WT2219907-008	WT2219907-009	WT2219907-010
						Result	Result	Result	Result	Result
Total Metals										
chromium, total	7440-47-3	E420	0.00050	mg/L		<0.00050	<0.00050	<0.00050	0.00089	0.00064
cobalt, total	7440-48-4	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	0.00018	0.00015
copper, total	7440-50-8	E420	0.00050	mg/L		<0.00050	<0.00050	0.00054	0.00131	0.00082
iron, total	7439-89-6	E420	0.010	mg/L		0.488	0.020	0.510	0.478	0.594
lead, total	7439-92-1	E420	0.000050	mg/L		<0.000050	<0.000050	0.000112	0.000184	0.000204
lithium, total	7439-93-2	E420	0.0010	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
magnesium, total	7439-95-4	E420	0.0050	mg/L		9.23	8.77	4.59	3.06	4.09
manganese, total	7439-96-5	E420	0.00010	mg/L		0.138	0.0472	0.0555	0.0224	0.0470
mercury, total	7439-97-6	E508-L	0.50	ng/L		1.80	0.81	1.54	3.34	2.12
molybdenum, total	7439-98-7	E420	0.000050	mg/L		0.000142	<0.000050	0.000057	0.000083	0.000068
nickel, total	7440-02-0	E420	0.00050	mg/L		<0.00050	<0.00050	<0.00050	0.00081	0.00058
phosphorus, total	7723-14-0	E420	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
potassium, total	7440-09-7	E420	0.050	mg/L		1.03	0.973	0.460	0.416	0.352
rubidium, total	7440-17-7	E420	0.00020	mg/L		0.00149	0.00160	0.00091	0.00136	0.00079
selenium, total	7782-49-2	E420	0.000050	mg/L		0.000073	<0.000050	0.000093	0.000120	0.000145
silicon, total	7440-21-3	E420	0.10	mg/L		3.33	2.69	2.03	2.77	2.03
silver, total	7440-22-4	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, total	7440-23-5	E420	0.050	mg/L		3.24	1.42	1.37	1.75	3.82
strontium, total	7440-24-6	E420	0.00020	mg/L		0.0705	0.0441	0.0313	0.0207	0.0303
sulfur, total	7704-34-9	E420	0.50	mg/L		0.60	0.97	<0.50	0.92	<0.50
tellurium, total	13494-80-9	E420	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
thallium, total	7440-28-0	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
thorium, total	7440-29-1	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
tin, total	7440-31-5	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, total	7440-32-6	E420	0.00030	mg/L		0.00120	<0.00030	0.00355	0.0103	0.00579
tungsten, total	7440-33-7	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
uranium, total	7440-61-1	E420	0.000010	mg/L		0.000035	0.000089	0.000042	0.000059	0.000060
vanadium, total	7440-62-2	E420	0.00050	mg/L		<0.00050	<0.00050	<0.00050	0.00076	0.00054
zinc, total	7440-66-6	E420	0.0030	mg/L		<0.0030	<0.0030	0.0042	0.0043	0.0055
zirconium, total	7440-67-7	E420	0.00020	mg/L		<0.00020	<0.00020	<0.00020	0.00033	0.00025

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-GERLK	NDR-SUFLK	NDR-MARKLK-SUR	CNC-DUP-02	NDR-TRIB-01
					Client sampling date / time	20-Oct-2022 11:30	21-Oct-2022 13:30	20-Oct-2022 14:45	25-Oct-2022	18-Oct-2022 12:15
						WT2219907-006	WT2219907-007	WT2219907-008	WT2219907-009	WT2219907-010
						Result	Result	Result	Result	Result
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.0253	0.0028	0.0648	0.180	0.124
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00053	0.00022	0.00056	0.00054	0.00081
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.0179	0.0130	0.00750	0.00633	0.00734
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, dissolved	7440-42-8	E421	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		<0.0000050	<0.0000050	0.0000076	0.0000146	0.0000139
calcium, dissolved	7440-70-2	E421	0.050	mg/L		36.8	32.4	16.9	12.5	15.6
cesium, dissolved	7440-46-2	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	0.000013	<0.000010
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	0.00065	<0.00050
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	0.00013	0.00011
copper, dissolved	7440-50-8	E421	0.00020	mg/L		0.00022	<0.00020	0.00043	0.00116	0.00065
iron, dissolved	7439-89-6	E421	0.010	mg/L		0.361	0.013	0.390	0.344	0.464
lead, dissolved	7439-92-1	E421	0.000050	mg/L		<0.000050	<0.000050	0.000060	0.000148	0.000131
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		0.0014	<0.0010	<0.0010	<0.0010	<0.0010
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L		10.0	9.22	4.67	3.22	4.18
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.0858	0.00606	0.0418	0.0209	0.0399
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		0.000137	<0.000050	0.000051	0.000071	<0.000050
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	0.00064	0.00052
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
potassium, dissolved	7440-09-7	E421	0.050	mg/L		0.970	0.906	0.421	0.373	0.310
rubidium, dissolved	7440-17-7	E421	0.00020	mg/L		0.00142	0.00149	0.00071	0.00102	0.00068
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.000069	<0.000050	0.000096	0.000108	0.000156
silicon, dissolved	7440-21-3	E421	0.050	mg/L		3.30	2.59	1.88	2.52	1.78
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, dissolved	7440-23-5	E421	0.050	mg/L		3.29	1.44	1.33	1.69	3.91
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		0.0690	0.0419	0.0319	0.0205	0.0294
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		<0.50	0.94	<0.50	0.86	<0.50
tellurium, dissolved	13494-80-9	E421	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-GERLK	NDR-SUFLK	NDR-MARKLK-SUR	CNC-DUP-02	NDR-TRIB-01
					Client sampling date / time	20-Oct-2022 11:30	21-Oct-2022 13:30	20-Oct-2022 14:45	25-Oct-2022	18-Oct-2022 12:15
						WT2219907-006	WT2219907-007	WT2219907-008	WT2219907-009	WT2219907-010
						Result	Result	Result	Result	Result
Dissolved Metals										
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
thorium, dissolved	7440-29-1	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	0.00012	<0.00010	<0.00010	<0.00010
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		0.00054	<0.00030	0.00159	0.00506	0.00217
tungsten, dissolved	7440-33-7	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		0.000033	0.000084	0.000037	0.000051	0.000053
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	0.00050	<0.00050
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		0.0012	<0.0010	0.0038	0.0041	0.0052
zirconium, dissolved	7440-67-7	E421	0.00030	mg/L		<0.00030	<0.00030	<0.00030	0.00033	<0.00030
dissolved metals filtration location	----	EP421	-	-		Field	Field	Field	Field	Field
Speciated Metals										
methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L		0.000065	0.000031	0.000094	0.000086	0.000166

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	JC-S-01	NDR-S-01	NDR-S-02	NDR-JACLK	----
					Client sampling date / time	18-Oct-2022 14:15	23-Oct-2022 11:45	17-Oct-2022 13:15	17-Oct-2022 13:15	----
						WT2219907-011	WT2219907-012	WT2219907-013	WT2219907-014	--------
						Result	Result	Result	Result	----
Physical Tests										
acidity (as CaCO3)	----	E283	2.0	mg/L		6.3	3.9	<2.0	<2.0	----
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		4.5	11.2	35.5	137	----
conductivity	----	E100	1.0	µS/cm		78.1	41.7	86.0	258	----
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L		23.2	31.4	51.0	131	----
pH	----	E108	0.10	pH units		5.67	6.50	7.38	8.31	----
solids, total dissolved [TDS]	----	E162	10	mg/L		122 DLDS	104	137 DLDS	130 DLDS	----
solids, total suspended [TSS]	----	E160	3.0	mg/L		<3.0	<3.0	3.4	<3.0	----
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		0.0131	0.0309	0.0415	0.0780	----
chloride	16887-00-6	E235.Cl	0.50	mg/L		14.1	<0.50	2.98	<0.50	----
fluoride	16984-48-8	E235.F	0.020	mg/L		<0.020	<0.020	<0.020	0.053	----
nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L		<0.020	0.026	0.021	<0.020	----
nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	----
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L		0.0073	0.0119	0.0129	0.0036	----
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		<0.30	<0.30	<0.30	1.49	----
Cyanides										
cyanide, free	----	E339	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	----
cyanide, strong acid dissociable (total)	----	E333	0.0020	mg/L		<0.0020	0.0022	<0.0020	<0.0020	----
cyanide, weak acid dissociable	----	E336	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	----
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L		0.119	0.258	0.282	0.0086	----
antimony, total	7440-36-0	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	----
arsenic, total	7440-38-2	E420	0.00010	mg/L		0.00077	0.00105	0.00105	0.00025	----
barium, total	7440-39-3	E420	0.00010	mg/L		0.00406	0.00523	0.00774	0.0147	----
beryllium, total	7440-41-7	E420	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	----
bismuth, total	7440-69-9	E420	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	----
boron, total	7440-42-8	E420	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	----
cadmium, total	7440-43-9	E420	0.0000050	mg/L		0.0000375	0.0000241	0.0000203	<0.0000050	----
calcium, total	7440-70-2	E420	0.050	mg/L		6.80	9.68	14.8	36.5	----
cesium, total	7440-46-2	E420	0.000010	mg/L		0.000010	<0.000010	0.000014	<0.000010	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	JC-S-01	NDR-S-01	NDR-S-02	NDR-JACLK	----
					Client sampling date / time	18-Oct-2022 14:15	23-Oct-2022 11:45	17-Oct-2022 13:15	17-Oct-2022 13:15	----
						WT2219907-011	WT2219907-012	WT2219907-013	WT2219907-014	--------
						Result	Result	Result	Result	----
Total Metals										
chromium, total	7440-47-3	E420	0.00050	mg/L		0.00051	0.00070	0.00083	<0.00050	----
cobalt, total	7440-48-4	E420	0.00010	mg/L		0.00012	<0.00010	0.00023	<0.00010	----
copper, total	7440-50-8	E420	0.00050	mg/L		0.00092	0.00140	0.00092	<0.00050	----
iron, total	7439-89-6	E420	0.010	mg/L		0.341	0.553	0.778	0.065	----
lead, total	7439-92-1	E420	0.000050	mg/L		0.000880	0.000200	0.000265	<0.000050	----
lithium, total	7439-93-2	E420	0.0010	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	----
magnesium, total	7439-95-4	E420	0.0050	mg/L		1.48	2.16	3.52	10.9	----
manganese, total	7439-96-5	E420	0.00010	mg/L		0.0330	0.0113	0.0783	0.0994	----
mercury, total	7439-97-6	E508-L	0.50	ng/L		2.70	5.33	1.84	<0.50	----
molybdenum, total	7439-98-7	E420	0.000050	mg/L		<0.000050	<0.000050	0.000064	0.000083	----
nickel, total	7440-02-0	E420	0.00050	mg/L		<0.00050	0.00081	0.00080	<0.00050	----
phosphorus, total	7723-14-0	E420	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	----
potassium, total	7440-09-7	E420	0.050	mg/L		0.220	0.097	0.271	1.20	----
rubidium, total	7440-17-7	E420	0.00020	mg/L		0.00047	0.00040	0.00084	0.00168	----
selenium, total	7782-49-2	E420	0.000050	mg/L		0.000157	0.000193	0.000151	<0.000050	----
silicon, total	7440-21-3	E420	0.10	mg/L		1.48	1.63	1.97	1.89	----
silver, total	7440-22-4	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	----
sodium, total	7440-23-5	E420	0.050	mg/L		8.34	0.629	2.73	1.94	----
strontium, total	7440-24-6	E420	0.00020	mg/L		0.0124	0.0170	0.0259	0.0540	----
sulfur, total	7704-34-9	E420	0.50	mg/L		<0.50	<0.50	<0.50	0.69	----
tellurium, total	13494-80-9	E420	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	----
thallium, total	7440-28-0	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	----
thorium, total	7440-29-1	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	----
tin, total	7440-31-5	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	----
titanium, total	7440-32-6	E420	0.00030	mg/L		0.00190	0.00442	0.00799	<0.00030	----
tungsten, total	7440-33-7	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	----
uranium, total	7440-61-1	E420	0.000010	mg/L		<0.000010	0.000027	0.000039	0.000042	----
vanadium, total	7440-62-2	E420	0.00050	mg/L		<0.00050	0.00055	0.00071	<0.00050	----
zinc, total	7440-66-6	E420	0.0030	mg/L		0.0107	0.0078	0.0064	<0.0030	----
zirconium, total	7440-67-7	E420	0.00020	mg/L		<0.00020	0.00034	0.00033	<0.00020	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	JC-S-01	NDR-S-01	NDR-S-02	NDR-JACLK	----
					Client sampling date / time	18-Oct-2022 14:15	23-Oct-2022 11:45	17-Oct-2022 13:15	17-Oct-2022 13:15	----
						WT2219907-011	WT2219907-012	WT2219907-013	WT2219907-014	--------
						Result	Result	Result	Result	----
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.114	0.229	0.171	0.0039	----
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00072	0.00096	0.00091	0.00020	----
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.00397	0.00482	0.00640	0.0139	----
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	----
boron, dissolved	7440-42-8	E421	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		0.0000338	0.0000279	0.0000160	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.050	mg/L		6.88	9.06	14.3	33.6	----
cesium, dissolved	7440-46-2	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	----
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		<0.00050	0.00066	0.00058	<0.00050	----
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		0.00010	<0.00010	0.00014	<0.00010	----
copper, dissolved	7440-50-8	E421	0.00020	mg/L		0.00091	0.00128	0.00078	<0.00020	----
iron, dissolved	7439-89-6	E421	0.010	mg/L		0.330	0.500	0.585	0.033	----
lead, dissolved	7439-92-1	E421	0.000050	mg/L		0.000804	0.000162	0.000152	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		<0.0010	<0.0010	<0.0010	0.0011	----
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L		1.46	2.13	3.71	11.5	----
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.0316	0.0100	0.0577	0.0634	----
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	0.000083	----
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		<0.00050	0.00078	0.00063	<0.00050	----
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	----
potassium, dissolved	7440-09-7	E421	0.050	mg/L		0.223	0.078	0.226	1.12	----
rubidium, dissolved	7440-17-7	E421	0.00020	mg/L		0.00042	0.00038	0.00062	0.00148	----
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.000126	0.000176	0.000151	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.050	mg/L		1.42	1.54	1.71	1.84	----
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.050	mg/L		8.08	0.587	2.73	1.85	----
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		0.0123	0.0164	0.0260	0.0538	----
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		<0.50	<0.50	<0.50	0.52	----
tellurium, dissolved	13494-80-9	E421	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	JC-S-01	NDR-S-01	NDR-S-02	NDR-JACLK	----
					Client sampling date / time	18-Oct-2022 14:15	23-Oct-2022 11:45	17-Oct-2022 13:15	17-Oct-2022 13:15	----
Analyte	CAS Number	Method	LOR	Unit		WT2219907-011	WT2219907-012	WT2219907-013	WT2219907-014	--------
						Result	Result	Result	Result	----
Dissolved Metals										
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	----
thorium, dissolved	7440-29-1	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	----
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		0.00170	0.00307	0.00300	<0.00030	----
tungsten, dissolved	7440-33-7	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	----
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		<0.000010	0.000023	0.000033	0.000039	----
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		0.0119	0.0074	0.0054	<0.0010	----
zirconium, dissolved	7440-67-7	E421	0.00030	mg/L		<0.00030	0.00037	<0.00030	<0.00030	----
dissolved metals filtration location	----	EP421	-	-		Field	Field	Field	Field	----
Speciated Metals										
methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L		0.000157	0.000173	0.000167	0.000031	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2219907**	Page	: 1 of 40
Client	: **WSP E&I Canada Limited**	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 2020 Winston Park Drive Suite 600 Mississauga ON Canada L6H 6X7	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2002.2021C.400.5120.573000	Date Samples Received	: 28-Oct-2022 10:00
PO	: OMEMA2002.2021C.400.5120.573000	Issue Date	: 17-Nov-2022 18:16
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: OMEMA2002		
No. of samples received	: 14		
No. of samples analysed	: 14		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers occur - please see following pages for full details.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) MATR-01	E298	25-Oct-2022	04-Nov-2022	----	----		07-Nov-2022	28 days	13 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) MATR-02	E298	25-Oct-2022	04-Nov-2022	----	----		07-Nov-2022	28 days	13 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) CNC-DUP-02	E298	25-Oct-2022	04-Nov-2022	----	----		07-Nov-2022	28 days	14 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WBR-P-03	E298	24-Oct-2022	04-Nov-2022	----	----		07-Nov-2022	28 days	14 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) WBR-P-04	E298	24-Oct-2022	04-Nov-2022	----	----		07-Nov-2022	28 days	14 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) NDR-S-01	E298	23-Oct-2022	04-Nov-2022	----	----		07-Nov-2022	28 days	15 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) NDR-SUFLK	E298	21-Oct-2022	04-Nov-2022	----	----		07-Nov-2022	28 days	17 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) NDR-GERLK	E298	20-Oct-2022	04-Nov-2022	----	----		07-Nov-2022	28 days	18 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) NDR-MARKLK-SUR	E298	20-Oct-2022	04-Nov-2022	----	----		07-Nov-2022	28 days	18 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) JC-S-01	E298	18-Oct-2022	04-Nov-2022	----	----		07-Nov-2022	28 days	20 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) NDR-TRIB-01	E298	18-Oct-2022	04-Nov-2022	----	----		07-Nov-2022	28 days	20 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) NDR-JACLK	E298	17-Oct-2022	04-Nov-2022	----	----		07-Nov-2022	28 days	21 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) NDR-S-02	E298	17-Oct-2022	04-Nov-2022	----	----		07-Nov-2022	28 days	21 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) CNC-DUP-01	E298	17-Oct-2022	04-Nov-2022	----	----		07-Nov-2022	28 days	22 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-S-01	E235.Cl	23-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	10 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-SUFLK	E235.Cl	21-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	12 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-GERLK	E235.Cl	20-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	13 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-MARKLK-SUR	E235.Cl	20-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	13 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] CNC-DUP-01	E235.Cl	17-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	28 days	15 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] JC-S-01	E235.Cl	18-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	15 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-TRIB-01	E235.Cl	18-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	15 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-JACLK	E235.Cl	17-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	16 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDR-S-02	E235.Cl	17-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	16 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MATR-01	E235.Cl	25-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MATR-02	E235.Cl	25-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	28 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] WBR-P-03	E235.Cl	24-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] WBR-P-04	E235.Cl	24-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] CNC-DUP-02	E235.Cl	25-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	9 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-S-01	E235.F	23-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	10 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-SUFLK	E235.F	21-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	12 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-GERLK	E235.F	20-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	13 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-MARKLK-SUR	E235.F	20-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	13 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] CNC-DUP-01	E235.F	17-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	28 days	15 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] JC-S-01	E235.F	18-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	15 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-TRIB-01	E235.F	18-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	15 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-JACLK	E235.F	17-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	16 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-S-02	E235.F	17-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	16 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MATR-01	E235.F	25-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MATR-02	E235.F	25-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] WBR-P-03	E235.F	24-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] WBR-P-04	E235.F	24-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] CNC-DUP-02	E235.F	25-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	9 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-S-01	E235.NO3	23-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	7 days	10 days	× EHT

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-SUFLK	E235.NO3	21-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	7 days	12 days	✖ EHTL
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-GERLK	E235.NO3	20-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	7 days	13 days	✖ EHTR-FM
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-MARKLK-SUR	E235.NO3	20-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	7 days	13 days	✖ EHTR-FM
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] CNC-DUP-01	E235.NO3	17-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	7 days	15 days	✖ EHTR-FM
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] JC-S-01	E235.NO3	18-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	7 days	15 days	✖ EHTR-FM
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-TRIB-01	E235.NO3	18-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	7 days	15 days	✖ EHTR-FM
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-JACLK	E235.NO3	17-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	7 days	16 days	✖ EHTR-FM
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-S-02	E235.NO3	17-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	7 days	16 days	✖ EHTR-FM
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MATR-01	E235.NO3	25-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	7 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MATR-02	E235.NO3	25-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	7 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] WBR-P-03	E235.NO3	24-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] WBR-P-04	E235.NO3	24-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] CNC-DUP-02	E235.NO3	25-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	7 days	9 days	× EHT
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-S-01	E235.NO2	23-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	7 days	10 days	× EHT
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-SUFLK	E235.NO2	21-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	7 days	12 days	× EHTL
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-GERLK	E235.NO2	20-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	7 days	13 days	× EHTR-FM
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-MARKLK-SUR	E235.NO2	20-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	7 days	13 days	× EHTR-FM
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] CNC-DUP-01	E235.NO2	17-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	7 days	15 days	× EHTR-FM

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] JC-S-01	E235.NO2	18-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	7 days	15 days	× EHTR-FM
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-TRIB-01	E235.NO2	18-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	7 days	15 days	× EHTR-FM
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-JACLK	E235.NO2	17-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	7 days	16 days	× EHTR-FM
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDR-S-02	E235.NO2	17-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	7 days	16 days	× EHTR-FM
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MATR-01	E235.NO2	25-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MATR-02	E235.NO2	25-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] WBR-P-03	E235.NO2	24-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	7 days	7 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] WBR-P-04	E235.NO2	24-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	7 days	7 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] CNC-DUP-02	E235.NO2	25-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	7 days	9 days	× EHT

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDR-S-01	E235.SO4	23-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	10 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDR-SUFLK	E235.SO4	21-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	12 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDR-GERLK	E235.SO4	20-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	13 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDR-MARKLK-SUR	E235.SO4	20-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	13 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] CNC-DUP-01	E235.SO4	17-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	28 days	15 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] JC-S-01	E235.SO4	18-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	15 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDR-TRIB-01	E235.SO4	18-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	15 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDR-JACLK	E235.SO4	17-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	16 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDR-S-02	E235.SO4	17-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	16 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
MATR-01	E235.SO4	25-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
MATR-02	E235.SO4	25-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
WBR-P-03	E235.SO4	24-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
WBR-P-04	E235.SO4	24-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
CNC-DUP-02	E235.SO4	25-Oct-2022	02-Nov-2022	----	----		02-Nov-2022	28 days	9 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
MATR-01	E372-U	25-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	14 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
MATR-02	E372-U	25-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	14 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
CNC-DUP-02	E372-U	25-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	15 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
WBR-P-03	E372-U	24-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	15 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
WBR-P-04	E372-U	24-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	15 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
NDR-S-01	E372-U	23-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	16 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
NDR-SUFLK	E372-U	21-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	18 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
NDR-GERLK	E372-U	20-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	19 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
NDR-MARKLK-SUR	E372-U	20-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	19 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
JC-S-01	E372-U	18-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	21 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
NDR-TRIB-01	E372-U	18-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	21 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
NDR-JACLK	E372-U	17-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	22 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
NDR-S-02	E372-U	17-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	22 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid)										
CNC-DUP-01	E372-U	17-Oct-2022	07-Nov-2022	----	----		08-Nov-2022	28 days	23 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
CNC-DUP-02	E339	25-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
WBR-P-03	E339	24-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
WBR-P-04	E339	24-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDR-S-01	E339	23-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	11 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDR-GERLK	E339	20-Oct-2022	01-Nov-2022	----	----		01-Nov-2022	14 days	12 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDR-MARKLK-SUR	E339	20-Oct-2022	01-Nov-2022	----	----		01-Nov-2022	14 days	12 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
JC-S-01	E339	18-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	14 days	13 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDR-SUFLK	E339	21-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	13 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDR-TRIB-01	E339	18-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	14 days	13 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDR-JACLK	E339	17-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	14 days	14 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDR-S-02	E339	17-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	14 days	14 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
CNC-DUP-01	E339	17-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	14 days	15 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
MATR-01	E339	25-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
MATR-02	E339	25-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
CNC-DUP-02	E333	25-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
WBR-P-03	E333	24-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
WBR-P-04	E333	24-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	10 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDR-S-01	E333	23-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	11 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDR-GERLK	E333	20-Oct-2022	01-Nov-2022	----	----		01-Nov-2022	14 days	12 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDR-MARKLK-SUR	E333	20-Oct-2022	01-Nov-2022	----	----		01-Nov-2022	14 days	12 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
JC-S-01	E333	18-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	14 days	13 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDR-SUFLK	E333	21-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	13 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDR-TRIB-01	E333	18-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	14 days	13 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDR-JACLK	E333	17-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	14 days	14 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDR-S-02	E333	17-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	14 days	14 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
CNC-DUP-01	E333	17-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	14 days	15 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
MATR-01	E333	25-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
MATR-02	E333	25-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
CNC-DUP-02	E336	25-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
WBR-P-03	E336	24-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
WBR-P-04	E336	24-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDR-S-01	E336	23-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	11 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDR-GERLK	E336	20-Oct-2022	01-Nov-2022	----	----		01-Nov-2022	14 days	12 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDR-MARKLK-SUR	E336	20-Oct-2022	01-Nov-2022	----	----		01-Nov-2022	14 days	12 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
JC-S-01	E336	18-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	14 days	13 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDR-SUFLK	E336	21-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	13 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDR-TRIB-01	E336	18-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	14 days	13 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDR-JACLK	E336	17-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	14 days	14 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
NDR-S-02	E336	17-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	14 days	14 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
CNC-DUP-01	E336	17-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	14 days	15 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
MATR-01	E336	25-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
MATR-02	E336	25-Oct-2022	03-Nov-2022	----	----		03-Nov-2022	14 days	9 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
NDR-SUFLK	E421	21-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	180 days	10 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
NDR-GERLK	E421	20-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	180 days	11 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDR-MARKLK-SUR	E421	20-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	180 days	11 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) JC-S-01	E421	18-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	180 days	13 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDR-TRIB-01	E421	18-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	180 days	13 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDR-JACLK	E421	17-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	180 days	14 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDR-S-02	E421	17-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	180 days	14 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) CNC-DUP-01	E421	17-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	180 days	15 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MATR-01	E421	25-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	180 days	6 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MATR-02	E421	25-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	180 days	6 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) CNC-DUP-02	E421	25-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	180 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) WBR-P-03	E421	24-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) WBR-P-04	E421	24-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDR-S-01	E421	23-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	180 days	8 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] MATR-01	E283	25-Oct-2022	01-Nov-2022	----	----		05-Nov-2022	14 days	11 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] MATR-02	E283	25-Oct-2022	01-Nov-2022	----	----		05-Nov-2022	14 days	11 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] CNC-DUP-02	E283	25-Oct-2022	01-Nov-2022	----	----		05-Nov-2022	14 days	12 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] WBR-P-03	E283	24-Oct-2022	01-Nov-2022	----	----		05-Nov-2022	14 days	12 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] WBR-P-04	E283	24-Oct-2022	01-Nov-2022	----	----		05-Nov-2022	14 days	12 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-S-01	E283	23-Oct-2022	01-Nov-2022	----	----		05-Nov-2022	14 days	13 days	✓

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-SUFLK	E283	21-Oct-2022	01-Nov-2022	----	----		05-Nov-2022	14 days	15 days	✖ EHT
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-GERLK	E283	20-Oct-2022	01-Nov-2022	----	----		05-Nov-2022	14 days	16 days	✖ EHT
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-MARKLK-SUR	E283	20-Oct-2022	01-Nov-2022	----	----		05-Nov-2022	14 days	16 days	✖ EHT
Physical Tests : Acidity by Titration										
HDPE [ON MECP] JC-S-01	E283	18-Oct-2022	01-Nov-2022	----	----		05-Nov-2022	14 days	18 days	✖ EHT
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-TRIB-01	E283	18-Oct-2022	01-Nov-2022	----	----		05-Nov-2022	14 days	18 days	✖ EHT
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-JACLK	E283	17-Oct-2022	01-Nov-2022	----	----		05-Nov-2022	14 days	19 days	✖ EHT
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-S-02	E283	17-Oct-2022	01-Nov-2022	----	----		05-Nov-2022	14 days	19 days	✖ EHT
Physical Tests : Acidity by Titration										
HDPE [ON MECP] CNC-DUP-01	E283	17-Oct-2022	01-Nov-2022	----	----		05-Nov-2022	14 days	20 days	✖ EHT
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] CNC-DUP-02	E290	25-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	14 days	10 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-S-01	E290	23-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	14 days	11 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-SUFLK	E290	21-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	14 days	13 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-GERLK	E290	20-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	14 days	14 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-MARKLK-SUR	E290	20-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	14 days	14 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] JC-S-01	E290	18-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	14 days	16 days	× EHT
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-TRIB-01	E290	18-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	14 days	16 days	× EHT
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] CNC-DUP-01	E290	17-Oct-2022	31-Oct-2022	----	----		02-Nov-2022	14 days	17 days	× EHT
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-JACLK	E290	17-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	14 days	17 days	× EHT
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-S-02	E290	17-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	14 days	17 days	× EHT

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
MATR-01	E290	25-Oct-2022	31-Oct-2022	----	----		02-Nov-2022	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
MATR-02	E290	25-Oct-2022	31-Oct-2022	----	----		02-Nov-2022	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
WBR-P-03	E290	24-Oct-2022	31-Oct-2022	----	----		02-Nov-2022	14 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
WBR-P-04	E290	24-Oct-2022	31-Oct-2022	----	----		02-Nov-2022	14 days	9 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP]										
CNC-DUP-02	E100	25-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	28 days	10 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP]										
NDR-S-01	E100	23-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	28 days	11 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP]										
NDR-SUFLK	E100	21-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	28 days	13 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP]										
NDR-GERLK	E100	20-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	28 days	14 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP]										
NDR-MARKLK-SUR	E100	20-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	28 days	14 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE [ON MECP] JC-S-01	E100	18-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	28 days	16 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-TRIB-01	E100	18-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	28 days	16 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] CNC-DUP-01	E100	17-Oct-2022	31-Oct-2022	----	----		02-Nov-2022	28 days	17 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-JACLK	E100	17-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	28 days	17 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-S-02	E100	17-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	28 days	17 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] MATR-01	E100	25-Oct-2022	31-Oct-2022	----	----		02-Nov-2022	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] MATR-02	E100	25-Oct-2022	31-Oct-2022	----	----		02-Nov-2022	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] WBR-P-03	E100	24-Oct-2022	31-Oct-2022	----	----		02-Nov-2022	28 days	9 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] WBR-P-04	E100	24-Oct-2022	31-Oct-2022	----	----		02-Nov-2022	28 days	9 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE [ON MECP] CNC-DUP-02	E108	25-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	14 days	10 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-S-01	E108	23-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	14 days	11 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-SUFLK	E108	21-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	14 days	13 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-GERLK	E108	20-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	14 days	14 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-MARKLK-SUR	E108	20-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	14 days	14 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] JC-S-01	E108	18-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	14 days	16 days	× EHT
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-TRIB-01	E108	18-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	14 days	16 days	× EHT
Physical Tests : pH by Meter										
HDPE [ON MECP] CNC-DUP-01	E108	17-Oct-2022	31-Oct-2022	----	----		02-Nov-2022	14 days	17 days	× EHT
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-JACLK	E108	17-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	14 days	17 days	× EHT

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-S-02	E108	17-Oct-2022	02-Nov-2022	----	----		03-Nov-2022	14 days	17 days	✖ EHT
Physical Tests : pH by Meter										
HDPE [ON MECP] MATR-01	E108	25-Oct-2022	31-Oct-2022	----	----		02-Nov-2022	14 days	8 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MATR-02	E108	25-Oct-2022	31-Oct-2022	----	----		02-Nov-2022	14 days	8 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] WBR-P-03	E108	24-Oct-2022	31-Oct-2022	----	----		02-Nov-2022	14 days	9 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] WBR-P-04	E108	24-Oct-2022	31-Oct-2022	----	----		02-Nov-2022	14 days	9 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-GERLK	E162	20-Oct-2022	----	----	----		03-Nov-2022	7 days	14 days	✖ EHTR
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-S-01	E162	23-Oct-2022	----	----	----		09-Nov-2022	7 days	17 days	✖ EHT
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] CNC-DUP-01	E162	17-Oct-2022	----	----	----		03-Nov-2022	7 days	18 days	✖ EHTR
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-SUFLK	E162	21-Oct-2022	----	----	----		09-Nov-2022	7 days	19 days	✖ EHTL

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-MARKLK-SUR	E162	20-Oct-2022	----	----	----		09-Nov-2022	7 days	20 days	× EHTR
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] JC-S-01	E162	18-Oct-2022	----	----	----		09-Nov-2022	7 days	22 days	× EHTR
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-TRIB-01	E162	18-Oct-2022	----	----	----		09-Nov-2022	7 days	22 days	× EHTR
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-JACLK	E162	17-Oct-2022	----	----	----		09-Nov-2022	7 days	23 days	× EHTR
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-S-02	E162	17-Oct-2022	----	----	----		09-Nov-2022	7 days	23 days	× EHTR
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] CNC-DUP-02	E162	25-Oct-2022	----	----	----		31-Oct-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MATR-01	E162	25-Oct-2022	----	----	----		01-Nov-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MATR-02	E162	25-Oct-2022	----	----	----		01-Nov-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] WBR-P-03	E162	24-Oct-2022	----	----	----		31-Oct-2022	7 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP]										
WBR-P-04	E162	24-Oct-2022	----	----	----		31-Oct-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
NDR-GERLK	E160	20-Oct-2022	----	----	----		03-Nov-2022	7 days	14 days	× EHTR
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
NDR-MARKLK-SUR	E160	20-Oct-2022	----	----	----		03-Nov-2022	7 days	14 days	× EHTR
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
NDR-S-01	E160	23-Oct-2022	----	----	----		09-Nov-2022	7 days	17 days	× EHT
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
CNC-DUP-01	E160	17-Oct-2022	----	----	----		03-Nov-2022	7 days	18 days	× EHTR
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
NDR-SUFLK	E160	21-Oct-2022	----	----	----		09-Nov-2022	7 days	19 days	× EHTL
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
JC-S-01	E160	18-Oct-2022	----	----	----		09-Nov-2022	7 days	22 days	× EHTR
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
NDR-TRIB-01	E160	18-Oct-2022	----	----	----		09-Nov-2022	7 days	22 days	× EHTR
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP]										
NDR-JACLK	E160	17-Oct-2022	----	----	----		09-Nov-2022	7 days	23 days	× EHTR

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-S-02	E160	17-Oct-2022	----	----	----		09-Nov-2022	7 days	23 days	✖ EHTR
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] MATR-01	E160	25-Oct-2022	----	----	----		31-Oct-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] MATR-02	E160	25-Oct-2022	----	----	----		31-Oct-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] CNC-DUP-02	E160	25-Oct-2022	----	----	----		31-Oct-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] WBR-P-03	E160	24-Oct-2022	----	----	----		31-Oct-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] WBR-P-04	E160	24-Oct-2022	----	----	----		31-Oct-2022	7 days	7 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Pre-cleaned FLPE - total (lab preserved) CNC-DUP-02	E536	25-Oct-2022	05-Nov-2022	----	----		10-Nov-2022	180 days	16 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Pre-cleaned FLPE - total (lab preserved) MATR-01	E536	25-Oct-2022	05-Nov-2022	----	----		10-Nov-2022	180 days	16 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Pre-cleaned FLPE - total (lab preserved) MATR-02	E536	25-Oct-2022	05-Nov-2022	----	----		10-Nov-2022	180 days	16 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Speciated Metals : Total Methylmercury in Water by GCAFS										
Pre-cleaned FLPE - total (lab preserved)										
WBR-P-03	E536	24-Oct-2022	05-Nov-2022	----	----		10-Nov-2022	180 days	17 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Pre-cleaned FLPE - total (lab preserved)										
WBR-P-04	E536	24-Oct-2022	05-Nov-2022	----	----		10-Nov-2022	180 days	17 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Pre-cleaned FLPE - total (lab preserved)										
NDR-S-01	E536	23-Oct-2022	10-Nov-2022	----	----		10-Nov-2022	180 days	18 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Pre-cleaned FLPE - total (lab preserved)										
NDR-SUFLK	E536	21-Oct-2022	05-Nov-2022	----	----		10-Nov-2022	180 days	20 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Pre-cleaned FLPE - total (lab preserved)										
NDR-GERLK	E536	20-Oct-2022	05-Nov-2022	----	----		10-Nov-2022	180 days	21 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Pre-cleaned FLPE - total (lab preserved)										
NDR-MARKLK-SUR	E536	20-Oct-2022	05-Nov-2022	----	----		10-Nov-2022	180 days	21 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Pre-cleaned FLPE - total (lab preserved)										
JC-S-01	E536	18-Oct-2022	10-Nov-2022	----	----		10-Nov-2022	180 days	23 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Pre-cleaned FLPE - total (lab preserved)										
NDR-TRIB-01	E536	18-Oct-2022	10-Nov-2022	----	----		10-Nov-2022	180 days	23 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Pre-cleaned FLPE - total (lab preserved)										
CNC-DUP-01	E536	17-Oct-2022	05-Nov-2022	----	----		10-Nov-2022	180 days	24 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Speciated Metals : Total Methylmercury in Water by GCAFS										
Pre-cleaned FLPE - total (lab preserved) NDR-JACLK	E536	17-Oct-2022	10-Nov-2022	----	----		10-Nov-2022	180 days	24 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Pre-cleaned FLPE - total (lab preserved) NDR-S-02	E536	17-Oct-2022	10-Nov-2022	----	----		10-Nov-2022	180 days	24 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) MATR-01	E508-L	25-Oct-2022	09-Nov-2022	28 days	15 days	✓	09-Nov-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) MATR-02	E508-L	25-Oct-2022	09-Nov-2022	28 days	15 days	✓	09-Nov-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) CNC-DUP-02	E508-L	25-Oct-2022	09-Nov-2022	28 days	16 days	✓	09-Nov-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) WBR-P-03	E508-L	24-Oct-2022	09-Nov-2022	28 days	16 days	✓	09-Nov-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) WBR-P-04	E508-L	24-Oct-2022	09-Nov-2022	28 days	16 days	✓	09-Nov-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) NDR-S-01	E508-L	23-Oct-2022	09-Nov-2022	28 days	17 days	✓	09-Nov-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) NDR-SUFLK	E508-L	21-Oct-2022	09-Nov-2022	28 days	19 days	✓	09-Nov-2022	28 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved)										
NDR-GERLK	E508-L	20-Oct-2022	09-Nov-2022	28 days	20 days	✓	09-Nov-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved)										
NDR-MARKLK-SUR	E508-L	20-Oct-2022	09-Nov-2022	28 days	20 days	✓	09-Nov-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved)										
JC-S-01	E508-L	18-Oct-2022	09-Nov-2022	28 days	22 days	✓	09-Nov-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved)										
NDR-TRIB-01	E508-L	18-Oct-2022	09-Nov-2022	28 days	22 days	✓	09-Nov-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved)										
NDR-JACLK	E508-L	17-Oct-2022	09-Nov-2022	28 days	23 days	✓	09-Nov-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved)										
NDR-S-02	E508-L	17-Oct-2022	09-Nov-2022	28 days	23 days	✓	09-Nov-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved)										
CNC-DUP-01	E508-L	17-Oct-2022	09-Nov-2022	28 days	24 days	✓	09-Nov-2022	28 days	0 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
NDR-SUFLK	E420	21-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	180 days	10 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
NDR-GERLK	E420	20-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	180 days	11 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDR-MARKLK-SUR	E420	20-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	180 days	11 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) JC-S-01	E420	18-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	180 days	13 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDR-TRIB-01	E420	18-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	180 days	13 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) CNC-DUP-01	E420	17-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	180 days	14 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDR-JACLK	E420	17-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	180 days	14 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDR-S-02	E420	17-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	180 days	14 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) CNC-DUP-02	E420	25-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	180 days	6 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) MATR-01	E420	25-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	180 days	6 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) MATR-02	E420	25-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	180 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
WBR-P-03	E420	24-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	180 days	7 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
WBR-P-04	E420	24-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	180 days	7 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
NDR-S-01	E420	23-Oct-2022	31-Oct-2022	----	----		31-Oct-2022	180 days	8 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	724672	1	19	5.2	5.0	✓
Alkalinity Species by Titration	E290	722969	2	29	6.9	5.0	✓
Ammonia by Fluorescence	E298	731205	1	19	5.2	5.0	✓
Chloride in Water by IC	E235.Cl	722960	2	33	6.0	5.0	✓
Conductivity in Water	E100	722968	2	29	6.9	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	722924	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	722961	2	30	6.6	5.0	✓
Free Cyanide	E339	723234	3	24	12.5	5.0	✓
Nitrate in Water by IC	E235.NO3	722962	2	34	5.8	5.0	✓
Nitrite in Water by IC	E235.NO2	722963	2	29	6.9	5.0	✓
pH by Meter	E108	722967	2	40	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	722964	2	30	6.6	5.0	✓
TDS by Gravimetry	E162	723065	4	77	5.1	5.0	✓
Total Cyanide	E333	723232	3	50	6.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	736841	1	14	7.1	5.0	✓
Total metals in Water by CRC ICPMS	E420	722504	1	20	5.0	5.0	✓
Total Methylmercury in Water by GCAFS	E536	731729	2	38	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	731204	1	19	5.2	5.0	✓
TSS by Gravimetry	E160	723082	4	76	5.2	4.7	✓
WAD Cyanide	E336	723233	3	32	9.3	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	724672	1	19	5.2	5.0	✓
Alkalinity Species by Titration	E290	722969	2	29	6.9	5.0	✓
Ammonia by Fluorescence	E298	731205	1	19	5.2	5.0	✓
Chloride in Water by IC	E235.Cl	722960	2	33	6.0	5.0	✓
Conductivity in Water	E100	722968	2	29	6.9	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	722924	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	722961	2	30	6.6	5.0	✓
Free Cyanide	E339	723234	3	24	12.5	5.0	✓
Nitrate in Water by IC	E235.NO3	722962	2	34	5.8	5.0	✓
Nitrite in Water by IC	E235.NO2	722963	2	29	6.9	5.0	✓
pH by Meter	E108	722967	2	40	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	722964	2	30	6.6	5.0	✓
TDS by Gravimetry	E162	723065	4	77	5.1	5.0	✓
Total Cyanide	E333	723232	3	50	6.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	736841	1	14	7.1	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Total metals in Water by CRC ICPMS	E420	722504	1	20	5.0	5.0	✓
Total Methylmercury in Water by GCAFS	E536	731729	2	38	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	731204	1	19	5.2	5.0	✓
TSS by Gravimetry	E160	723082	4	76	5.2	4.7	✓
WAD Cyanide	E336	723233	3	32	9.3	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	724672	1	19	5.2	5.0	✓
Alkalinity Species by Titration	E290	722969	2	29	6.9	5.0	✓
Ammonia by Fluorescence	E298	731205	1	19	5.2	5.0	✓
Chloride in Water by IC	E235.Cl	722960	2	33	6.0	5.0	✓
Conductivity in Water	E100	722968	2	29	6.9	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	722924	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	722961	2	30	6.6	5.0	✓
Free Cyanide	E339	723234	3	24	12.5	5.0	✓
Nitrate in Water by IC	E235.NO3	722962	2	34	5.8	5.0	✓
Nitrite in Water by IC	E235.NO2	722963	2	29	6.9	5.0	✓
Sulfate in Water by IC	E235.SO4	722964	2	30	6.6	5.0	✓
TDS by Gravimetry	E162	723065	4	77	5.1	5.0	✓
Total Cyanide	E333	723232	3	50	6.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	736841	1	14	7.1	5.0	✓
Total metals in Water by CRC ICPMS	E420	722504	1	20	5.0	5.0	✓
Total Methylmercury in Water by GCAFS	E536	731729	2	38	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	731204	1	19	5.2	5.0	✓
TSS by Gravimetry	E160	723082	4	76	5.2	4.7	✓
WAD Cyanide	E336	723233	3	32	9.3	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	731205	1	19	5.2	5.0	✓
Chloride in Water by IC	E235.Cl	722960	2	33	6.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	722924	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	722961	2	30	6.6	5.0	✓
Free Cyanide	E339	723234	3	24	12.5	5.0	✓
Nitrate in Water by IC	E235.NO3	722962	2	34	5.8	5.0	✓
Nitrite in Water by IC	E235.NO2	722963	2	29	6.9	5.0	✓
Sulfate in Water by IC	E235.SO4	722964	2	30	6.6	5.0	✓
Total Cyanide	E333	723232	3	50	6.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	736841	1	14	7.1	5.0	✓
Total metals in Water by CRC ICPMS	E420	722504	1	20	5.0	5.0	✓
Total Methylmercury in Water by GCAFS	E536	731729	1	38	2.6	5.0	×
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	731204	1	19	5.2	5.0	✓

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
WAD Cyanide	E336	723233	3	32	9.3	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Waterloo - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Waterloo - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry	E160 Waterloo - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Waterloo - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Chloride in Water by IC	E235.Cl Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC	E235.NO2 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC	E235.NO3 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
	Waterloo - Environmental			
Alkalinity Species by Titration	E290 Waterloo - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Waterloo - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Cyanide	E333 Waterloo - Environmental	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336 Waterloo - Environmental	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339 Waterloo - Environmental	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Waterloo - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total metals in Water by CRC ICPMS	E420 Waterloo - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 Waterloo - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Methylmercury in Water by GCAFS	E536 Vancouver - Environmental	Water	EPA 1630 (mod)	This method follows Method 1630 of the US EPA. Samples are distilled under an inert gas flow to isolate methylmercury and minimize matrix interferences. The distillate is analyzed by aqueous phase ethylation, purge and trap, desorption and GC separation. The separated species are then pyrolized to elemental Hg and quantified by cold vapour atomic flourescence spectroscopy. Results are reported "as MeHg".
Dissolved Hardness (Calculated)	EC100 Waterloo - Environmental	Water	APHA 2340B	“Hardness (as CaCO3), dissolved” is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. “Total Hardness” refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Waterloo - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for Total Phosphorus in water	EP372 Waterloo - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Waterloo - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Total Methylmercury Water Preparation	EP536 Vancouver - Environmental	Water	EPA 1630	This method follows Method 1630 of the US EPA. Samples are distilled under an inert gas flow to isolate methylmercury and minimize matrix interferences. The distillate is analyzed by aqueous phase ethylation, purge and trap, desorption and GC separation. The separated species are then pyrolized to elemental Hg and quantified by cold vapour atomic flourescence spectroscopy. Results are reported "as MeHg".

QUALITY CONTROL REPORT

Work Order	: **WT2219907**	Page	: 1 of 21
Client	: WSP E&I Canada Limited	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 2020 Winston Park Drive Suite 600 Mississauga ON Canada L6H 6X7	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	:	Telephone	: +1 519 886 6910
Project	: OMEMA2002.2021C.400.5120.573000	Date Samples Received	: 28-Oct-2022 10:00
PO	: OMEMA2002.2021C.400.5120.573000	Date Analysis Commenced	: 31-Oct-2022
C-O-C number	: ----	Issue Date	: 17-Nov-2022 18:16
Sampler	: ---- 905 568 2929, Ext. 4140		
Site	: ----		
Quote number	: OMEMA2002		
No. of samples received	: 14		
No. of samples analysed	: 14		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Greg Pokocky	Supervisor - Inorganic	Waterloo Inorganics, Waterloo, Ontario
Greg Pokocky	Supervisor - Inorganic	Waterloo Metals, Waterloo, Ontario
Hamideh Moradi	Analyst	Vancouver Metals, Burnaby, British Columbia
Jayden Piattelli	Analyst	Vancouver Metals, Burnaby, British Columbia
Jon Fisher	Department Manager - Inorganics	Waterloo Inorganics, Waterloo, Ontario
Kinny Wu	Lab Analyst	Vancouver Metals, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 722967)											
WT2219367-005	Anonymous	pH	----	E108	0.10	pH units	7.28	7.33	0.684%	4%	----
Physical Tests (QC Lot: 722968)											
WT2219367-005	Anonymous	conductivity	----	E100	1.0	µS/cm	1630	1660	1.46%	10%	----
Physical Tests (QC Lot: 722969)											
WT2219367-005	Anonymous	alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	820	820	0.00%	20%	----
Physical Tests (QC Lot: 723065)											
WT2219899-001	Anonymous	solids, total dissolved [TDS]	----	E162	20	mg/L	1470	1500	1.58%	20%	----
Physical Tests (QC Lot: 723082)											
WT2219500-001	Anonymous	solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 724672)											
WP2204602-005	Anonymous	acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 724933)											
WT2219647-002	Anonymous	solids, total dissolved [TDS]	----	E162	20	mg/L	492	488	1.02%	20%	----
Physical Tests (QC Lot: 726526)											
WT2219907-007	NDR-SUFLK	pH	----	E108	0.10	pH units	8.23	8.23	0.00%	4%	----
Physical Tests (QC Lot: 726527)											
WT2219907-007	NDR-SUFLK	alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	125	127	1.28%	20%	----
Physical Tests (QC Lot: 726528)											
WT2219907-007	NDR-SUFLK	conductivity	----	E100	1.0	µS/cm	236	237	0.423%	10%	----
Physical Tests (QC Lot: 728570)											
WT2219907-008	NDR-MARKLK-SUR	solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 729023)											
WT2219907-003	CNC-DUP-01	solids, total dissolved [TDS]	----	E162	13	mg/L	114	114	0	Diff <2x LOR	----
Physical Tests (QC Lot: 729032)											
WT2219907-003	CNC-DUP-01	solids, total suspended [TSS]	----	E160	5.0	mg/L	5.2	<5.0	0.2	Diff <2x LOR	----
Physical Tests (QC Lot: 736908)											
WT2219907-014	NDR-JACLK	solids, total dissolved [TDS]	----	E162	20	mg/L	130	130	0	Diff <2x LOR	----
Physical Tests (QC Lot: 736956)											
WT2219907-014	NDR-JACLK	solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 722960)											

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Anions and Nutrients (QC Lot: 722960) - continued											
WT2219497-001	Anonymous	chloride	16887-00-6	E235.Cl	0.50	mg/L	20.5	20.5	0.209%	20%	----
Anions and Nutrients (QC Lot: 722961)											
WT2219497-001	Anonymous	fluoride	16984-48-8	E235.F	0.020	mg/L	0.058	0.059	0.001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 722962)											
WT2219497-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 722963)											
WT2219497-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 722964)											
WT2219497-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	48.8	49.0	0.373%	20%	----
Anions and Nutrients (QC Lot: 726521)											
WT2219907-006	NDR-GERLK	chloride	16887-00-6	E235.Cl	0.50	mg/L	0.58	0.55	0.02	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 726522)											
WT2219907-006	NDR-GERLK	nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 726523)											
WT2219907-006	NDR-GERLK	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	1.07	1.06	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 726524)											
WT2219907-006	NDR-GERLK	nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 726525)											
WT2219907-006	NDR-GERLK	fluoride	16984-48-8	E235.F	0.020	mg/L	0.062	0.061	0.0005	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 731204)											
WT2219907-001	MATR-02	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0047	0.0050	0.0003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 731205)											
WT2219907-002	MATR-01	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0189	0.0194	0.0005	Diff <2x LOR	----
Cyanides (QC Lot: 723232)											
WT2219457-003	Anonymous	cyanide, strong acid dissociable (total)	----	E333	0.0200	mg/L	<0.0200	<0.0200	0	Diff <2x LOR	----
Cyanides (QC Lot: 723233)											
WT2219457-003	Anonymous	cyanide, weak acid dissociable	----	E336	0.0200	mg/L	<0.0200	<0.0200	0	Diff <2x LOR	----
Cyanides (QC Lot: 723234)											
WT2219457-003	Anonymous	cyanide, free	----	E339	0.0200	mg/L	<0.0200	<0.0200	0	Diff <2x LOR	----
Cyanides (QC Lot: 725107)											
TY2203475-001	Anonymous	cyanide, strong acid dissociable (total)	----	E333	0.0100	mg/L	0.956	0.965	0.973%	20%	----
Cyanides (QC Lot: 725108)											

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Cyanides (QC Lot: 725108) - continued											
WT2219720-001	Anonymous	cyanide, weak acid dissociable	----	E336	0.0100	mg/L	<0.0100	<0.0100	0	Diff <2x LOR	----
Cyanides (QC Lot: 725109)											
WT2219720-001	Anonymous	cyanide, free	----	E339	0.0100	mg/L	<0.0100	<0.0100	0	Diff <2x LOR	----
Cyanides (QC Lot: 728776)											
WT2219907-001	MATR-02	cyanide, strong acid dissociable (total)	----	E333	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Cyanides (QC Lot: 728777)											
WT2219907-001	MATR-02	cyanide, free	----	E339	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Cyanides (QC Lot: 728781)											
WT2219907-001	MATR-02	cyanide, weak acid dissociable	----	E336	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Total Metals (QC Lot: 722504)											
WT2219907-001	MATR-02	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.315	0.318	0.852%	20%	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00062	0.00063	0.00001	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.00702	0.00700	0.251%	20%	----
		beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000181	0.0000171	0.0000010	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.050	mg/L	12.7	12.8	0.817%	20%	----
		cesium, total	7440-46-2	E420	0.000010	mg/L	0.000028	0.000028	0.0000002	Diff <2x LOR	----
		chromium, total	7440-47-3	E420	0.00050	mg/L	0.00091	0.00093	0.00002	Diff <2x LOR	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	0.00018	0.00019	0.000002	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	0.00125	0.00133	0.00008	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	0.493	0.494	0.229%	20%	----
		lead, total	7439-92-1	E420	0.000050	mg/L	0.000190	0.000191	0.000001	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	3.05	3.04	0.167%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.0224	0.0225	0.102%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000078	0.000077	0.0000004	Diff <2x LOR	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	0.00083	0.00088	0.00005	Diff <2x LOR	----
		phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.050	mg/L	0.410	0.418	0.008	Diff <2x LOR	----
		rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00132	0.00131	0.000008	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 722504) - continued											
WT2219907-001	MATR-02	selenium, total	7782-49-2	E420	0.000050	mg/L	0.000118	0.000113	0.000005	Diff <2x LOR	----
		silicon, total	7440-21-3	E420	0.10	mg/L	2.97	2.86	3.60%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	1.77	1.77	0.0339%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.0207	0.0207	0.136%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	0.98	1.02	0.04	Diff <2x LOR	----
		tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	0.0104	0.0107	2.97%	20%	----
		tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.000062	0.000059	0.000003	Diff <2x LOR	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00080	0.00081	0.00001	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	0.0041	0.0041	0.00007	Diff <2x LOR	----
		zirconium, total	7440-67-7	E420	0.00020	mg/L	0.00034	0.00036	0.00002	Diff <2x LOR	----
Total Metals (QC Lot: 736841)											
WT2219907-001	MATR-02	mercury, total	7439-97-6	E508-L	0.50	ng/L	4.62	4.39	0.24	Diff <2x LOR	----
Dissolved Metals (QC Lot: 722924)											
WT2219765-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00579	0.00590	1.74%	20%	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0348	0.0340	2.32%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.110	0.116	4.86%	20%	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	39.1	41.1	5.12%	20%	----
		cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.00015	0.00014	0.000004	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00076	0.00077	0.000008	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	0.159	0.159	0.194%	20%	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	0.000140	0.000136	0.000004	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 722924) - continued											
WT2219765-001	Anonymous	lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0028	0.0030	0.0002	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	16.4	16.3	0.745%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00888	0.00882	0.715%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0104	0.0103	1.68%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.908	0.900	0.941%	20%	----
		rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00056	0.00061	0.00006	Diff <2x LOR	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	4.29	4.30	0.187%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	36.1	36.1	0.133%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	1.06	1.03	2.57%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	31.6	31.2	1.23%	20%	----
		tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000028	0.000025	0.000002	Diff <2x LOR	----
		thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000271	0.000264	2.50%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0165	0.0164	0.627%	20%	----
		zirconium, dissolved	7440-67-7	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 731729)											
VA22C5880-001	Anonymous	methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 733074)											
TY2203509-001	Anonymous	methylmercury (as MeHg), total	22967-92-6	E536	0.000040	µg/L	0.000078	0.000085	0.000006	Diff <2x LOR	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 722968)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 722969)						
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 723065)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 723082)						
solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 724672)						
acidity (as CaCO3)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 724933)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 726527)						
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 726528)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 728570)						
solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 729023)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 729032)						
solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 736908)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 736956)						
solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Anions and Nutrients (QCLot: 722960)						
chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 722961)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 722962)						
nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 722963)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 722963) - continued						
nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 722964)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 726521)						
chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 726522)						
nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 726523)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 726524)						
nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 726525)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 731204)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 731205)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Cyanides (QCLot: 723232)						
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 723233)						
cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 723234)						
cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 725107)						
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 725108)						
cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 725109)						
cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 728776)						
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 728777)						
cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 728781)						
cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 722504)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 722504) - continued						
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----
Total Metals (QCLot: 736841)						
mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Dissolved Metals (QCLot: 722924)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 722924) - continued						
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Speciated Metals (QCLot: 731729)						
methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	<0.000020	----
Speciated Metals (QCLot: 733074)						
methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	<0.000020	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 722967)									
pH	----	E108	----	pH units	7 pH units	101	98.0	102	----
Physical Tests (QCLot: 722968)									
conductivity	----	E100	1	µS/cm	1409 µS/cm	97.9	90.0	110	----
Physical Tests (QCLot: 722969)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	150 mg/L	104	85.0	115	----
Physical Tests (QCLot: 723065)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	111	85.0	115	----
Physical Tests (QCLot: 723082)									
solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	103	85.0	115	----
Physical Tests (QCLot: 724672)									
acidity (as CaCO3)	----	E283	2	mg/L	50 mg/L	103	85.0	115	----
Physical Tests (QCLot: 724933)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	106	85.0	115	----
Physical Tests (QCLot: 726526)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 726527)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	150 mg/L	104	85.0	115	----
Physical Tests (QCLot: 726528)									
conductivity	----	E100	1	µS/cm	1409 µS/cm	99.4	90.0	110	----
Physical Tests (QCLot: 728570)									
solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	101	85.0	115	----
Physical Tests (QCLot: 729023)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	100	85.0	115	----
Physical Tests (QCLot: 729032)									
solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	98.5	85.0	115	----
Physical Tests (QCLot: 736908)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	95.4	85.0	115	----
Physical Tests (QCLot: 736956)									
solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	95.0	85.0	115	----
Anions and Nutrients (QCLot: 722960)									
chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	100	90.0	110	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 722961)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.4	90.0	110	----
Anions and Nutrients (QCLot: 722962)									
nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	99.4	90.0	110	----
Anions and Nutrients (QCLot: 722963)									
nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	98.6	90.0	110	----
Anions and Nutrients (QCLot: 722964)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 726521)									
chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 726522)									
nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	99.4	90.0	110	----
Anions and Nutrients (QCLot: 726523)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	99.3	90.0	110	----
Anions and Nutrients (QCLot: 726524)									
nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	99.4	90.0	110	----
Anions and Nutrients (QCLot: 726525)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.9	90.0	110	----
Anions and Nutrients (QCLot: 731204)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.53 mg/L	98.9	80.0	120	----
Anions and Nutrients (QCLot: 731205)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	94.9	85.0	115	----
Cyanides (QCLot: 723232)									
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	0.25 mg/L	98.6	80.0	120	----
Cyanides (QCLot: 723233)									
cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	109	80.0	120	----
Cyanides (QCLot: 723234)									
cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	93.3	80.0	120	----
Cyanides (QCLot: 725107)									
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	0.25 mg/L	96.6	80.0	120	----
Cyanides (QCLot: 725108)									
cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	108	80.0	120	----
Cyanides (QCLot: 725109)									
cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	110	80.0	120	----
Cyanides (QCLot: 728776)									

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Concentration	LCS	Low	High	Qualifier
Cyanides (QCLot: 728776) - continued									
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	0.25 mg/L	95.2	80.0	120	----
Cyanides (QCLot: 728777)									
cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	105	80.0	120	----
Cyanides (QCLot: 728781)									
cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	105	80.0	120	----
Total Metals (QCLot: 722504)									
aluminum, total	7429-90-5	E420	0.003	mg/L	0.1 mg/L	107	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	0.05 mg/L	110	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	0.05 mg/L	114	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.0125 mg/L	110	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.005 mg/L	106	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	0.05 mg/L	109	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	0.05 mg/L	103	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.005 mg/L	109	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	2.5 mg/L	105	80.0	120	----
cesium, total	7440-46-2	E420	0.00001	mg/L	0.0025 mg/L	114	80.0	120	----
chromium, total	7440-47-3	E420	0.0005	mg/L	0.0125 mg/L	109	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.0125 mg/L	110	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.0125 mg/L	107	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	0.05 mg/L	116	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.025 mg/L	112	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.0125 mg/L	102	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	2.5 mg/L	106	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.0125 mg/L	108	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.0125 mg/L	108	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.025 mg/L	110	80.0	120	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	0.5 mg/L	112	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	2.5 mg/L	108	80.0	120	----
rubidium, total	7440-17-7	E420	0.0002	mg/L	0.005 mg/L	114	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	0.05 mg/L	112	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	0.5 mg/L	110	80.0	120	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.005 mg/L	103	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	2.5 mg/L	109	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.0125 mg/L	108	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	2.5 mg/L	104	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 722504) - continued									
tellurium, total	13494-80-9	E420	0.0002	mg/L	0.005 mg/L	107	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	0.05 mg/L	109	80.0	120	----
thorium, total	7440-29-1	E420	0.0001	mg/L	0.005 mg/L	114	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.025 mg/L	110	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.0125 mg/L	106	80.0	120	----
tungsten, total	7440-33-7	E420	0.0001	mg/L	0.005 mg/L	109	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.00025 mg/L	115	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.025 mg/L	109	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.025 mg/L	109	80.0	120	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	0.005 mg/L	108	80.0	120	----
Total Metals (QCLot: 736841)									
mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	100	80.0	120	----
Dissolved Metals (QCLot: 722924)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	0.1 mg/L	99.3	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	0.05 mg/L	97.3	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	0.05 mg/L	103	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.0125 mg/L	100.0	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.005 mg/L	92.8	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	0.05 mg/L	101	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	0.05 mg/L	91.1	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.005 mg/L	102	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	2.5 mg/L	99.7	80.0	120	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.0025 mg/L	101	80.0	120	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.0125 mg/L	96.6	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.0125 mg/L	97.7	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.0125 mg/L	96.8	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	0.05 mg/L	99.3	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.025 mg/L	104	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.0125 mg/L	83.7	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	2.5 mg/L	103	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.0125 mg/L	101	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.0125 mg/L	96.6	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.025 mg/L	98.3	80.0	120	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	0.5 mg/L	90.8	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	2.5 mg/L	95.0	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 722924) - continued									
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.005 mg/L	111	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	0.05 mg/L	103	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	0.5 mg/L	98.9	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.005 mg/L	100	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	2.5 mg/L	100	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.0125 mg/L	100	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	2.5 mg/L	93.4	80.0	120	----
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.005 mg/L	100	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	0.05 mg/L	101	80.0	120	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.005 mg/L	101	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.025 mg/L	98.7	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.0125 mg/L	94.8	80.0	120	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.005 mg/L	97.8	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.00025 mg/L	108	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.025 mg/L	98.3	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.025 mg/L	98.6	80.0	120	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.005 mg/L	94.6	80.0	120	----
Speciated Metals (QCLot: 731729)									
methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	0.0025 µg/L	81.2	70.0	130	----
Speciated Metals (QCLot: 733074)									
methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	0.0025 µg/L	82.4	70.0	130	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 722960)										
WT2219497-001	Anonymous	chloride	16887-00-6	E235.Cl	96.9 mg/L	100 mg/L	96.9	75.0	125	----
Anions and Nutrients (QCLot: 722961)										
WT2219497-001	Anonymous	fluoride	16984-48-8	E235.F	0.958 mg/L	1 mg/L	95.8	75.0	125	----
Anions and Nutrients (QCLot: 722962)										
WT2219497-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3	2.24 mg/L	2.5 mg/L	89.7	75.0	125	----
Anions and Nutrients (QCLot: 722963)										
WT2219497-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2	0.506 mg/L	0.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 722964)										
WT2219497-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	96.9 mg/L	100 mg/L	96.9	75.0	125	----
Anions and Nutrients (QCLot: 726521)										
WT2219907-006	NDR-GERLK	chloride	16887-00-6	E235.Cl	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 726522)										
WT2219907-006	NDR-GERLK	nitrate (as N)	14797-55-8	E235.NO3	2.48 mg/L	2.5 mg/L	99.3	75.0	125	----
Anions and Nutrients (QCLot: 726523)										
WT2219907-006	NDR-GERLK	sulfate (as SO4)	14808-79-8	E235.SO4	98.1 mg/L	100 mg/L	98.1	75.0	125	----
Anions and Nutrients (QCLot: 726524)										
WT2219907-006	NDR-GERLK	nitrite (as N)	14797-65-0	E235.NO2	0.498 mg/L	0.5 mg/L	99.7	75.0	125	----
Anions and Nutrients (QCLot: 726525)										
WT2219907-006	NDR-GERLK	fluoride	16984-48-8	E235.F	1.01 mg/L	1 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 731204)										
WT2219907-001	MATR-02	phosphorus, total	7723-14-0	E372-U	0.0999 mg/L	0.1 mg/L	99.9	70.0	130	----
Anions and Nutrients (QCLot: 731205)										
WT2219907-002	MATR-01	ammonia, total (as N)	7664-41-7	E298	0.101 mg/L	0.1 mg/L	101	75.0	125	----
Cyanides (QCLot: 723232)										
WT2219457-003	Anonymous	cyanide, strong acid dissociable (total)	----	E333	0.193 mg/L	0.25 mg/L	77.3	75.0	125	----
Cyanides (QCLot: 723233)										
WT2219457-003	Anonymous	cyanide, weak acid dissociable	----	E336	0.115 mg/L	0.125 mg/L	91.8	75.0	125	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Cyanides (QCLot: 723234)										
WT2219457-003	Anonymous	cyanide, free	----	E339	0.131 mg/L	0.125 mg/L	104	75.0	125	----
Cyanides (QCLot: 725107)										
TY2203475-001	Anonymous	cyanide, strong acid dissociable (total)	----	E333	ND mg/L	0.25 mg/L	ND	75.0	125	----
Cyanides (QCLot: 725108)										
WT2219720-001	Anonymous	cyanide, weak acid dissociable	----	E336	0.130 mg/L	0.125 mg/L	104	75.0	125	----
Cyanides (QCLot: 725109)										
WT2219720-001	Anonymous	cyanide, free	----	E339	0.143 mg/L	0.125 mg/L	114	75.0	125	----
Cyanides (QCLot: 728776)										
WT2219907-001	MATR-02	cyanide, strong acid dissociable (total)	----	E333	0.240 mg/L	0.25 mg/L	96.0	75.0	125	----
Cyanides (QCLot: 728777)										
WT2219907-001	MATR-02	cyanide, free	----	E339	0.146 mg/L	0.125 mg/L	117	75.0	125	----
Cyanides (QCLot: 728781)										
WT2219907-001	MATR-02	cyanide, weak acid dissociable	----	E336	0.138 mg/L	0.125 mg/L	111	75.0	125	----
Total Metals (QCLot: 722504)										
WT2219907-002	MATR-01	aluminum, total	7429-90-5	E420	ND mg/L	0.1 mg/L	ND	70.0	130	----
		antimony, total	7440-36-0	E420	0.0513 mg/L	0.05 mg/L	103	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0548 mg/L	0.05 mg/L	110	70.0	130	----
		barium, total	7440-39-3	E420	0.0127 mg/L	0.0125 mg/L	101	70.0	130	----
		beryllium, total	7440-41-7	E420	0.00494 mg/L	0.005 mg/L	98.8	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0512 mg/L	0.05 mg/L	102	70.0	130	----
		boron, total	7440-42-8	E420	0.049 mg/L	0.05 mg/L	97.5	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00522 mg/L	0.005 mg/L	104	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		cesium, total	7440-46-2	E420	0.00270 mg/L	0.0025 mg/L	108	70.0	130	----
		chromium, total	7440-47-3	E420	0.0130 mg/L	0.0125 mg/L	104	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0134 mg/L	0.0125 mg/L	107	70.0	130	----
		copper, total	7440-50-8	E420	0.0131 mg/L	0.0125 mg/L	105	70.0	130	----
		iron, total	7439-89-6	E420	ND mg/L	0.05 mg/L	ND	70.0	130	----
		lead, total	7439-92-1	E420	0.0262 mg/L	0.025 mg/L	105	70.0	130	----
		lithium, total	7439-93-2	E420	0.0122 mg/L	0.0125 mg/L	97.7	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0127 mg/L	0.0125 mg/L	101	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 722504) - continued										
WT2219907-002	MATR-01	nickel, total	7440-02-0	E420	0.0262 mg/L	0.025 mg/L	105	70.0	130	----
		phosphorus, total	7723-14-0	E420	0.527 mg/L	0.5 mg/L	105	70.0	130	----
		potassium, total	7440-09-7	E420	2.54 mg/L	2.5 mg/L	102	70.0	130	----
		rubidium, total	7440-17-7	E420	0.00560 mg/L	0.005 mg/L	112	70.0	130	----
		selenium, total	7782-49-2	E420	0.0546 mg/L	0.05 mg/L	109	70.0	130	----
		silicon, total	7440-21-3	E420	ND mg/L	0.5 mg/L	ND	70.0	130	----
		silver, total	7440-22-4	E420	0.00484 mg/L	0.005 mg/L	96.8	70.0	130	----
		sodium, total	7440-23-5	E420	2.52 mg/L	2.5 mg/L	101	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	2.51 mg/L	2.5 mg/L	100	70.0	130	----
		tellurium, total	13494-80-9	E420	0.00507 mg/L	0.005 mg/L	101	70.0	130	----
		thallium, total	7440-28-0	E420	0.0514 mg/L	0.05 mg/L	103	70.0	130	----
		thorium, total	7440-29-1	E420	0.00517 mg/L	0.005 mg/L	103	70.0	130	----
		tin, total	7440-31-5	E420	0.0262 mg/L	0.025 mg/L	105	70.0	130	----
		titanium, total	7440-32-6	E420	0.0135 mg/L	0.0125 mg/L	108	70.0	130	----
		tungsten, total	7440-33-7	E420	0.00513 mg/L	0.005 mg/L	103	70.0	130	----
		uranium, total	7440-61-1	E420	0.000269 mg/L	0.00025 mg/L	107	70.0	130	----
		vanadium, total	7440-62-2	E420	0.0264 mg/L	0.025 mg/L	106	70.0	130	----
		zinc, total	7440-66-6	E420	0.0259 mg/L	0.025 mg/L	104	70.0	130	----
		zirconium, total	7440-67-7	E420	0.00470 mg/L	0.005 mg/L	93.9	70.0	130	----
Total Metals (QCLot: 736841)										
WT2219907-002	MATR-01	mercury, total	7439-97-6	E508-L	3.84 ng/L	5 ng/L	76.7	70.0	130	----
Dissolved Metals (QCLot: 722924)										
WT2219907-001	MATR-02	aluminum, dissolved	7429-90-5	E421	ND mg/L	0.1 mg/L	ND	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0505 mg/L	0.05 mg/L	101	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0537 mg/L	0.05 mg/L	107	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.0118 mg/L	0.0125 mg/L	94.4	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.00472 mg/L	0.005 mg/L	94.4	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0456 mg/L	0.05 mg/L	91.2	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.043 mg/L	0.05 mg/L	86.2	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00515 mg/L	0.005 mg/L	103	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		cesium, dissolved	7440-46-2	E421	0.00255 mg/L	0.0025 mg/L	102	70.0	130	----
		chromium, dissolved	7440-47-3	E421	0.0120 mg/L	0.0125 mg/L	96.2	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0122 mg/L	0.0125 mg/L	97.6	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 722924) - continued										
WT2219907-001	MATR-02	copper, dissolved	7440-50-8	E421	0.0120 mg/L	0.0125 mg/L	95.9	70.0	130	----
		iron, dissolved	7439-89-6	E421	ND mg/L	0.05 mg/L	ND	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0252 mg/L	0.025 mg/L	101	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.0107 mg/L	0.0125 mg/L	85.5	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.0117 mg/L	0.0125 mg/L	93.3	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0120 mg/L	0.0125 mg/L	95.6	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0239 mg/L	0.025 mg/L	95.7	70.0	130	----
		phosphorus, dissolved	7723-14-0	E421	0.518 mg/L	0.5 mg/L	104	70.0	130	----
		potassium, dissolved	7440-09-7	E421	2.31 mg/L	2.5 mg/L	92.5	70.0	130	----
		rubidium, dissolved	7440-17-7	E421	0.00541 mg/L	0.005 mg/L	108	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0578 mg/L	0.05 mg/L	116	70.0	130	----
		silicon, dissolved	7440-21-3	E421	ND mg/L	0.5 mg/L	ND	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00440 mg/L	0.005 mg/L	88.0	70.0	130	----
		sodium, dissolved	7440-23-5	E421	2.22 mg/L	2.5 mg/L	88.7	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	2.58 mg/L	2.5 mg/L	103	70.0	130	----
		tellurium, dissolved	13494-80-9	E421	0.00550 mg/L	0.005 mg/L	110	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0496 mg/L	0.05 mg/L	99.1	70.0	130	----
		thorium, dissolved	7440-29-1	E421	0.00467 mg/L	0.005 mg/L	93.4	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0239 mg/L	0.025 mg/L	95.6	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0117 mg/L	0.0125 mg/L	93.6	70.0	130	----
		tungsten, dissolved	7440-33-7	E421	0.00474 mg/L	0.005 mg/L	94.8	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.000263 mg/L	0.00025 mg/L	105	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.0242 mg/L	0.025 mg/L	96.9	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.0244 mg/L	0.025 mg/L	97.5	70.0	130	----
		zirconium, dissolved	7440-67-7	E421	0.00462 mg/L	0.005 mg/L	92.4	70.0	130	----
Speciated Metals (QCLot: 733074)										
VA22C6259-002	Anonymous	methylmercury (as MeHg), total	22967-92-6	E536	0.00347 µg/L	0.0025 µg/L	69.5	60.0	140	----

Chain of Custody (COC) / Analytical Request Form

COC Number: 22 -

Page 1 of 2

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Canada Toll Free: 1 800 668 9878

Environmental Division Waterloo
Work Order Reference
WT2219907

Telephone : +1 519 886 6910

Report To	Contact and company name below will appear on the final report
Company:	WSP E&I Canada Ltd
Contact:	Dale Klodnicki
Phone:	647-993-4243
	Company address below will appear on the final report
Street:	2020 Winston Park Drive, #700
City/Province:	Oakville Ontario
Postal Code:	L6H 6X7
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	
Contact:	

Reports / Recipients	
Select Report Format:	☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Merge QC/QCI Reports with COA	☑ YES ☐ NO ☐ N/A
☑ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	dale.klodnicki@wsp.com
Email 2	samantha.sherman@wsp.com
Email 3	

Invoice Recipients	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	APInvoice.Canada@woodplc.com
Email 2	dale.klodnicki@wsp.com

Turnaround Time (TAT) Requested
☐ Routine [R] if received by 3pm M-F - no surcharges app
☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharg
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharg
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharg
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharg
☐ Same day [E2] if received by 10am M-S - 200% rush su
Additional fees may apply to rush requests on
Date and Time Required for all E&P TATs:
For all tests with rush TATs requested,

Project Information	
ALS Account # / Quote #:	Q86725
Job #:	OMEMA2002
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (ALS use only): WT2219907

ALS Contact: Gayle Braun Sampler: RD, DL

Analysis Request

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	As per quote Q86725 (no Ra-226)	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	MatR-02	25-Oct-22	15:15	SW	7	R				
	MatR-01	25-Oct-22	14:30	SW	7	R				
	CNC-Dup-01	17-Oct-22	n/a	SW	7	R				
	WBR-P-04	24-Oct-22	11:15	SW	7	R				
	WBR-P-03	24-Oct-22	15:00	SW	7	R				
	NDR-GerLk	20-Oct-22	11:30	SW	7	R				
	NDR-SutLk	21-Oct-22	13:30	SW	7	R				
	NDR-MarLk-Sur	20-Oct-22	14:45	SW	7	R				
	CNC-Dup-02	25-Oct-22	n/a	SW	7	R				
	NDR-Trib-01	18-Oct-22	12:15	SW	7	R				
	JC-S-01	18-Oct-22	14:15	SW	7	R				
	NDR-S-01	23-Oct-22	11:45	SW	7	R				

Drinking Water (DW) Samples[1] (client use)	Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)
Are samples taken from a Regulated DW System? ☐ YES ☑ NO	
Are samples for human consumption/ use? ☐ YES ☑ NO	

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☑ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C				
			6.2	6.8	8.1	7.4	5.9	

SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)		
Released by:	Dustin LePage	Date: 17-Oct-22	Time: 16:00	Received by:	Date:	Time:	Received by:	Date: 10/28/22	Time: 1000

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

FEB 2022 FRONT

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

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

Chain of Custody (COC) / Analytical Request Form

COC Number: 22 -

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Report To	Contact and company name below will appear on the final report
Company:	WSP E&I Canada Ltd
Contact:	Dale Klodnicki
Phone:	647-993-4243
	Company address below will appear on the final report
Street:	2020 Winston Park Drive, #700
City/Province:	Oakville Ontario
Postal Code:	L6H 6X7
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	
Contact:	

Reports / Recipients

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Merge QC/QCI Reports with COA ☑ YES ☐ NO ☐ N/A
☑ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: dale.klodnicki@wsp.com
Email 2: samantha.sherman@wsp.com
Email 3:

Invoice Recipients

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: APInvoice.Canada@woodplc.com
Email 2: dale.klodnicki@wsp.com

Turnaround Time (TAT) Requested

☐ Routine [R] if received by 3pm M-F - no surcharges apply
☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.

AFFIX ALS BARCODE LABEL HERE (ALS use only)

Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests.

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

Project Information

ALS Account # / Quote #:	Q86725
Job #:	OMEMA2002
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (ALS use only): WT22/1907

ALS Contact: Gayle Braun Sampler: RD, DL

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	As per quote Q86725 (no Ra-226)	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	NDR-S-02	17-Oct-22	13:15	SW	7	R			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☑ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
			6.7	6.8	8.1	7.4	5.9

SHIPMENT RELEASE (client use)

Released by:	Dustin LePage	Date:	17-Oct-22	Time:

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:
	10/28/22	1000

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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

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

Chain of Custody (COC) / Analytical Request Form

COC Number: 22 -

Page 1 of 2

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Environmental Division Waterloo

Work Order Reference

WT2219907

Telephone : +1 519 886 6910

Report To	Contact and company name below will appear on the final report
Company:	WSP E&I Canada Ltd
Contact:	Dale Klodnicki
Phone:	647-993-4243
	Company address below will appear on the final report
Street:	2020 Winston Park Drive, #700
City/Province:	Oakville Ontario
Postal Code:	L6H 6X7
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	
Contact:	

Reports / Recipients	
Select Report Format:	☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Merge QC/QCI Reports with COA	☑ YES ☐ NO ☐ N/A
☑ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	dale.klodnicki@wsp.com
Email 2	samantha.sherman@wsp.com
Email 3	

Invoice Recipients	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	APInvoice.Canada@woodplc.com
Email 2	dale.klodnicki@wsp.com

Turnaround Time (TAT) Requested
☐ Routine [R] if received by 3pm M-F - no surcharges app
☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharg
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharg
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharg
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharg
☐ Same day [E2] if received by 10am M-S - 200% rush su
Additional fees may apply to rush requests on
Date and Time Required for all E&P TATs:
For all tests with rush TATs requested,

ERE

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:	Q86725	AFE/Cost Center:	PO#
Job #:	OMEMA2002	Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	

ALS Lab Work Order # (ALS use only): WT2219907 **ALS Contact:** Gayle Braun **Sampler:** RD, DL

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	As per quote Q86725 (no Ra-226)	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	MatR-02	25-Oct-22	15:15	SW	7	R			
	MatR-01	25-Oct-22	14:30	SW	7	R			
	CNC-Dup-01	17-Oct-22	n/a	SW	7	R			
	WBR-P-04	24-Oct-22	11:15	SW	7	R			
	WBR-P-03	24-Oct-22	15:00	SW	7	R			
	NDR-GerLk	20-Oct-22	11:30	SW	7	R			
	NDR-SutLk	21-Oct-22	13:30	SW	7	R			
	NDR-MarLk-Sur	20-Oct-22	14:45	SW	7	R			
	CNC-Dup-02	25-Oct-22	n/a	SW	7	R			
	NDR-Trib-01	18-Oct-22	12:15	SW	7	R			
	JC-S-01	18-Oct-22	14:15	SW	7	R			
	NDR-S-01	23-Oct-22	11:45	SW	7	R			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☑ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C			
			6.2	6.8	8.1	7.4	5.9

SHIPMENT RELEASE (client use)

Released by:	Dustin LePage	Date:	17-Oct-22	Time:	16:00

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:
	10 28 22	1000

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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

MA ICU 183 N-357 GC 657/656 MM-364

Chain of Custody (COC) / Analytical Request Form

COC Number: 22 -

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Report To	Contact and company name below will appear on the final report
Company:	WSP E&I Canada Ltd
Contact:	Dale Klodnicki
Phone:	647-993-4243
	Company address below will appear on the final report
Street:	2020 Winston Park Drive, #700
City/Province:	Oakville Ontario
Postal Code:	L6H 6X7
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	
Contact:	

Reports / Recipients

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Merge QC/QCI Reports with COA ☑ YES ☐ NO ☐ N/A
☑ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: dale.klodnicki@wsp.com
Email 2: samantha.sherman@wsp.com
Email 3:

Invoice Recipients

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: APInvoice.Canada@woodplc.com
Email 2: dale.klodnicki@wsp.com

Turnaround Time (TAT) Requested

☐ Routine [R] if received by 3pm M-F - no surcharges apply
☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.

Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests.

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

AFFIX ALS BARCODE LABEL HERE (ALS use only)

Project Information

ALS Account # / Quote #:	Q86725
Job #:	OMEMA2002
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#:
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (ALS use only): WT2219907

ALS Contact: Gayle Braun

Sampler: RD, DL

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	As per quote Q86725 (no Ra-226)	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	NDR-S-02	17-Oct-22	13:15	SW	7	R			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☐ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
		6.2	6.8	8.1	7.9

SHIPMENT RELEASE (client use)

Released by:	Dustin LePage	Date:	17-Oct-22	Time:

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:
	10/28/22	1000

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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

CERTIFICATE OF ANALYSIS

Work Order	: **WT2219985**	Page	: 1 of 15
Client	: **WSP E&I Canada Limited**	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 2020 Winston Park Drive Suite 600 Mississauga ON Canada L6H 6X7	Address	: 60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2002	Date Samples Received	: 28-Oct-2022 10:00
PO	: OMEMA2002.2021C.400.5120.573000	Date Analysis Commenced	: 29-Oct-2022
C-O-C number	: ----	Issue Date	: 25-Nov-2022 13:24
Sampler	: ----		
Site	: ----		
Quote number	: OMEMA2002		
No. of samples received	: 30		
No. of samples analysed	: 30		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Colby Bingham	Quality Systems Coordinator	Sask Soils, Saskatoon, Saskatchewan
Greg Pokocky	Supervisor - Inorganic	Inorganics, Waterloo, Ontario
Hedy Lai	Team Leader - Inorganics	Inorganics, Saskatoon, Saskatchewan
Hedy Lai	Team Leader - Inorganics	Sask Soils, Saskatoon, Saskatchewan
Jon Fisher	Department Manager - Inorganics	Inorganics, Waterloo, Ontario
Jwan Abdalla	Laboratory Analyst	Metals, Saskatoon, Saskatchewan
Niral Patel		Centralized Prep, Waterloo, Ontario

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances

LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	no units
%	percent
mg/kg	milligrams per kilogram
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

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

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Sample Comments

Sample	Client Id	*Comment*
WT2219985-002	WBR-P-04-02	Sample(s) F2,4-8,15,19-20: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
WT2219985-004	NDR-S-02-01	Sample(s) F2,4-8,15,19-20: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
WT2219985-005	NDR-S-02-02	Sample(s) F2,4-8,15,19-20: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
WT2219985-006	NDR-S-02-03	Sample(s) F2,4-8,15,19-20: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
WT2219985-007	NDR-TRIB-01-01	Sample(s) F2,4-8,15,19-20: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
WT2219985-008	NDR-TRIB-01-02	Sample(s) F2,4-8,15,19-20: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
WT2219985-013	NDR-JACLK-01	Sample(s) F13-14,16-18: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.

WT2219985-014	NDR-JACLK-02	Sample(s) F13-14,16-18: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
WT2219985-015	NDR-JACLK-03	Sample(s) F2,4-8,15,19-20: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
WT2219985-016	NDR-SUTLK-01	Sample(s) F13-14,16-18: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
WT2219985-017	NDR-SUTLK-02	Sample(s) F13-14,16-18: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
WT2219985-018	NDR-SUTLK-03	Sample(s) F13-14,16-18: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
WT2219985-019	WBR-P-03-01	Sample(s) F2,4-8,15,19-20: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
WT2219985-020	WBR-P-03-02	Sample(s) F2,4-8,15,19-20: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
WT2219985-022	NDR-S-01-01	Sample(s) F22,25,26,30: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
WT2219985-025	CNC-DUP-01	Sample(s) F22,25,26,30: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
WT2219985-026	CNC-DUP-02	Sample(s) F22,25,26,30: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.
WT2219985-030	NDR-P-04-03	Sample(s) F22,25,26,30: Limited sample was available for PSA (100g minimum is standard). Measurement Uncertainty for PSA results may be higher than usual.

Qualifiers

Qualifier	*Description*
DLM	*Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).*

Analytical Results

Sub-Matrix: Soil/Solid
(Matrix: Soil/Solid)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	WBR-P-04-01	WBR-P-04-02	WBR-P-04-03	NDR-S-02-01	NDR-S-02-02
					Client sampling date / time	24-Oct-2022 09:45	24-Oct-2022 10:15	24-Oct-2022 10:45	17-Oct-2022 14:00	17-Oct-2022 14:30
						WT2219985-001	WT2219985-002	WT2219985-003	WT2219985-004	WT2219985-005
						Result	Result	Result	Result	Result
Physical Tests										
moisture	----	E144	0.25	%		89.2	57.6	83.1	47.0	50.9
pH (1:2 soil:CaCl2-aq)	----	E108A	0.10	pH units		5.14	6.06	6.13	6.28	6.00
Particle Size										
grain size curve	----	E185	-	-		See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC183A	1.0	%		9.8	36.7	17.6	7.0	10.2
silt (0.063mm - 0.004mm)	----	EC183A	1.0	%		66.8	57.3	69.8	34.4	45.4
silt (0.063mm - 0.0312mm)	----	EC183A	1.0	%		37.2	10.3	24.9	11.5	13.3
silt (0.0312mm - 0.004mm)	----	EC183A	1.0	%		29.6	47.0	44.9	22.9	32.1
sand (2.0mm - 0.063mm)	----	EC183A	1.0	%		23.3	6.0	12.6	57.1	43.2
sand (0.125mm - 0.063mm)	----	EC183A	1.0	%		22.0	3.7	12.4	12.3	12.2
sand (0.25mm - 0.125mm)	----	EC183A	1.0	%		<1.0	<1.0	<1.0	17.6	13.2
sand (0.5mm - 0.25mm)	----	EC183A	1.0	%		<1.0	<1.0	<1.0	15.4	10.8
sand (1.0mm - 0.50mm)	----	EC183A	1.0	%		<1.0	<1.0	<1.0	7.9	4.5
sand (2.0mm - 1.0mm)	----	EC183A	1.0	%		<1.0	<1.0	<1.0	3.9	2.5
gravel (>2mm)	----	EC183A	1.0	%		<1.0	<1.0	<1.0	1.5	1.2
Organic / Inorganic Carbon										
carbon, total organic [TOC]	----	EC356	0.050	%		28.6	6.68	26.1	4.22	3.27
Metals										
aluminum	7429-90-5	E440	50	mg/kg		8660	17400	11600	5200	7100
antimony	7440-36-0	E440	0.10	mg/kg		0.15	0.12	<0.10	<0.10	<0.10
arsenic	7440-38-2	E440	0.10	mg/kg		2.38	2.66	1.91	1.58	1.46
barium	7440-39-3	E440	0.50	mg/kg		67.5	88.0	69.1	32.7	42.7
beryllium	7440-41-7	E440	0.10	mg/kg		0.25	0.56	0.46	0.16	0.20
bismuth	7440-69-9	E440	0.20	mg/kg		<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg		<5.0	8.6	5.8	<5.0	<5.0
cadmium	7440-43-9	E440	0.020	mg/kg		0.784	0.315	0.440	0.311	0.332
calcium	7440-70-2	E440	50	mg/kg		12100	9740	18100	4310	3770
chromium	7440-47-3	E440	0.50	mg/kg		18.8	47.0	25.5	16.7	23.0

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	WBR-P-04-01	WBR-P-04-02	WBR-P-04-03	NDR-S-02-01	NDR-S-02-02
					Client sampling date / time	24-Oct-2022 09:45	24-Oct-2022 10:15	24-Oct-2022 10:45	17-Oct-2022 14:00	17-Oct-2022 14:30
						WT2219985-001	WT2219985-002	WT2219985-003	WT2219985-004	WT2219985-005
						Result	Result	Result	Result	Result
Metals										
cobalt	7440-48-4	E440	0.10	mg/kg		5.13	10.3	6.15	5.24	5.85
copper	7440-50-8	E440	0.50	mg/kg		10.2	13.2	15.8	5.17	6.59
iron	7439-89-6	E440	50	mg/kg		8810	21000	12400	7450	9120
lead	7439-92-1	E440	0.50	mg/kg		20.9	13.2	9.37	6.20	6.17
lithium	7439-93-2	E440	2.0	mg/kg		8.3	23.3	12.4	7.4	9.9
magnesium	7439-95-4	E440	20	mg/kg		2840	8760	5530	2850	2920
manganese	7439-96-5	E440	1.0	mg/kg		446	468	344	477	457
molybdenum	7439-98-7	E440	0.10	mg/kg		0.50	0.73	0.36	0.40	0.52
nickel	7440-02-0	E440	0.50	mg/kg		9.46	24.4	15.2	8.95	12.0
phosphorus	7723-14-0	E440	50	mg/kg		669	598	608	389	426
potassium	7440-09-7	E440	100	mg/kg		810	2410	1220	540	750
selenium	7782-49-2	E440	0.20	mg/kg		0.78	0.24	0.59	<0.20	<0.20
silver	7440-22-4	E440	0.10	mg/kg		<0.10	<0.10	<0.10	<0.10	<0.10
sodium	7440-23-5	E440	50	mg/kg		144	248	122	98	109
strontium	7440-24-6	E440	0.50	mg/kg		38.6	29.0	53.3	11.0	13.4
sulfur	7704-34-9	E440	1000	mg/kg		1600	<1000	1400	<1000	<1000
thallium	7440-28-0	E440	0.050	mg/kg		0.097	0.179	0.099	0.067	0.086
tin	7440-31-5	E440	2.0	mg/kg		<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg		203	953	398	337	434
tungsten	7440-33-7	E440	0.50	mg/kg		<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg		1.19	0.898	2.10	0.458	0.545
vanadium	7440-62-2	E440	0.20	mg/kg		16.4	37.6	22.6	13.4	17.0
zinc	7440-66-6	E440	2.0	mg/kg		52.0	73.1	53.4	46.4	55.3
zirconium	7440-67-7	E440	1.0	mg/kg		3.0	7.9	6.8	1.7	2.0
Leachable Anions & Nutrients										
Kjeldahl nitrogen, total [TKN]	----	E319	0.020	%		1.18	0.306	0.856	0.185	0.164

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: Soil/Solid
(Matrix: Soil/Solid)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-S-02-03	NDR-TRIB-01-01	NDR-TRIB-01-02	NDR-TRIB-01-03	NDR-MARLK-01
					Client sampling date / time	17-Oct-2022 15:00	18-Oct-2022 11:00	18-Oct-2022 11:30	18-Oct-2022 12:00	19-Oct-2022 16:00
						WT2219985-006	WT2219985-007	WT2219985-008	WT2219985-009	WT2219985-010
						Result	Result	Result	Result	Result
Physical Tests										
moisture	----	E144	0.25	%		54.7	70.0	68.8	----	69.6
pH (1:2 soil:CaCl2-aq)	----	E108A	0.10	pH units		5.91	5.49	5.73	----	6.43
Particle Size										
grain size curve	----	E185	-	-		See Attached	See Attached	See Attached	----	See Attached
clay (<0.004mm)	----	EC183A	1.0	%		14.6	20.7	18.0	----	14.4
silt (0.063mm - 0.004mm)	----	EC183A	1.0	%		57.6	57.4	52.4	----	70.2
silt (0.063mm - 0.0312mm)	----	EC183A	1.0	%		18.8	23.5	17.7	----	20.4
silt (0.0312mm - 0.004mm)	----	EC183A	1.0	%		38.8	33.9	34.7	----	49.8
sand (2.0mm - 0.063mm)	----	EC183A	1.0	%		27.8	21.9	29.6	----	15.4
sand (0.125mm - 0.063mm)	----	EC183A	1.0	%		14.5	13.9	12.1	----	10.8
sand (0.25mm - 0.125mm)	----	EC183A	1.0	%		10.2	5.6	9.7	----	2.9
sand (0.5mm - 0.25mm)	----	EC183A	1.0	%		2.5	1.4	5.2	----	1.0
sand (1.0mm - 0.50mm)	----	EC183A	1.0	%		<1.0	<1.0	1.7	----	<1.0
sand (2.0mm - 1.0mm)	----	EC183A	1.0	%		<1.0	<1.0	<1.0	----	<1.0
gravel (>2mm)	----	EC183A	1.0	%		<1.0	<1.0	<1.0	----	<1.0
Organic / Inorganic Carbon										
carbon, total organic [TOC]	----	EC356	0.050	%		4.37	9.39	6.11	6.60	6.05
Metals										
aluminum	7429-90-5	E440	50	mg/kg		8600	11300	10000	----	10800
antimony	7440-36-0	E440	0.10	mg/kg		<0.10	0.12	<0.10	----	0.11
arsenic	7440-38-2	E440	0.10	mg/kg		1.91	2.84	2.12	----	2.92
barium	7440-39-3	E440	0.50	mg/kg		55.4	83.1	65.4	----	82.6
beryllium	7440-41-7	E440	0.10	mg/kg		0.25	0.41	0.34	----	0.35
bismuth	7440-69-9	E440	0.20	mg/kg		<0.20	<0.20	<0.20	----	<0.20
boron	7440-42-8	E440	5.0	mg/kg		<5.0	6.2	5.3	----	6.1
cadmium	7440-43-9	E440	0.020	mg/kg		0.542	0.652	0.507	----	0.686
calcium	7440-70-2	E440	50	mg/kg		5020	8850	7310	----	7290
chromium	7440-47-3	E440	0.50	mg/kg		23.8	29.0	27.4	----	27.6
cobalt	7440-48-4	E440	0.10	mg/kg		7.97	8.80	7.25	----	8.25

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-S-02-03	NDR-TRIB-01-01	NDR-TRIB-01-02	NDR-TRIB-01-03	NDR-MARLK-01
					Client sampling date / time	17-Oct-2022 15:00	18-Oct-2022 11:00	18-Oct-2022 11:30	18-Oct-2022 12:00	19-Oct-2022 16:00
						WT2219985-006	WT2219985-007	WT2219985-008	WT2219985-009	WT2219985-010
						Result	Result	Result	Result	Result
Metals										
copper	7440-50-8	E440	0.50	mg/kg		7.79	15.1	13.1	----	10.1
iron	7439-89-6	E440	50	mg/kg		10800	16300	13000	----	16200
lead	7439-92-1	E440	0.50	mg/kg		8.89	12.4	8.90	----	12.0
lithium	7439-93-2	E440	2.0	mg/kg		12.1	16.7	15.3	----	15.7
magnesium	7439-95-4	E440	20	mg/kg		3910	5640	4950	----	4830
manganese	7439-96-5	E440	1.0	mg/kg		759	712	552	----	1220
molybdenum	7439-98-7	E440	0.10	mg/kg		0.21	0.22	0.18	----	0.21
nickel	7440-02-0	E440	0.50	mg/kg		12.5	16.5	14.8	----	16.2
phosphorus	7723-14-0	E440	50	mg/kg		550	638	551	----	656
potassium	7440-09-7	E440	100	mg/kg		900	1400	1240	----	1520
selenium	7782-49-2	E440	0.20	mg/kg		<0.20	0.29	0.28	----	0.32
silver	7440-22-4	E440	0.10	mg/kg		<0.10	<0.10	<0.10	----	<0.10
sodium	7440-23-5	E440	50	mg/kg		150	156	197	----	156
strontium	7440-24-6	E440	0.50	mg/kg		14.9	23.9	20.2	----	22.4
sulfur	7704-34-9	E440	1000	mg/kg		<1000	<1000	<1000	----	<1000
thallium	7440-28-0	E440	0.050	mg/kg		0.115	0.126	0.109	----	0.131
tin	7440-31-5	E440	2.0	mg/kg		<2.0	<2.0	<2.0	----	<2.0
titanium	7440-32-6	E440	1.0	mg/kg		483	589	585	----	619
tungsten	7440-33-7	E440	0.50	mg/kg		<0.50	<0.50	<0.50	----	<0.50
uranium	7440-61-1	E440	0.050	mg/kg		0.689	0.897	1.16	----	0.777
vanadium	7440-62-2	E440	0.20	mg/kg		20.6	26.4	24.1	----	25.0
zinc	7440-66-6	E440	2.0	mg/kg		80.3	109	87.9	----	102
zirconium	7440-67-7	E440	1.0	mg/kg		2.5	4.8	4.4	----	3.9
Leachable Anions & Nutrients										
Kjeldahl nitrogen, total [TKN]	----	E319	0.020	%		0.248	0.377	0.288	----	0.349

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: Soil/Solid
(Matrix: Soil/Solid)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-MARLK-02	NDR-MARLK-03	NDR-JACLK-01	NDR-JACLK-02	NDR-JACLK-03
					Client sampling date / time	19-Oct-2022 16:30	19-Oct-2022 17:00	22-Oct-2022 12:15	22-Oct-2022 12:45	22-Oct-2022 13:15
						WT2219985-011	WT2219985-012	WT2219985-013	WT2219985-014	WT2219985-015
						Result	Result	Result	Result	Result
Physical Tests										
moisture	----	E144	0.25	%		78.2	77.9	95.9	94.8	42.3
pH (1:2 soil:CaCl2-aq)	----	E108A	0.10	pH units		5.82	6.08	6.98	6.75	7.34
Particle Size										
grain size curve	----	E185	-	-		See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC183A	1.0	%		53.1	42.9	5.6	11.1	14.0
silt (0.063mm - 0.004mm)	----	EC183A	1.0	%		35.8	46.1	48.7	51.2	31.2
silt (0.063mm - 0.0312mm)	----	EC183A	1.0	%		18.6	17.1	44.9	42.8	12.2
silt (0.0312mm - 0.004mm)	----	EC183A	1.0	%		17.2	29.0	3.8	8.4	19.0
sand (2.0mm - 0.063mm)	----	EC183A	1.0	%		11.1	11.0	45.7	37.7	54.8
sand (0.125mm - 0.063mm)	----	EC183A	1.0	%		11.1	10.0	45.5	37.6	15.9
sand (0.25mm - 0.125mm)	----	EC183A	1.0	%		<1.0	<1.0	<1.0	<1.0	27.3
sand (0.5mm - 0.25mm)	----	EC183A	1.0	%		<1.0	<1.0	<1.0	<1.0	10.6
sand (1.0mm - 0.50mm)	----	EC183A	1.0	%		<1.0	<1.0	<1.0	<1.0	1.0
sand (2.0mm - 1.0mm)	----	EC183A	1.0	%		<1.0	<1.0	<1.0	<1.0	<1.0
gravel (>2mm)	----	EC183A	1.0	%		<1.0	<1.0	<1.0	<1.0	<1.0
Organic / Inorganic Carbon										
carbon, total organic [TOC]	----	EC356	0.050	%		7.75	7.02	24.4	24.9	1.54
Metals										
aluminum	7429-90-5	E440	50	mg/kg		24700	22400	13200	13100	9460
antimony	7440-36-0	E440	0.10	mg/kg		0.23	0.24	0.66	0.61	<0.10
arsenic	7440-38-2	E440	0.10	mg/kg		4.54	4.56	9.05	7.61	2.25
barium	7440-39-3	E440	0.50	mg/kg		156	132	77.8	95.1	60.3
beryllium	7440-41-7	E440	0.10	mg/kg		0.75	0.72	0.57	0.51	0.27
bismuth	7440-69-9	E440	0.20	mg/kg		0.35	0.30	0.42	0.65	<0.20
boron	7440-42-8	E440	5.0	mg/kg		12.5	12.3	13.1	13.4	7.6
cadmium	7440-43-9	E440	0.020	mg/kg		0.741	0.597	1.50	1.90	0.080
calcium	7440-70-2	E440	50	mg/kg		11100	13800	11200	11800	57800
chromium	7440-47-3	E440	0.50	mg/kg		59.1	56.8	32.2	34.5	39.8
cobalt	7440-48-4	E440	0.10	mg/kg		14.3	13.3	7.03	9.36	9.88

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-MARLK-02	NDR-MARLK-03	NDR-JACLK-01	NDR-JACLK-02	NDR-JACLK-03
					Client sampling date / time	19-Oct-2022 16:30	19-Oct-2022 17:00	22-Oct-2022 12:15	22-Oct-2022 12:45	22-Oct-2022 13:15
						WT2219985-011	WT2219985-012	WT2219985-013	WT2219985-014	WT2219985-015
						Result	Result	Result	Result	Result
Metals										
copper	7440-50-8	E440	0.50	mg/kg		21.3	30.4	26.3	47.6	33.9
iron	7439-89-6	E440	50	mg/kg		33400	28000	19300	19400	18200
lead	7439-92-1	E440	0.50	mg/kg		27.1	21.8	45.1	71.7	5.92
lithium	7439-93-2	E440	2.0	mg/kg		34.8	32.4	18.4	17.0	15.2
magnesium	7439-95-4	E440	20	mg/kg		10700	12400	5610	6250	18200
manganese	7439-96-5	E440	1.0	mg/kg		623	468	249	277	303
molybdenum	7439-98-7	E440	0.10	mg/kg		0.34	0.50	1.23	1.90	0.60
nickel	7440-02-0	E440	0.50	mg/kg		34.9	34.2	23.7	27.1	26.9
phosphorus	7723-14-0	E440	50	mg/kg		912	702	917	1570	477
potassium	7440-09-7	E440	100	mg/kg		3520	3280	1750	1780	1400
selenium	7782-49-2	E440	0.20	mg/kg		0.46	0.38	1.47	2.08	<0.20
silver	7440-22-4	E440	0.10	mg/kg		0.12	0.10	0.15	0.25	<0.10
sodium	7440-23-5	E440	50	mg/kg		332	327	328	351	188
strontium	7440-24-6	E440	0.50	mg/kg		36.5	31.6	21.9	23.2	42.8
sulfur	7704-34-9	E440	1000	mg/kg		<1000	<1000	8800	11900	1600
thallium	7440-28-0	E440	0.050	mg/kg		0.237	0.237	0.220	0.222	0.211
tin	7440-31-5	E440	2.0	mg/kg		<2.0	<2.0	3.5	3.4	<2.0
titanium	7440-32-6	E440	1.0	mg/kg		1040	997	412	381	715
tungsten	7440-33-7	E440	0.50	mg/kg		<0.50	<0.50	<0.54 DLM	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg		0.966	0.964	1.09	1.19	0.502
vanadium	7440-62-2	E440	0.20	mg/kg		52.5	48.8	31.2	31.3	31.3
zinc	7440-66-6	E440	2.0	mg/kg		170	171	135	171	35.6
zirconium	7440-67-7	E440	1.0	mg/kg		11.6	9.9	6.2	7.0	5.6
Leachable Anions & Nutrients										
Kjeldahl nitrogen, total [TKN]	----	E319	0.020	%		0.445	0.397	1.98	2.05	0.079

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: Soil/Solid
(Matrix: Soil/Solid)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-SUTLK-01	NDR-SUTLK-02	NDR-SUTLK-03	WBR-P-03-01	WBR-P-03-02
					Client sampling date / time	21-Oct-2022 11:00	21-Oct-2022 11:30	21-Oct-2022 12:00	24-Oct-2022 13:30	24-Oct-2022 14:00
						WT2219985-016	WT2219985-017	WT2219985-018	WT2219985-019	WT2219985-020
						Result	Result	Result	Result	Result
Physical Tests										
moisture	----	E144	0.25	%		94.5	96.0	97.0	66.5	72.2
pH (1:2 soil:CaCl2-aq)	----	E108A	0.10	pH units		6.88	6.93	6.91	5.60	5.27
Particle Size										
grain size curve	----	E185	-	-		See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC183A	1.0	%		8.3	7.1	<1.0	28.1	28.6
silt (0.063mm - 0.004mm)	----	EC183A	1.0	%		46.3	43.3	46.9	63.7	61.7
silt (0.063mm - 0.0312mm)	----	EC183A	1.0	%		36.9	35.7	45.5	14.9	19.1
silt (0.0312mm - 0.004mm)	----	EC183A	1.0	%		9.4	7.6	1.4	48.8	42.6
sand (2.0mm - 0.063mm)	----	EC183A	1.0	%		30.4	32.6	53.1	8.2	9.7
sand (0.125mm - 0.063mm)	----	EC183A	1.0	%		30.0	32.5	53.0	4.2	6.9
sand (0.25mm - 0.125mm)	----	EC183A	1.0	%		<1.0	<1.0	<1.0	1.9	1.7
sand (0.5mm - 0.25mm)	----	EC183A	1.0	%		<1.0	<1.0	<1.0	1.1	<1.0
sand (1.0mm - 0.50mm)	----	EC183A	1.0	%		<1.0	<1.0	<1.0	<1.0	<1.0
sand (2.0mm - 1.0mm)	----	EC183A	1.0	%		<1.0	<1.0	<1.0	<1.0	<1.0
gravel (>2mm)	----	EC183A	1.0	%		15.0	17.0	<1.0	<1.0	<1.0
Organic / Inorganic Carbon										
carbon, total organic [TOC]	----	EC356	0.050	%		24.8	25.7	30.4	7.53	12.2
Metals										
aluminum	7429-90-5	E440	50	mg/kg		9270	9260	8140	15900	13800
antimony	7440-36-0	E440	0.10	mg/kg		0.33	0.56	0.34	0.10	<0.10
arsenic	7440-38-2	E440	0.10	mg/kg		6.39	6.60	5.25	2.10	1.79
barium	7440-39-3	E440	0.50	mg/kg		50.2	60.4	37.1	76.9	70.6
beryllium	7440-41-7	E440	0.10	mg/kg		0.38	0.36	0.26	0.48	0.38
bismuth	7440-69-9	E440	0.20	mg/kg		0.36	0.43	0.39	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg		16.9	19.8	17.7	7.4	6.2
cadmium	7440-43-9	E440	0.020	mg/kg		1.29	1.44	1.44	0.430	0.572
calcium	7440-70-2	E440	50	mg/kg		20300	15700	14400	8010	8300
chromium	7440-47-3	E440	0.50	mg/kg		27.2	24.7	21.1	37.1	32.4
cobalt	7440-48-4	E440	0.10	mg/kg		6.09	5.89	4.74	9.22	7.77

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	NDR-SUTLK-01	NDR-SUTLK-02	NDR-SUTLK-03	WBR-P-03-01	WBR-P-03-02
					Client sampling date / time	21-Oct-2022 11:00	21-Oct-2022 11:30	21-Oct-2022 12:00	24-Oct-2022 13:30	24-Oct-2022 14:00
						WT2219985-016	WT2219985-017	WT2219985-018	WT2219985-019	WT2219985-020
						Result	Result	Result	Result	Result
Metals										
copper	7440-50-8	E440	0.50	mg/kg		24.7	22.8	33.8	10.4	9.53
iron	7439-89-6	E440	50	mg/kg		13200	12400	11700	17900	13900
lead	7439-92-1	E440	0.50	mg/kg		43.4	45.8	50.0	13.3	13.9
lithium	7439-93-2	E440	2.0	mg/kg		13.2	12.3	10.7	21.7	17.0
magnesium	7439-95-4	E440	20	mg/kg		8340	5830	4200	6430	4590
manganese	7439-96-5	E440	1.0	mg/kg		310	249	160	486	442
molybdenum	7439-98-7	E440	0.10	mg/kg		1.79	2.30	1.65	0.22	0.28
nickel	7440-02-0	E440	0.50	mg/kg		20.0	19.3	17.7	18.5	15.2
phosphorus	7723-14-0	E440	50	mg/kg		1020	1250	1300	616	621
potassium	7440-09-7	E440	100	mg/kg		1590	1540	1340	1860	1570
selenium	7782-49-2	E440	0.20	mg/kg		1.46	1.82	1.64	0.30	0.40
silver	7440-22-4	E440	0.10	mg/kg		0.14	0.13	0.18	<0.10	<0.10
sodium	7440-23-5	E440	50	mg/kg		322	501	416	226	132
strontium	7440-24-6	E440	0.50	mg/kg		23.7	24.4	17.8	25.9	29.6
sulfur	7704-34-9	E440	1000	mg/kg		10200	11000	13200	<1000	<1000
thallium	7440-28-0	E440	0.050	mg/kg		0.174	0.197	0.135	0.162	0.160
tin	7440-31-5	E440	2.0	mg/kg		2.8	4.2	5.6	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg		383	335	293	726	514
tungsten	7440-33-7	E440	0.50	mg/kg		<0.50	<0.56 DLM	<0.56 DLM	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg		2.74	3.64	1.80	0.934	1.75
vanadium	7440-62-2	E440	0.20	mg/kg		20.7	22.1	15.3	30.9	25.2
zinc	7440-66-6	E440	2.0	mg/kg		128	124	154	79.8	78.3
zirconium	7440-67-7	E440	1.0	mg/kg		8.3	5.9	5.4	3.9	3.5
Leachable Anions & Nutrients										
Kjeldahl nitrogen, total [TKN]	----	E319	0.020	%		1.91	2.32	2.67	0.367	0.484

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: Soil/Solid
(Matrix: Soil/Solid)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	WBR-P-03-3	NDR-S-01-01	NDR-S-01-02	NDR-S-01-03	CNC-DUP-01
					Client sampling date / time	24-Oct-2022 14:00	23-Oct-2022 09:45	23-Oct-2022 10:30	23-Oct-2022	19-Oct-2022
						WT2219985-021	WT2219985-022	WT2219985-023	WT2219985-024	WT2219985-025
						Result	Result	Result	Result	Result
Physical Tests										
moisture	----	E144	0.25	%		69.9	91.2	73.9	80.5	80.2
pH (1:2 soil:CaCl2-aq)	----	E108A	0.10	pH units		5.87	5.28	5.36	5.33	6.51
Particle Size										
grain size curve	----	E185	-	-		See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC183A	1.0	%		30.5	9.1	16.9	17.6	55.8
silt (0.063mm - 0.004mm)	----	EC183A	1.0	%		59.9	62.7	68.9	69.8	32.9
silt (0.063mm - 0.0312mm)	----	EC183A	1.0	%		16.3	40.2	27.6	26.8	15.9
silt (0.0312mm - 0.004mm)	----	EC183A	1.0	%		43.6	22.5	41.3	43.0	17.0
sand (2.0mm - 0.063mm)	----	EC183A	1.0	%		9.4	27.8	14.2	12.4	11.3
sand (0.125mm - 0.063mm)	----	EC183A	1.0	%		7.4	25.2	13.9	12.3	11.2
sand (0.25mm - 0.125mm)	----	EC183A	1.0	%		<1.0	1.0	<1.0	<1.0	<1.0
sand (0.5mm - 0.25mm)	----	EC183A	1.0	%		<1.0	<1.0	<1.0	<1.0	<1.0
sand (1.0mm - 0.50mm)	----	EC183A	1.0	%		<1.0	<1.0	<1.0	<1.0	<1.0
sand (2.0mm - 1.0mm)	----	EC183A	1.0	%		<1.0	<1.0	<1.0	<1.0	<1.0
gravel (>2mm)	----	EC183A	1.0	%		<1.0	<1.0	<1.0	<1.0	<1.0
Organic / Inorganic Carbon										
carbon, total organic [TOC]	----	EC356	0.050	%		13.4	28.3	15.4	19.8	11.1
Metals										
aluminum	7429-90-5	E440	50	mg/kg		18100	7260	13100	11100	19200
antimony	7440-36-0	E440	0.10	mg/kg		0.12	0.16	<0.10	<0.10	0.20
arsenic	7440-38-2	E440	0.10	mg/kg		2.89	2.15	1.83	2.11	6.64
barium	7440-39-3	E440	0.50	mg/kg		89.5	50.5	67.6	61.7	179
beryllium	7440-41-7	E440	0.10	mg/kg		0.72	0.16	0.35	0.37	0.63
bismuth	7440-69-9	E440	0.20	mg/kg		<0.20	<0.20	<0.20	<0.20	0.30
boron	7440-42-8	E440	5.0	mg/kg		9.5	<5.0	<5.0	<5.0	9.3
cadmium	7440-43-9	E440	0.020	mg/kg		0.420	1.35	0.635	0.582	0.672
calcium	7440-70-2	E440	50	mg/kg		17900	8480	10600	13000	26700
chromium	7440-47-3	E440	0.50	mg/kg		40.2	18.0	26.8	23.1	49.1
cobalt	7440-48-4	E440	0.10	mg/kg		11.1	3.61	5.05	5.33	11.6

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	WBR-P-03-3	NDR-S-01-01	NDR-S-01-02	NDR-S-01-03	CNC-DUP-01
					Client sampling date / time	24-Oct-2022 14:00	23-Oct-2022 09:45	23-Oct-2022 10:30	23-Oct-2022	19-Oct-2022
						WT2219985-021	WT2219985-022	WT2219985-023	WT2219985-024	WT2219985-025
						Result	Result	Result	Result	Result
Metals										
copper	7440-50-8	E440	0.50	mg/kg		17.4	17.7	13.2	18.7	28.6
iron	7439-89-6	E440	50	mg/kg		21900	6020	9860	9700	38200
lead	7439-92-1	E440	0.50	mg/kg		12.8	12.1	9.91	10.5	24.7
lithium	7439-93-2	E440	2.0	mg/kg		24.5	6.7	13.6	11.1	26.8
magnesium	7439-95-4	E440	20	mg/kg		8290	2340	3470	3680	15300
manganese	7439-96-5	E440	1.0	mg/kg		800	244	256	340	897
molybdenum	7439-98-7	E440	0.10	mg/kg		0.23	0.66	0.24	0.26	0.61
nickel	7440-02-0	E440	0.50	mg/kg		22.4	9.54	12.3	13.1	33.0
phosphorus	7723-14-0	E440	50	mg/kg		669	933	902	747	768
potassium	7440-09-7	E440	100	mg/kg		2160	770	950	800	2800
selenium	7782-49-2	E440	0.20	mg/kg		0.45	0.58	0.68	0.74	0.55
silver	7440-22-4	E440	0.10	mg/kg		<0.10	<0.10	<0.10	<0.10	0.13
sodium	7440-23-5	E440	50	mg/kg		181	132	116	93	307
strontium	7440-24-6	E440	0.50	mg/kg		37.5	25.4	32.5	38.2	40.3
sulfur	7704-34-9	E440	1000	mg/kg		<1000	2300	1200	1500	3400
thallium	7440-28-0	E440	0.050	mg/kg		0.161	0.120	0.127	0.095	0.180
tin	7440-31-5	E440	2.0	mg/kg		<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg		648	224	291	267	650
tungsten	7440-33-7	E440	0.50	mg/kg		<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg		1.66	0.758	4.58	3.66	0.665
vanadium	7440-62-2	E440	0.20	mg/kg		35.3	14.3	22.7	20.8	42.2
zinc	7440-66-6	E440	2.0	mg/kg		74.5	166	59.4	68.0	133
zirconium	7440-67-7	E440	1.0	mg/kg		6.3	1.6	3.0	4.7	12.0
Leachable Anions & Nutrients										
Kjeldahl nitrogen, total [TKN]	----	E319	0.020	%		0.415	1.19	0.695	0.848	0.446

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: Soil/Solid
(Matrix: Soil/Solid)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	CNC-DUP-02	NDR-GERLK-01	NDR-GERLK-02	NDR-GERLK-03	NDR-P-04-03
					Client sampling date / time	23-Oct-2022	19-Oct-2022 12:30	19-Oct-2022 13:00	19-Oct-2022 13:30	26-Oct-2022
						WT2219985-026	WT2219985-027	WT2219985-028	WT2219985-029	WT2219985-030
						Result	Result	Result	Result	Result
Physical Tests										
moisture	----	E144	0.25	%		78.8	80.6	81.1	82.7	84.5
pH (1:2 soil:CaCl2-aq)	----	E108A	0.10	pH units		6.23	6.50	6.23	6.55	5.81
Particle Size										
grain size curve	----	E185	-	-		See Attached	See Attached	See Attached	See Attached	See Attached
clay (<0.004mm)	----	EC183A	1.0	%		20.0	50.7	32.8	49.0	32.2
silt (0.063mm - 0.004mm)	----	EC183A	1.0	%		65.2	37.4	50.9	39.9	53.8
silt (0.063mm - 0.0312mm)	----	EC183A	1.0	%		26.4	20.8	26.9	21.5	23.0
silt (0.0312mm - 0.004mm)	----	EC183A	1.0	%		38.8	16.6	24.0	18.4	30.8
sand (2.0mm - 0.063mm)	----	EC183A	1.0	%		14.8	11.9	16.3	11.1	14.0
sand (0.125mm - 0.063mm)	----	EC183A	1.0	%		14.5	11.8	15.8	10.9	13.8
sand (0.25mm - 0.125mm)	----	EC183A	1.0	%		<1.0	<1.0	<1.0	<1.0	<1.0
sand (0.5mm - 0.25mm)	----	EC183A	1.0	%		<1.0	<1.0	<1.0	<1.0	<1.0
sand (1.0mm - 0.50mm)	----	EC183A	1.0	%		<1.0	<1.0	<1.0	<1.0	<1.0
sand (2.0mm - 1.0mm)	----	EC183A	1.0	%		<1.0	<1.0	<1.0	<1.0	<1.0
gravel (>2mm)	----	EC183A	1.0	%		<1.0	<1.0	<1.0	<1.0	<1.0
Organic / Inorganic Carbon										
carbon, total organic [TOC]	----	EC356	0.050	%		15.1	8.95	11.9	10.7	25.8
Metals										
aluminum	7429-90-5	E440	50	mg/kg		12900	21400	17000	20900	9870
antimony	7440-36-0	E440	0.10	mg/kg		<0.10	0.22	0.18	0.24	<0.10
arsenic	7440-38-2	E440	0.10	mg/kg		1.77	6.72	4.43	5.50	1.66
barium	7440-39-3	E440	0.50	mg/kg		66.9	177	168	200	57.5
beryllium	7440-41-7	E440	0.10	mg/kg		0.34	0.67	0.61	0.71	0.37
bismuth	7440-69-9	E440	0.20	mg/kg		<0.20	0.30	0.26	0.33	<0.20
boron	7440-42-8	E440	5.0	mg/kg		<5.0	11.1	12.0	13.9	5.4
cadmium	7440-43-9	E440	0.020	mg/kg		0.561	0.693	1.00	0.869	0.419
calcium	7440-70-2	E440	50	mg/kg		10000	27400	25600	26200	15400
chromium	7440-47-3	E440	0.50	mg/kg		26.0	51.0	43.1	51.5	21.4
cobalt	7440-48-4	E440	0.10	mg/kg		4.94	11.7	11.8	12.1	5.37

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	CNC-DUP-02	NDR-GERLK-01	NDR-GERLK-02	NDR-GERLK-03	NDR-P-04-03
					Client sampling date / time	23-Oct-2022	19-Oct-2022 12:30	19-Oct-2022 13:00	19-Oct-2022 13:30	26-Oct-2022
						WT2219985-026	WT2219985-027	WT2219985-028	WT2219985-029	WT2219985-030
						Result	Result	Result	Result	Result
Metals										
copper	7440-50-8	E440	0.50	mg/kg		13.5	28.6	21.2	28.0	13.4
iron	7439-89-6	E440	50	mg/kg		9640	37900	38100	37100	10400
lead	7439-92-1	E440	0.50	mg/kg		9.35	25.0	20.2	25.0	7.69
lithium	7439-93-2	E440	2.0	mg/kg		13.3	28.4	25.4	30.3	10.8
magnesium	7439-95-4	E440	20	mg/kg		3420	15800	15200	15400	4710
manganese	7439-96-5	E440	1.0	mg/kg		252	887	914	606	291
molybdenum	7439-98-7	E440	0.10	mg/kg		0.24	0.63	0.39	0.80	0.31
nickel	7440-02-0	E440	0.50	mg/kg		12.0	33.2	28.6	31.8	13.1
phosphorus	7723-14-0	E440	50	mg/kg		907	853	1110	861	546
potassium	7440-09-7	E440	100	mg/kg		950	3080	2540	3010	1040
selenium	7782-49-2	E440	0.20	mg/kg		0.66	0.56	0.60	0.70	0.51
silver	7440-22-4	E440	0.10	mg/kg		<0.10	0.14	0.12	0.14	<0.10
sodium	7440-23-5	E440	50	mg/kg		120	351	283	356	116
strontium	7440-24-6	E440	0.50	mg/kg		34.2	41.6	43.1	47.0	48.1
sulfur	7704-34-9	E440	1000	mg/kg		1300	3300	1500	3500	1200
thallium	7440-28-0	E440	0.050	mg/kg		0.119	0.189	0.174	0.195	0.078
tin	7440-31-5	E440	2.0	mg/kg		<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg		312	767	651	796	328
tungsten	7440-33-7	E440	0.50	mg/kg		<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg		4.04	0.670	0.642	0.699	1.59
vanadium	7440-62-2	E440	0.20	mg/kg		23.0	44.2	38.5	46.9	19.5
zinc	7440-66-6	E440	2.0	mg/kg		57.0	131	145	156	45.1
zirconium	7440-67-7	E440	1.0	mg/kg		2.6	12.4	11.9	13.4	5.7
Leachable Anions & Nutrients										
Kjeldahl nitrogen, total [TKN]	----	E319	0.020	%		0.643	0.453	0.539	0.490	0.796

Please refer to the General Comments section for an explanation of any qualifiers detected.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2219985**	Page	: 1 of 23
Client	: **WSP E&I Canada Limited**	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 2020 Winston Park Drive Suite 600 Mississauga ON Canada L6H 6X7	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2002	Date Samples Received	: 28-Oct-2022 10:00
PO	: OMEMA2002.2021C.400.5120.573000	Issue Date	: 25-Nov-2022 13:24
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: OMEMA2002		
No. of samples received	: 30		
No. of samples analysed	: 30		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- Duplicate outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers occur - please see following pages for full details.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Soil/Solid**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Duplicate (DUP) RPDs								
Metals	Anonymous	Anonymous	selenium	7782-49-2	E440	0.41 % DUP-H	Diff <2x LOR	Low Level DUP DQO exceeded (difference > 2 LOR).

Result Qualifiers

Qualifier	Description
DUP-H	*Duplicate results outside ALS DQO, due to sample heterogeneity.*

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap WBR-P-03-01	E319	24-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	365 days	11 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap WBR-P-03-02	E319	24-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	365 days	11 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap WBR-P-03-3	E319	24-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	365 days	11 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap WBR-P-04-01	E319	24-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	365 days	11 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap WBR-P-04-02	E319	24-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	365 days	11 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap WBR-P-04-03	E319	24-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	365 days	11 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap NDR-JACLK-01	E319	22-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	365 days	13 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap NDR-JACLK-02	E319	22-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	365 days	13 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap NDR-JACLK-03	E319	22-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	365 days	13 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap NDR-P-04-03	E319	26-Oct-2022	07-Nov-2022	----	----		07-Nov-2022	365 days	13 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap NDR-SUTLK-01	E319	21-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	365 days	14 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap NDR-SUTLK-02	E319	21-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	365 days	14 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap NDR-SUTLK-03	E319	21-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	365 days	14 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap NDR-S-01-01	E319	23-Oct-2022	07-Nov-2022	----	----		07-Nov-2022	365 days	15 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap NDR-S-01-02	E319	23-Oct-2022	07-Nov-2022	----	----		07-Nov-2022	365 days	15 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap CNC-DUP-02	E319	23-Oct-2022	07-Nov-2022	----	----		07-Nov-2022	365 days	16 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap NDR-MARLK-01	E319	19-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	365 days	16 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap NDR-MARLK-02	E319	19-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	365 days	16 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap NDR-MARLK-03	E319	19-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	365 days	16 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap NDR-S-01-03	E319	23-Oct-2022	07-Nov-2022	----	----		07-Nov-2022	365 days	16 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap NDR-TRIB-01-01	E319	18-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	365 days	17 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap NDR-TRIB-01-02	E319	18-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	365 days	17 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap NDR-S-02-01	E319	17-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	365 days	18 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap NDR-S-02-02	E319	17-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	365 days	18 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap NDR-S-02-03	E319	17-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	365 days	18 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap										
NDR-GERLK-01	E319	19-Oct-2022	07-Nov-2022	----	----		07-Nov-2022	365 days	19 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap										
NDR-GERLK-02	E319	19-Oct-2022	07-Nov-2022	----	----		07-Nov-2022	365 days	19 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap										
NDR-GERLK-03	E319	19-Oct-2022	07-Nov-2022	----	----		07-Nov-2022	365 days	19 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap										
CNC-DUP-01	E319	19-Oct-2022	07-Nov-2022	----	----		07-Nov-2022	365 days	20 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
WBR-P-03-01	E440	24-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	11 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
WBR-P-03-02	E440	24-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	11 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
WBR-P-03-3	E440	24-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	11 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
WBR-P-04-01	E440	24-Oct-2022	03-Nov-2022	----	----		04-Nov-2022	180 days	11 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
WBR-P-04-02	E440	24-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	11 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
WBR-P-04-03	E440	24-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	11 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
CNC-DUP-02	E440	23-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	12 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
NDR-S-01-01	E440	23-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	12 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
NDR-S-01-02	E440	23-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	12 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
NDR-S-01-03	E440	23-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	12 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
NDR-JACLK-01	E440	22-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	13 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
NDR-JACLK-02	E440	22-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	13 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
NDR-JACLK-03	E440	22-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	13 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
NDR-SUTLK-01	E440	21-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	14 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap NDR-SUTLK-02	E440	21-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	14 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap NDR-SUTLK-03	E440	21-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	14 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap CNC-DUP-01	E440	19-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	16 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap NDR-GERLK-01	E440	19-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	16 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap NDR-GERLK-02	E440	19-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	16 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap NDR-GERLK-03	E440	19-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	16 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap NDR-MARLK-01	E440	19-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	16 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap NDR-MARLK-02	E440	19-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	16 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap NDR-MARLK-03	E440	19-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	16 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
NDR-TRIB-01-01	E440	18-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	17 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
NDR-TRIB-01-02	E440	18-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	17 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
NDR-S-02-01	E440	17-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	18 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
NDR-S-02-02	E440	17-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	18 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
NDR-S-02-03	E440	17-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	18 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
NDR-P-04-03	E440	26-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	180 days	9 days	✓
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap										
CNC-DUP-01	E185	19-Oct-2022	----	----	----		24-Nov-2022	----	----	
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap										
CNC-DUP-02	E185	23-Oct-2022	----	----	----		24-Nov-2022	----	----	
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap										
NDR-GERLK-01	E185	19-Oct-2022	----	----	----		24-Nov-2022	----	----	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap										
NDR-GERLK-02	E185	19-Oct-2022	----	----	----		24-Nov-2022	----	----	
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap										
NDR-GERLK-03	E185	19-Oct-2022	----	----	----		24-Nov-2022	----	----	
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap										
NDR-JACLK-01	E185	22-Oct-2022	----	----	----		24-Nov-2022	----	----	
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap										
NDR-JACLK-02	E185	22-Oct-2022	----	----	----		24-Nov-2022	----	----	
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap										
NDR-JACLK-03	E185	22-Oct-2022	----	----	----		17-Nov-2022	----	----	
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap										
NDR-MARLK-01	E185	19-Oct-2022	----	----	----		24-Nov-2022	----	----	
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap										
NDR-MARLK-02	E185	19-Oct-2022	----	----	----		24-Nov-2022	----	----	
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap										
NDR-MARLK-03	E185	19-Oct-2022	----	----	----		24-Nov-2022	----	----	
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap										
NDR-P-04-03	E185	26-Oct-2022	----	----	----		24-Nov-2022	----	----	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap NDR-S-01-01	E185	23-Oct-2022	----	----	----		24-Nov-2022	----	----	
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap NDR-S-01-02	E185	23-Oct-2022	----	----	----		24-Nov-2022	----	----	
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap NDR-S-01-03	E185	23-Oct-2022	----	----	----		24-Nov-2022	----	----	
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap NDR-S-02-01	E185	17-Oct-2022	----	----	----		17-Nov-2022	----	----	
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap NDR-S-02-02	E185	17-Oct-2022	----	----	----		17-Nov-2022	----	----	
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap NDR-S-02-03	E185	17-Oct-2022	----	----	----		17-Nov-2022	----	----	
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap NDR-SUTLK-01	E185	21-Oct-2022	----	----	----		24-Nov-2022	----	----	
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap NDR-SUTLK-02	E185	21-Oct-2022	----	----	----		24-Nov-2022	----	----	
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap NDR-SUTLK-03	E185	21-Oct-2022	----	----	----		24-Nov-2022	----	----	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap										
NDR-TRIB-01-01	E185	18-Oct-2022	----	----	----		17-Nov-2022	----	----	
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap										
NDR-TRIB-01-02	E185	18-Oct-2022	----	----	----		17-Nov-2022	----	----	
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap										
WBR-P-03-01	E185	24-Oct-2022	----	----	----		17-Nov-2022	----	----	
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap										
WBR-P-03-02	E185	24-Oct-2022	----	----	----		17-Nov-2022	----	----	
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap										
WBR-P-03-3	E185	24-Oct-2022	----	----	----		24-Nov-2022	----	----	
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap										
WBR-P-04-01	E185	24-Oct-2022	----	----	----		24-Nov-2022	----	----	
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap										
WBR-P-04-02	E185	24-Oct-2022	----	----	----		17-Nov-2022	----	----	
Particle Size : Grain Size Report (Attachment) Hydrometer/Sieve Method										
Glass soil jar/Teflon lined cap										
WBR-P-04-03	E185	24-Oct-2022	----	----	----		24-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
CNC-DUP-01	E144	19-Oct-2022	----	----	----		29-Oct-2022	----	----	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
CNC-DUP-02	E144	23-Oct-2022	----	----	----		29-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
NDR-GERLK-01	E144	19-Oct-2022	----	----	----		29-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
NDR-GERLK-02	E144	19-Oct-2022	----	----	----		29-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
NDR-GERLK-03	E144	19-Oct-2022	----	----	----		29-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
NDR-JACLK-01	E144	22-Oct-2022	----	----	----		29-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
NDR-JACLK-02	E144	22-Oct-2022	----	----	----		29-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
NDR-JACLK-03	E144	22-Oct-2022	----	----	----		29-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
NDR-MARLK-01	E144	19-Oct-2022	----	----	----		29-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
NDR-MARLK-02	E144	19-Oct-2022	----	----	----		29-Oct-2022	----	----	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
NDR-MARLK-03	E144	19-Oct-2022	----	----	----		29-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
NDR-P-04-03	E144	26-Oct-2022	----	----	----		03-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
NDR-S-01-01	E144	23-Oct-2022	----	----	----		29-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
NDR-S-01-02	E144	23-Oct-2022	----	----	----		29-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
NDR-S-01-03	E144	23-Oct-2022	----	----	----		29-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
NDR-S-02-01	E144	17-Oct-2022	----	----	----		03-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
NDR-S-02-02	E144	17-Oct-2022	----	----	----		03-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
NDR-S-02-03	E144	17-Oct-2022	----	----	----		03-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
NDR-SUTLK-01	E144	21-Oct-2022	----	----	----		29-Oct-2022	----	----	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
NDR-SUTLK-02	E144	21-Oct-2022	----	----	----		29-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
NDR-SUTLK-03	E144	21-Oct-2022	----	----	----		29-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
NDR-TRIB-01-01	E144	18-Oct-2022	----	----	----		03-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
NDR-TRIB-01-02	E144	18-Oct-2022	----	----	----		03-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
WBR-P-03-01	E144	24-Oct-2022	----	----	----		29-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
WBR-P-03-02	E144	24-Oct-2022	----	----	----		29-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
WBR-P-03-3	E144	24-Oct-2022	----	----	----		29-Oct-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
WBR-P-04-01	E144	24-Oct-2022	----	----	----		03-Nov-2022	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
WBR-P-04-02	E144	24-Oct-2022	----	----	----		03-Nov-2022	----	----	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap										
WBR-P-04-03	E144	24-Oct-2022	----	----	----		03-Nov-2022	----	----	
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
NDR-JACLK-01	E108A	22-Oct-2022	30-Oct-2022	----	----		31-Oct-2022	30 days	10 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
NDR-JACLK-02	E108A	22-Oct-2022	30-Oct-2022	----	----		31-Oct-2022	30 days	10 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
NDR-JACLK-03	E108A	22-Oct-2022	30-Oct-2022	----	----		31-Oct-2022	30 days	10 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
NDR-SUTLK-01	E108A	21-Oct-2022	30-Oct-2022	----	----		31-Oct-2022	30 days	11 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
NDR-SUTLK-02	E108A	21-Oct-2022	30-Oct-2022	----	----		31-Oct-2022	30 days	11 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
NDR-SUTLK-03	E108A	21-Oct-2022	30-Oct-2022	----	----		31-Oct-2022	30 days	11 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
WBR-P-04-01	E108A	24-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	30 days	11 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
WBR-P-04-02	E108A	24-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	30 days	11 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
WBR-P-04-03	E108A	24-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	30 days	11 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
NDR-MARLK-01	E108A	19-Oct-2022	30-Oct-2022	----	----		31-Oct-2022	30 days	12 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
NDR-MARLK-02	E108A	19-Oct-2022	30-Oct-2022	----	----		31-Oct-2022	30 days	12 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
NDR-MARLK-03	E108A	19-Oct-2022	30-Oct-2022	----	----		31-Oct-2022	30 days	12 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
CNC-DUP-01	E108A	19-Oct-2022	30-Oct-2022	----	----		31-Oct-2022	30 days	13 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
NDR-GERLK-01	E108A	19-Oct-2022	30-Oct-2022	----	----		31-Oct-2022	30 days	13 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
NDR-GERLK-02	E108A	19-Oct-2022	30-Oct-2022	----	----		31-Oct-2022	30 days	13 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
NDR-GERLK-03	E108A	19-Oct-2022	30-Oct-2022	----	----		31-Oct-2022	30 days	13 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
NDR-TRIB-01-01	E108A	18-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	30 days	17 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
NDR-TRIB-01-02	E108A	18-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	30 days	17 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
NDR-S-02-01	E108A	17-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	30 days	18 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
NDR-S-02-02	E108A	17-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	30 days	18 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
NDR-S-02-03	E108A	17-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	30 days	18 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
WBR-P-03-01	E108A	24-Oct-2022	30-Oct-2022	----	----		31-Oct-2022	30 days	8 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
WBR-P-03-02	E108A	24-Oct-2022	30-Oct-2022	----	----		31-Oct-2022	30 days	8 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
WBR-P-03-3	E108A	24-Oct-2022	30-Oct-2022	----	----		31-Oct-2022	30 days	8 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
CNC-DUP-02	E108A	23-Oct-2022	30-Oct-2022	----	----		31-Oct-2022	30 days	9 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
NDR-P-04-03	E108A	26-Oct-2022	04-Nov-2022	----	----		04-Nov-2022	30 days	9 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
NDR-S-01-01	E108A	23-Oct-2022	30-Oct-2022	----	----		31-Oct-2022	30 days	9 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
NDR-S-01-02	E108A	23-Oct-2022	30-Oct-2022	----	----		31-Oct-2022	30 days	9 days	✓
Physical Tests : pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received										
Glass soil jar/Teflon lined cap										
NDR-S-01-03	E108A	23-Oct-2022	30-Oct-2022	----	----		31-Oct-2022	30 days	9 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: ✗ = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Metals in Soil/Solid by CRC ICPMS	E440	730670	2	49	4.0	5.0	✗
Moisture Content by Gravimetry	E144	729622	2	35	5.7	5.0	✓
pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received	E108A	721907	2	35	5.7	5.0	✓
Total Kjeldahl Nitrogen by Colourimetry	E319	733593	2	36	5.5	5.0	✓
Laboratory Control Samples (LCS)							
Metals in Soil/Solid by CRC ICPMS	E440	730670	6	49	12.2	10.0	✓
Moisture Content by Gravimetry	E144	729622	2	35	5.7	5.0	✓
pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received	E108A	721907	2	35	5.7	5.0	✓
Total Kjeldahl Nitrogen by Colourimetry	E319	733593	4	36	11.1	10.0	✓
Method Blanks (MB)							
Metals in Soil/Solid by CRC ICPMS	E440	730670	3	49	6.1	5.0	✓
Moisture Content by Gravimetry	E144	729622	2	35	5.7	5.0	✓
Total Kjeldahl Nitrogen by Colourimetry	E319	733593	2	36	5.5	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter (1:2 Soil:0.01M CaCl2 Extraction) - As Received	E108A Waterloo - Environmental	Soil/Solid	MOEE E3137A	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C) and is carried out in accordance with procedures described in the Analytical Protocol (prescriptive method). A minimum 10g portion of the sample, as received, is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil by centrifuging, settling, or decanting and then analyzed using a pH meter and electrode.
Moisture Content by Gravimetry	E144 Waterloo - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1	Moisture is measured gravimetrically by drying the sample at 105°C. Moisture content is calculated as the weight loss (due to water) divided by the wet weight of the sample, expressed as a percentage.
Grain Size Report (Attachment) Hydrometer/Sieve Method	E185 Saskatoon - Environmental	Soil/Solid	ASTM D6913/D7928	A grain size curve is a graphical representation of the particle sizing of a sample representing the percent passing against the effective particle size.
Total Kjeldahl Nitrogen by Colourimetry	E319 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 22.2.3	The soil is digested with sulfuric acid in the presence of CuSO4 and K2SO4 catalysts. Ammonia in the soil extract is determined colrimetrically at 660 nm.
Metals in Soil/Solid by CRC ICPMS	E440 Saskatoon - Environmental	Soil/Solid	EPA 6020B (mod)	This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 2 mm sieve, and digested with HNO3 and HCl. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Silicate minerals are not solubilized. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. This method does not adequately recover elemental sulfur, and is unsuitable for assessment of elemental sulfur standards or guidelines. Analysis is by Collision/Reaction Cell ICPMS.
Particle Size Analysis (Hydrometer) - Wentworth Classification	EC183A Saskatoon - Environmental	Soil/Solid	Modified Wentworth	The particle size determination is performed by various methods to generate a Grain Size curve. The data from the curve is then used to produce particle size ranges based on the Modified Wentworth Classification system.
Total Organic Carbon (Calculated) in soil	EC356 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2	Total Organic Carbon (TOC) is calculated by the difference between total carbon (TC) and total inorganic carbon (TIC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Leach 1:2 Soil : 0.01CaCl2 - As Received for pH	EP108A Waterloo - Environmental	Soil/Solid	MOEE E3137A	A minimum 10g portion of the sample, as received, is extracted with 20mL of 0.01M calcium chloride solution by shaking for at least 30 minutes. The aqueous layer is separated from the soil by centrifuging, settling or decanting and then analyzed using a pH meter and electrode.
Kjeldahl Digestion for soils	EP319 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 22.2.3	The soil is digested with sulfuric acid in the presence of CuSO4 and K2SO4 catalysts.
Digestion for Metals and Mercury	EP440 Saskatoon - Environmental	Soil/Solid	EPA 200.2 (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO3 and HCl. This method is intended to liberate metals that may be environmentally available.
Dry and Grind in Soil/Solid <60°C	EPP442 Waterloo - Environmental	Soil/Solid	Soil Sampling and Methods of Analysis, Carter 2008	After removal of any coarse fragments and reservation of wet subsamples a portion of homogenized sample is set in a tray and dried at less than 60°C until dry. The sample is then particle size reduced with an automated crusher or mortar and pestle, typically to <2 mm. Further size reduction may be needed for particular tests.

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QUALITY CONTROL REPORT

Work Order	: **WT2219985**	Page	: 1 of 17
Client	: WSP E&I Canada Limited	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 2020 Winston Park Drive Suite 600 Mississauga ON Canada L6H 6X7	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	:	Telephone	: +1 519 886 6910
Project	: OMEMA2002	Date Samples Received	: 28-Oct-2022 10:00
PO	: OMEMA2002.2021C.400.5120.573000	Date Analysis Commenced	: 29-Oct-2022
C-O-C number	: ----	Issue Date	: 25-Nov-2022 13:24
Sampler	: ---- 905 568 2929, Ext. 4140		
Site	: ----		
Quote number	: OMEMA2002		
No. of samples received	: 30		
No. of samples analysed	: 30		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Reference Material (RM) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Colby Bingham	Quality Systems Coordinator	Saskatoon Sask Soils, Saskatoon, Saskatchewan
Greg Pokocky	Supervisor - Inorganic	Waterloo Inorganics, Waterloo, Ontario
Hedy Lai	Team Leader - Inorganics	Saskatoon Inorganics, Saskatoon, Saskatchewan
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Jwan Abdalla	Laboratory Analyst	Saskatoon Metals, Saskatoon, Saskatchewan
Niral Patel		Waterloo Centralized Prep, Waterloo, Ontario

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Soil/Solid**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 721907)											
WT2219985-010	NDR-MARLK-01	pH (1:2 soil:CaCl2-aq)	----	E108A	0.10	pH units	6.43	6.22	3.32%	5%	----
Physical Tests (QC Lot: 721909)											
WT2219985-010	NDR-MARLK-01	moisture	----	E144	0.25	%	69.6	70.2	0.902%	20%	----
Physical Tests (QC Lot: 729617)											
WT2219963-001	Anonymous	pH (1:2 soil:CaCl2-aq)	----	E108A	0.10	pH units	7.87	7.96	1.14%	5%	----
Physical Tests (QC Lot: 729622)											
WT2219782-001	Anonymous	moisture	----	E144	0.25	%	26.3	26.0	0.963%	20%	----
Metals (QC Lot: 728399)											
RG2201629-001	Anonymous	aluminum	7429-90-5	E440	50	mg/kg	11100	10800	2.27%	40%	----
		antimony	7440-36-0	E440	0.10	mg/kg	0.77	0.73	4.54%	30%	----
		arsenic	7440-38-2	E440	0.10	mg/kg	22.2	18.9	16.2%	30%	----
		barium	7440-39-3	E440	0.50	mg/kg	302	351	15.0%	40%	----
		beryllium	7440-41-7	E440	0.10	mg/kg	0.58	0.60	0.02	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.20	mg/kg	0.27	0.28	0.007	Diff <2x LOR	----
		boron	7440-42-8	E440	5.0	mg/kg	12.0	12.2	0.3	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	0.132	0.152	13.8%	30%	----
		calcium	7440-70-2	E440	50	mg/kg	6170	4760	25.7%	30%	----
		chromium	7440-47-3	E440	0.50	mg/kg	20.3	19.5	3.79%	30%	----
		cobalt	7440-48-4	E440	0.10	mg/kg	14.1	14.3	1.45%	30%	----
		copper	7440-50-8	E440	0.50	mg/kg	29.5	28.9	1.86%	30%	----
		iron	7439-89-6	E440	50	mg/kg	22400	21300	5.16%	30%	----
		lead	7439-92-1	E440	0.50	mg/kg	15.6	15.2	2.47%	40%	----
		lithium	7439-93-2	E440	2.0	mg/kg	25.0	26.1	4.34%	30%	----
		magnesium	7439-95-4	E440	20	mg/kg	7400	7140	3.46%	30%	----
		manganese	7439-96-5	E440	1.0	mg/kg	309	402	26.1%	30%	----
		molybdenum	7439-98-7	E440	0.10	mg/kg	1.48	1.38	6.44%	40%	----
		nickel	7440-02-0	E440	0.50	mg/kg	42.3	45.0	6.26%	30%	----
		phosphorus	7723-14-0	E440	50	mg/kg	750	708	5.76%	30%	----
		potassium	7440-09-7	E440	100	mg/kg	2410	2340	2.78%	40%	----
		selenium	7782-49-2	E440	0.20	mg/kg	1.05	# 0.64	0.41	Diff <2x LOR	DUP-H

Sub-Matrix: **Soil/Solid**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Metals (QC Lot: 728399) - continued											
RG2201629-001	Anonymous	silver	7440-22-4	E440	0.10	mg/kg	<0.10	<0.10	0	Diff <2x LOR	----
		sodium	7440-23-5	E440	50	mg/kg	3560	3430	3.69%	40%	----
		strontium	7440-24-6	E440	0.50	mg/kg	80.6	80.0	0.737%	40%	----
		sulfur	7704-34-9	E440	1000	mg/kg	4000	3000	1000	Diff <2x LOR	----
		thallium	7440-28-0	E440	0.050	mg/kg	0.210	0.228	0.018	Diff <2x LOR	----
		tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
		titanium	7440-32-6	E440	1.0	mg/kg	38.4	41.4	7.66%	40%	----
		tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		uranium	7440-61-1	E440	0.050	mg/kg	1.78	1.80	0.786%	30%	----
		vanadium	7440-62-2	E440	0.20	mg/kg	32.6	31.2	4.41%	30%	----
		zinc	7440-66-6	E440	2.0	mg/kg	108	103	4.69%	30%	----
		zirconium	7440-67-7	E440	1.0	mg/kg	7.1	7.0	0.724%	30%	----
Metals (QC Lot: 729217)											
WT2219985-023	NDR-S-01-02	aluminum	7429-90-5	E440	50	mg/kg	13100	12500	4.51%	40%	----
		antimony	7440-36-0	E440	0.10	mg/kg	<0.10	<0.10	0	Diff <2x LOR	----
		arsenic	7440-38-2	E440	0.10	mg/kg	1.83	1.66	9.70%	30%	----
		barium	7440-39-3	E440	0.50	mg/kg	67.6	64.2	5.14%	40%	----
		beryllium	7440-41-7	E440	0.10	mg/kg	0.35	0.33	0.02	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	0	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	0.635	0.593	6.86%	30%	----
		calcium	7440-70-2	E440	50	mg/kg	10600	9830	7.49%	30%	----
		chromium	7440-47-3	E440	0.50	mg/kg	26.8	25.6	4.56%	30%	----
		cobalt	7440-48-4	E440	0.10	mg/kg	5.05	4.86	3.93%	30%	----
		copper	7440-50-8	E440	0.50	mg/kg	13.2	12.7	4.47%	30%	----
		iron	7439-89-6	E440	50	mg/kg	9860	9310	5.78%	30%	----
		lead	7439-92-1	E440	0.50	mg/kg	9.91	9.33	5.98%	40%	----
		lithium	7439-93-2	E440	2.0	mg/kg	13.6	12.2	1.4	Diff <2x LOR	----
		magnesium	7439-95-4	E440	20	mg/kg	3470	3260	6.07%	30%	----
		manganese	7439-96-5	E440	1.0	mg/kg	256	248	3.31%	30%	----
		molybdenum	7439-98-7	E440	0.10	mg/kg	0.24	0.24	0.003	Diff <2x LOR	----
		nickel	7440-02-0	E440	0.50	mg/kg	12.3	11.8	3.63%	30%	----
		phosphorus	7723-14-0	E440	50	mg/kg	902	829	8.43%	30%	----
		potassium	7440-09-7	E440	100	mg/kg	950	900	4.81%	40%	----

Sub-Matrix: **Soil/Solid**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Metals (QC Lot: 729217) - continued											
WT2219985-023	NDR-S-01-02	selenium	7782-49-2	E440	0.20	mg/kg	0.68	0.63	0.05	Diff <2x LOR	----
		silver	7440-22-4	E440	0.10	mg/kg	<0.10	<0.10	0	Diff <2x LOR	----
		sodium	7440-23-5	E440	50	mg/kg	116	106	10	Diff <2x LOR	----
		strontium	7440-24-6	E440	0.50	mg/kg	32.5	32.2	0.975%	40%	----
		sulfur	7704-34-9	E440	1000	mg/kg	1200	1200	50	Diff <2x LOR	----
		thallium	7440-28-0	E440	0.050	mg/kg	0.127	0.119	0.008	Diff <2x LOR	----
		tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
		titanium	7440-32-6	E440	1.0	mg/kg	291	266	8.92%	40%	----
		tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		uranium	7440-61-1	E440	0.050	mg/kg	4.58	4.38	4.32%	30%	----
		vanadium	7440-62-2	E440	0.20	mg/kg	22.7	22.0	3.27%	30%	----
		zinc	7440-66-6	E440	2.0	mg/kg	59.4	56.3	5.41%	30%	----
		zirconium	7440-67-7	E440	1.0	mg/kg	3.0	2.9	0.08	Diff <2x LOR	----
Leachable Anions & Nutrients (QC Lot: 730587)											
WT2219985-003	WBR-P-04-03	Kjeldahl nitrogen, total [TKN]	----	E319	970	mg/kg	0.856 %	8160	400	Diff <2x LOR	----
Leachable Anions & Nutrients (QC Lot: 733593)											
WT2219985-024	NDR-S-01-03	Kjeldahl nitrogen, total [TKN]	----	E319	1710	mg/kg	0.848 %	8650	170	Diff <2x LOR	----

Qualifiers

Qualifier	*Description*
DUP-H	*Duplicate results outside ALS DQO, due to sample heterogeneity.*

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 721909)						
moisture	----	E144	0.25	%	<0.25	----
Physical Tests (QCLot: 729622)						
moisture	----	E144	0.25	%	<0.25	----
Metals (QCLot: 728399)						
aluminum	7429-90-5	E440	50	mg/kg	<50	----
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	----
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	----
barium	7440-39-3	E440	0.5	mg/kg	<0.50	----
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	----
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	----
boron	7440-42-8	E440	5	mg/kg	<5.0	----
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	----
calcium	7440-70-2	E440	50	mg/kg	<50	----
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	----
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	----
copper	7440-50-8	E440	0.5	mg/kg	<0.50	----
iron	7439-89-6	E440	50	mg/kg	<50	----
lead	7439-92-1	E440	0.5	mg/kg	<0.50	----
lithium	7439-93-2	E440	2	mg/kg	<2.0	----
magnesium	7439-95-4	E440	20	mg/kg	<20	----
manganese	7439-96-5	E440	1	mg/kg	<1.0	----
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----
phosphorus	7723-14-0	E440	50	mg/kg	<50	----
potassium	7440-09-7	E440	100	mg/kg	<100	----
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	----
silver	7440-22-4	E440	0.1	mg/kg	<0.10	----
sodium	7440-23-5	E440	50	mg/kg	<50	----
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	----
sulfur	7704-34-9	E440	1000	mg/kg	<1000	----
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	----
tin	7440-31-5	E440	2	mg/kg	<2.0	----

Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 728399) - continued						
titanium	7440-32-6	E440	1	mg/kg	<1.0	----
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
zinc	7440-66-6	E440	2	mg/kg	<2.0	----
zirconium	7440-67-7	E440	1	mg/kg	<1.0	----
Metals (QCLot: 729217)						
aluminum	7429-90-5	E440	50	mg/kg	<50	----
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	----
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	----
barium	7440-39-3	E440	0.5	mg/kg	<0.50	----
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	----
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	----
boron	7440-42-8	E440	5	mg/kg	<5.0	----
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	----
calcium	7440-70-2	E440	50	mg/kg	<50	----
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	----
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	----
copper	7440-50-8	E440	0.5	mg/kg	<0.50	----
iron	7439-89-6	E440	50	mg/kg	<50	----
lead	7439-92-1	E440	0.5	mg/kg	<0.50	----
lithium	7439-93-2	E440	2	mg/kg	<2.0	----
magnesium	7439-95-4	E440	20	mg/kg	<20	----
manganese	7439-96-5	E440	1	mg/kg	<1.0	----
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----
phosphorus	7723-14-0	E440	50	mg/kg	<50	----
potassium	7440-09-7	E440	100	mg/kg	<100	----
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	----
silver	7440-22-4	E440	0.1	mg/kg	<0.10	----
sodium	7440-23-5	E440	50	mg/kg	<50	----
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	----
sulfur	7704-34-9	E440	1000	mg/kg	<1000	----
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	----
tin	7440-31-5	E440	2	mg/kg	<2.0	----

Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 729217) - continued						
titanium	7440-32-6	E440	1	mg/kg	<1.0	----
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
zinc	7440-66-6	E440	2	mg/kg	<2.0	----
zirconium	7440-67-7	E440	1	mg/kg	<1.0	----
Metals (QCLot: 730670)						
aluminum	7429-90-5	E440	50	mg/kg	<50	----
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	----
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	----
barium	7440-39-3	E440	0.5	mg/kg	<0.50	----
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	----
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	----
boron	7440-42-8	E440	5	mg/kg	<5.0	----
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	----
calcium	7440-70-2	E440	50	mg/kg	<50	----
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	----
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	----
copper	7440-50-8	E440	0.5	mg/kg	<0.50	----
iron	7439-89-6	E440	50	mg/kg	<50	----
lead	7439-92-1	E440	0.5	mg/kg	<0.50	----
lithium	7439-93-2	E440	2	mg/kg	<2.0	----
magnesium	7439-95-4	E440	20	mg/kg	<20	----
manganese	7439-96-5	E440	1	mg/kg	<1.0	----
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----
phosphorus	7723-14-0	E440	50	mg/kg	<50	----
potassium	7440-09-7	E440	100	mg/kg	<100	----
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	----
silver	7440-22-4	E440	0.1	mg/kg	<0.10	----
sodium	7440-23-5	E440	50	mg/kg	<50	----
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	----
sulfur	7704-34-9	E440	1000	mg/kg	<1000	----
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	----
tin	7440-31-5	E440	2	mg/kg	<2.0	----

Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 730670) - continued						
titanium	7440-32-6	E440	1	mg/kg	<1.0	----
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
zinc	7440-66-6	E440	2	mg/kg	<2.0	----
zirconium	7440-67-7	E440	1	mg/kg	<1.0	----
Leachable Anions & Nutrients (QCLot: 730587)						
Kjeldahl nitrogen, total [TKN]	----	E319	200	mg/kg	<200	----
Leachable Anions & Nutrients (QCLot: 733593)						
Kjeldahl nitrogen, total [TKN]	----	E319	200	mg/kg	<200	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Soil/Solid**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 721907)									
pH (1:2 soil:CaCl2-aq)	----	E108A	----	pH units	7 pH units	101	98.0	102	----
Physical Tests (QCLot: 721909)									
moisture	----	E144	0.25	%	50 %	99.4	90.0	110	----
Physical Tests (QCLot: 729617)									
pH (1:2 soil:CaCl2-aq)	----	E108A	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 729622)									
moisture	----	E144	0.25	%	50 %	99.7	90.0	110	----
Metals (QCLot: 728399)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	99.9	80.0	120	----
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	100	80.0	120	----
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	100	80.0	120	----
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	101	80.0	120	----
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	90.5	80.0	120	----
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	95.0	80.0	120	----
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	87.8	80.0	120	----
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	100	80.0	120	----
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	99.7	80.0	120	----
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	101	80.0	120	----
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	101	80.0	120	----
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	101	80.0	120	----
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	102	80.0	120	----
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	94.3	80.0	120	----
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	88.0	80.0	120	----
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	99.4	80.0	120	----
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	99.0	80.0	120	----
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	101	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	100	80.0	120	----
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	110	80.0	120	----
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	101	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	98.4	80.0	120	----
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	92.6	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	99.5	80.0	120	----

Sub-Matrix: **Soil/Solid**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Metals (QCLot: 728399) - continued									
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	102	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	92.1	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	93.7	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	99.6	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	95.1	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	93.6	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	96.3	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	103	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	100	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	99.7	80.0	120	----
Metals (QCLot: 729217)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	101	80.0	120	----
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	102	80.0	120	----
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	101	80.0	120	----
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	100	80.0	120	----
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	92.8	80.0	120	----
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	96.8	80.0	120	----
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	88.9	80.0	120	----
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	101	80.0	120	----
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	99.2	80.0	120	----
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	102	80.0	120	----
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	104	80.0	120	----
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	102	80.0	120	----
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	105	80.0	120	----
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	95.4	80.0	120	----
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	94.5	80.0	120	----
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	101	80.0	120	----
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	99.7	80.0	120	----
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	103	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	102	80.0	120	----
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	115	80.0	120	----
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	103	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	101	80.0	120	----
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	94.8	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	105	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	103	80.0	120	----

Sub-Matrix: **Soil/Solid**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Metals (QCLot: 729217) - continued									
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	99.9	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	94.2	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	101	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	93.8	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	95.7	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	97.0	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	104	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	101	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	102	80.0	120	----
Metals (QCLot: 730670)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	103	80.0	120	----
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	104	80.0	120	----
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	99.7	80.0	120	----
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	101	80.0	120	----
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	95.7	80.0	120	----
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	98.6	80.0	120	----
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	93.8	80.0	120	----
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	98.2	80.0	120	----
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	96.1	80.0	120	----
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	100	80.0	120	----
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	98.2	80.0	120	----
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	98.8	80.0	120	----
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	103	80.0	120	----
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	98.9	80.0	120	----
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	90.6	80.0	120	----
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	101	80.0	120	----
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	100	80.0	120	----
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	96.9	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	97.2	80.0	120	----
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	98.5	80.0	120	----
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	102	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	95.1	80.0	120	----
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	89.9	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	102	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	97.7	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	95.3	80.0	120	----

Sub-Matrix: **Soil/Solid**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Metals (QCLot: 730670) - continued									
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	98.6	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	101	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	100	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	99.9	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	98.4	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	101	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	98.7	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	96.5	80.0	120	----
Leachable Anions & Nutrients (QCLot: 730587)									
Kjeldahl nitrogen, total [TKN]	----	E319	200	mg/kg	1000 mg/kg	80.8	80.0	120	----
Leachable Anions & Nutrients (QCLot: 733593)									
Kjeldahl nitrogen, total [TKN]	----	E319	200	mg/kg	1000 mg/kg	80.4	80.0	120	----

Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix:

					Reference Material (RM) Report				
					RM Target	Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Concentration	RM	Low	High	Qualifier
Metals (QCLot: 728399)									
	RM	aluminum	7429-90-5	E440	9817 mg/kg	90.9	70.0	130	----
	RM	antimony	7440-36-0	E440	3.99 mg/kg	88.8	70.0	130	----
	RM	arsenic	7440-38-2	E440	3.73 mg/kg	98.5	70.0	130	----
	RM	barium	7440-39-3	E440	105 mg/kg	99.7	70.0	130	----
	RM	beryllium	7440-41-7	E440	0.349 mg/kg	92.2	70.0	130	----
	RM	boron	7440-42-8	E440	8.5 mg/kg	99.5	40.0	160	----
	RM	cadmium	7440-43-9	E440	0.91 mg/kg	105	70.0	130	----
	RM	calcium	7440-70-2	E440	31082 mg/kg	93.4	70.0	130	----
	RM	chromium	7440-47-3	E440	101 mg/kg	88.7	70.0	130	----
	RM	cobalt	7440-48-4	E440	6.9 mg/kg	98.8	70.0	130	----
	RM	copper	7440-50-8	E440	123 mg/kg	106	70.0	130	----
	RM	iron	7439-89-6	E440	23558 mg/kg	95.6	70.0	130	----
	RM	lead	7439-92-1	E440	267 mg/kg	92.6	70.0	130	----
	RM	lithium	7439-93-2	E440	9.5 mg/kg	92.1	70.0	130	----
	RM	magnesium	7439-95-4	E440	5509 mg/kg	91.8	70.0	130	----
	RM	manganese	7439-96-5	E440	269 mg/kg	91.3	70.0	130	----
	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	112	70.0	130	----
	RM	nickel	7440-02-0	E440	26.7 mg/kg	103	70.0	130	----
	RM	phosphorus	7723-14-0	E440	752 mg/kg	109	70.0	130	----
	RM	potassium	7440-09-7	E440	1587 mg/kg	94.2	70.0	130	----
	RM	silver	7440-22-4	E440	4.06 mg/kg	93.4	70.0	130	----
	RM	sodium	7440-23-5	E440	797 mg/kg	101	70.0	130	----
	RM	strontium	7440-24-6	E440	86.1 mg/kg	96.6	70.0	130	----
	RM	thallium	7440-28-0	E440	0.0786 mg/kg	100	40.0	160	----
	RM	tin	7440-31-5	E440	10.6 mg/kg	95.9	70.0	130	----
	RM	titanium	7440-32-6	E440	839 mg/kg	77.5	70.0	130	----
	RM	uranium	7440-61-1	E440	0.52 mg/kg	104	70.0	130	----

Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report: RM Target Concentration	Recovery (%): RM	Recovery Limits (%): Low	Recovery Limits (%): High	Qualifier
Metals (QCLot: 728399) - continued									
	RM	vanadium	7440-62-2	E440	32.7 mg/kg	92.5	70.0	130	----
	RM	zinc	7440-66-6	E440	297 mg/kg	99.2	70.0	130	----
	RM	zirconium	7440-67-7	E440	5.73 mg/kg	97.7	70.0	130	----
Metals (QCLot: 729217)									
	RM	aluminum	7429-90-5	E440	9817 mg/kg	89.7	70.0	130	----
	RM	antimony	7440-36-0	E440	3.99 mg/kg	95.3	70.0	130	----
	RM	arsenic	7440-38-2	E440	3.73 mg/kg	99.7	70.0	130	----
	RM	barium	7440-39-3	E440	105 mg/kg	99.0	70.0	130	----
	RM	beryllium	7440-41-7	E440	0.349 mg/kg	85.0	70.0	130	----
	RM	boron	7440-42-8	E440	8.5 mg/kg	96.7	40.0	160	----
	RM	cadmium	7440-43-9	E440	0.91 mg/kg	105	70.0	130	----
	RM	calcium	7440-70-2	E440	31082 mg/kg	93.9	70.0	130	----
	RM	chromium	7440-47-3	E440	101 mg/kg	88.3	70.0	130	----
	RM	cobalt	7440-48-4	E440	6.9 mg/kg	98.3	70.0	130	----
	RM	copper	7440-50-8	E440	123 mg/kg	106	70.0	130	----
	RM	iron	7439-89-6	E440	23558 mg/kg	95.5	70.0	130	----
	RM	lead	7439-92-1	E440	267 mg/kg	93.0	70.0	130	----
	RM	lithium	7439-93-2	E440	9.5 mg/kg	84.6	70.0	130	----
	RM	magnesium	7439-95-4	E440	5509 mg/kg	91.2	70.0	130	----
	RM	manganese	7439-96-5	E440	269 mg/kg	90.8	70.0	130	----
	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	117	70.0	130	----
	RM	nickel	7440-02-0	E440	26.7 mg/kg	103	70.0	130	----
	RM	phosphorus	7723-14-0	E440	752 mg/kg	98.9	70.0	130	----
	RM	potassium	7440-09-7	E440	1587 mg/kg	94.5	70.0	130	----
	RM	silver	7440-22-4	E440	4.06 mg/kg	107	70.0	130	----
	RM	sodium	7440-23-5	E440	797 mg/kg	96.4	70.0	130	----
	RM	strontium	7440-24-6	E440	86.1 mg/kg	101	70.0	130	----
	RM	thallium	7440-28-0	E440	0.0786 mg/kg	86.2	40.0	160	----
	RM	tin	7440-31-5	E440	10.6 mg/kg	108	70.0	130	----
	RM	titanium	7440-32-6	E440	839 mg/kg	79.7	70.0	130	----
	RM	uranium	7440-61-1	E440	0.52 mg/kg	88.6	70.0	130	----

Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report: RM Target Concentration	Recovery (%): RM	Recovery Limits (%): Low	Recovery Limits (%): High	Qualifier
Metals (QCLot: 729217) - continued									
	RM	vanadium	7440-62-2	E440	32.7 mg/kg	92.9	70.0	130	----
	RM	zinc	7440-66-6	E440	297 mg/kg	97.2	70.0	130	----
	RM	zirconium	7440-67-7	E440	5.73 mg/kg	102	70.0	130	----
Metals (QCLot: 730670)									
	RM	aluminum	7429-90-5	E440	9817 mg/kg	94.2	70.0	130	----
	RM	antimony	7440-36-0	E440	3.99 mg/kg	97.9	70.0	130	----
	RM	arsenic	7440-38-2	E440	3.73 mg/kg	98.2	70.0	130	----
	RM	barium	7440-39-3	E440	105 mg/kg	101	70.0	130	----
	RM	beryllium	7440-41-7	E440	0.349 mg/kg	89.3	70.0	130	----
	RM	boron	7440-42-8	E440	8.5 mg/kg	90.5	40.0	160	----
	RM	cadmium	7440-43-9	E440	0.91 mg/kg	107	70.0	130	----
	RM	calcium	7440-70-2	E440	31082 mg/kg	88.8	70.0	130	----
	RM	chromium	7440-47-3	E440	101 mg/kg	88.2	70.0	130	----
	RM	cobalt	7440-48-4	E440	6.9 mg/kg	97.6	70.0	130	----
	RM	copper	7440-50-8	E440	123 mg/kg	108	70.0	130	----
	RM	iron	7439-89-6	E440	23558 mg/kg	99.8	70.0	130	----
	RM	lead	7439-92-1	E440	267 mg/kg	96.2	70.0	130	----
	RM	lithium	7439-93-2	E440	9.5 mg/kg	86.5	70.0	130	----
	RM	magnesium	7439-95-4	E440	5509 mg/kg	98.5	70.0	130	----
	RM	manganese	7439-96-5	E440	269 mg/kg	93.1	70.0	130	----
	RM	molybdenum	7439-98-7	E440	1.03 mg/kg	111	70.0	130	----
	RM	nickel	7440-02-0	E440	26.7 mg/kg	101	70.0	130	----
	RM	phosphorus	7723-14-0	E440	752 mg/kg	96.9	70.0	130	----
	RM	potassium	7440-09-7	E440	1587 mg/kg	105	70.0	130	----
	RM	silver	7440-22-4	E440	4.06 mg/kg	88.3	70.0	130	----
	RM	sodium	7440-23-5	E440	797 mg/kg	107	70.0	130	----
	RM	strontium	7440-24-6	E440	86.1 mg/kg	98.6	70.0	130	----
	RM	thallium	7440-28-0	E440	0.0786 mg/kg	93.6	40.0	160	----
	RM	tin	7440-31-5	E440	10.6 mg/kg	97.9	70.0	130	----
	RM	titanium	7440-32-6	E440	839 mg/kg	83.1	70.0	130	----
	RM	uranium	7440-61-1	E440	0.52 mg/kg	92.5	70.0	130	----

Sub-Matrix:

					Reference Material (RM) Report				
					RM Target	Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Concentration	RM	Low	High	Qualifier
Metals (QCLot: 730670) - continued									
	RM	vanadium	7440-62-2	E440	32.7 mg/kg	91.3	70.0	130	----
	RM	zinc	7440-66-6	E440	297 mg/kg	96.2	70.0	130	----
	RM	zirconium	7440-67-7	E440	5.73 mg/kg	102	70.0	130	----
Leachable Anions & Nutrients (QCLot: 730587)									
	RM	Kjeldahl nitrogen, total [TKN]	----	E319	1040 mg/kg	88.5	80.0	120	----
Leachable Anions & Nutrients (QCLot: 733593)									
	RM	Kjeldahl nitrogen, total [TKN]	----	E319	1040 mg/kg	92.9	80.0	120	----

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

COC Number: 22 -

Waterloo
Work Order Reference
WT2219985

Telephone : +1 519 886 6910

Report To	Contact and company name below will appear on the final report
Company:	WSP E&I Canada Ltd
Contact:	Dale Klodnicki
Phone:	647-993-4243
	Company address below will appear on the final report
Street:	2020 Winston Park Drive, Suite 600
City/Province:	Oakville, Ontario
Postal Code:	L6H 6X7
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	WSP E&I Canada Ltd
Contact:	Dale Klodnicki

Reports / Recipients	
Select Report Format:	☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Merge QC/QCI Reports with COA	☑ YES ☐ NO ☐ N/A
☐ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	Dale.Klodnicki@wsp.com
Email 2	Samantha.sherman@wsp.com
Email 3	

Invoice Recipients	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	apinvoice.canada@woodplc.com
Email 2	Dale.Klodnicki@wsp.com

Turnaround Time (TAT) Requested
☐ Routine [R] if received by 3pm M-F - no surcharges apply
☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge mini
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge min
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge min
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge min
☐ Same day [E2] if received by 10am M-S - 200% rush surchar

Additional fees may apply to rush requests on weekends, statutory holidays and non-routine tests.

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:	Q86725 WT2022WOOD1000015	AFE/Cost Center:	PO#
Job #:	OMEMA2002	Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (ALS use only):	WT2219985	ALS Contact: RICK HAWTHORNE	Sampler: SS/AS/DL/MG

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Particle size analysis (see notes)	pH	TOC	TKN	TP	% moisture	total metals	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	WBR-P-04-01	24-Oct-22	9:45	Sediment	3	R	R	R	R	R	R	R			
	WBR-P-04-02	24-Oct-22	10:15	Sediment	3	R	R	R	R	R	R	R			
	WBR-P-04-03	24-Oct-22	10:45	Sediment	3	R	R	R	R	R	R	R			
	NDR-S-02-01	17-Oct-22	14:00	Sediment	3	R	R	R	R	R	R	R			
	NDR-S-02-02	17-Oct-22	14:30	Sediment	3	R	R	R	R	R	R	R			
	NDR-S-02-03	17-Oct-22	15:00	Sediment	3	R	R	R	R	R	R	R			
	NDR-Trib-01-01	18-Oct-22	11:00	Sediment	3	R	R	R	R	R	R	R			
	NDR-Trib-01-02	18-Oct-22	11:30	Sediment	3	R	R	R	R	R	R	R			
	NDR-Trib-01-03	18-Oct-22	12:00	Sediment	3	R	R	R	R	R	R	R			
	NDR-MarLk-01	19-Oct-22	16:00	Sediment	3	R	R	R	R	R	R	R			
	NDR-MarLk-02	19-Oct-22	16:30	Sediment	3	R	R	R	R	R	R	R			
	NDR-MarLk-03	19-Oct-22	17:00	Sediment	3	R	R	R	R	R	R	R			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

Partilce size analysis as per Wentworth 1922; seive and hydrometer.

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☑ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
			6.2	6.8	8.1	7.4	5.9

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)		
Released by: Dustin LePage	Date: 17-Oct	Time: 10:00	Received by:	Date:	Time:	Received by:	Date: 10/28/22	Time: 1000

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

FEB 2022 FRONT

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

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

Chain of Custody (COC) / Analytical Request Form

COC Number: 22 -

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Report To	Contact and company name below will appear on the final report
Company:	WSP E&I Canada Ltd
Contact:	Dale Klodnicki
Phone:	647-993-4243
	Company address below will appear on the final report
Street:	2020 Winston Park Drive, Suite 600
City/Province:	Oakville, Ontario
Postal Code:	L6H 6X7
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	WSP E&I Canada Ltd
Contact:	Dale Klodnicki

Reports / Recipients

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Merge QC/QCI Reports with COA ☑ YES ☐ NO ☐ N/A

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: Dale.Klodnicki@wsp.com

Email 2: Samantha.sherman@wsp.com

Email 3:

Invoice Recipients

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: apinvoice.canada@woodplc.com

Email 2: Dale.Klodnicki@wsp.com

Turnaround Time (TAT) Requested

☐ Routine [R] if received by 3pm M-F - no surcharges apply
☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.

AFFIX ALS BARCODE LABEL HERE (ALS use only)

Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests.

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:	Q86725 WT2022WOOD1000015	AFE/Cost Center:	PO#:
Job #:	OMEMA2002	Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (ALS use only):	WT221 19985	ALS Contact: RICK HAWTHORNE	Sampler: SS/AS/DL/MG

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Particle size analysis (see notes)	pH	TOC	TKN	TP	% moisture	total metals	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	NDR-JacLk-01	22-Oct-22	12:15	Sediment	3	R	R	R	R	R	R	R			
	NDR-JacLk-02	22-Oct-22	12:45	Sediment	3	R	R	R	R	R	R	R			
	NDR-JacLk-03	22-Oct-22	13:15	Sediment	3	R	R	R	R	R	R	R			
	NDR-SutLk-01	21-Oct-22	11:00	Sediment	3	R	R	R	R	R	R	R			
	NDR-SutLk-02	21-Oct-22	11:30	Sediment	3	R	R	R	R	R	R	R			
	NDR-SutLk-03	21-Oct-22	12:00	Sediment	3	R	R	R	R	R	R	R			
	WBR-P-03-01	24-Oct-22	13:30	Sediment	3	R	R	R	R	R	R	R			
	WBR-P-03-02	24-Oct-22	14:00	Sediment	3	R	R	R	R	R	R	R			
	WBR-P-03-03	24-Oct-22	14:00	Sediment	3	R	R	R	R	R	R	R			
	NDR-S-01-01	23-Oct-22	9:45	Sediment	3	R	R	R	R	R	R	R			
	NDR-S-01-02	23-Oct-22	10:30	Sediment	3	R	R	R	R	R	R	R			
	NDR-S-01-03	23-Oct-22	11:15	Sediment	3	R	R	R	R	R	R	R			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

Partilce size analysis as per Wentworth 1922; seive and hydrometer.

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☑ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C			
			6.2	6.8	8.1	7.4	5.9

SHIPMENT RELEASE (client use)

Released by:	Dustin LePage	Date:	17-Oct	Time:	10:00

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:
	10/28/22	1000

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

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

Chain of Custody (COC) / Analytical Request Form

COC Number: 22 -

ALS www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Report To	Contact and company name below will appear on the final report
Company:	WSP E&I Canada Ltd
Contact:	Dale Klodnicki
Phone:	647-993-4243
	Company address below will appear on the final report
Street:	2020 Winston Park Drive, Suite 600
City/Province:	Oakville, Ontario
Postal Code:	L6H 6X7
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	WSP E&I Canada Ltd
Contact:	Dale Klodnicki

Reports / Recipients

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Merge QC/QCI Reports with COA ☑ YES ☐ NO ☐ N/A
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: Dale.Klodnicki@wsp.com
Email 2: Samantha.sherman@wsp.com
Email 3:

Invoice Recipients

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: apinvoice.canada@woodplc.com
Email 2: Dale.Klodnicki@wsp.com

Turnaround Time (TAT) Requested

☐ Routine [R] if received by 3pm M-F - no surcharges apply
☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.

Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests.

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

AFFIX ALS BARCODE LABEL HERE (ALS use only)

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:	Q86725 WT2022WOOD1000015	AFE/Cost Center:	PO#
Job #:	OMEMA2002	Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	

ALS Lab Work Order # (ALS use only): WT2219985 | ALS Contact: RICK HAWTHORNE | Sampler: SS/AS/DL/MG

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Particle size analysis (see notes)	pH	TOC	TKN	TP	% moisture	total metals	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	CNC-Dup-01	19-Oct-22	no time	Sediment	3	R	R	R	R	R	R	R			
	CNC-Dup-02	23-Oct-22	no time	Sediment	3	R	R	R	R	R	R	R			
	NDR-GerLk-01	19-Oct-22	12:30	Sediment	3	R	R	R	R	R	R	R			
	NDR-GerLk-02	19-Oct-22	13:00	Sediment	3	R	R	R	R	R	R	R			
	NDR-GerLk-03	19-Oct-22	13:30	Sediment	3	R	R	R	R	R	R	R			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

Partilce size analysis as per Wentworth 1922; seive and hydrometer.

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☑ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
			6.2	6.8	8.1	7.4	5.9

SHIPMENT RELEASE (client use)

Released by:	Dustin LePage	Date:	17-Oct	Time:	10:00

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:
	10/28/22	1000

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

PEO 2022 FRONT

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

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

CERTIFICATE OF ANALYSIS

Work Order	: **WT2315817**	Page	: 1 of 6
Client	: **WSP E&I Canada Limited**	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 6925 Century Avenue Suite #100 Mississauga ON Canada L5N 7K2	Address	: 60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2304S.2000.2020.1142.573000	Date Samples Received	: 06-Jun-2023 09:30
PO	: OMEMA2304S.2000.2020.1142.573000	Date Analysis Commenced	: 06-Jun-2023
C-O-C number	: ----	Issue Date	: 13-Jun-2023 16:17
Sampler	: CLIENT		
Site	: ----		
Quote number	: OMEMA2304S.2000.2020.1142.573000		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Jon Fisher	Production Manager, Environmental	Inorganics, Waterloo, Ontario
Wayne Smith	Client Services Specialist	Inorganics, Waterloo, Ontario
Wayne Smith	Client Services Specialist	Metals, Waterloo, Ontario

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances

LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	no units
µS/cm	microsiemens per centimetre
mg/L	milligrams per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

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

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	*Description*
DLDS	*Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.*

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WBR-S-04	NDR-S-04	NDR-S-06B	----	----
					Client sampling date / time	04-Jun-2023 14:10	01-Jun-2023 14:00	31-May-2023 14:00	----	----
						WT2315817-001	WT2315817-002	WT2315817-003	--------	--------
						Result	Result	Result	----	----
Physical Tests										
Acidity (as CaCO3)	----	E283/WT	2.0	mg/L		<2.0	5.4	6.6	----	----
Alkalinity, total (as CaCO3)	----	E290/WT	1.0	mg/L		39.8	58.5	4.8	----	----
Conductivity	----	E100/WT	1.0	µS/cm		59.3	87.8	22.9	----	----
Hardness (as CaCO3), dissolved	----	EC100/WT	0.50	mg/L		40.6	46.6	15.8	----	----
pH	----	E108/WT	0.10	pH units		7.32	7.32	5.95	----	----
Solids, total dissolved [TDS]	----	E162/WT	10	mg/L		73 DLDS	79 DLDS	78 DLDS	----	----
Solids, total suspended [TSS]	----	E160/WT	3.0	mg/L		4.1	41.7	<3.0	----	----
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L		0.0205	0.0253	0.0129	----	----
Bromide	24959-67-9	E235.Br/WT	0.10	mg/L		<0.10	<0.10	<0.10	----	----
Chloride	16887-00-6	E235.Cl/WT	0.50	mg/L		<0.50	3.51	<0.50	----	----
Fluoride	16984-48-8	E235.F/WT	0.020	mg/L		0.026	0.027	<0.020	----	----
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L		0.026	<0.020	<0.020	----	----
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L		<0.010	<0.010	<0.010	----	----
Phosphorus, total	7723-14-0	E372-U/WT	0.0020	mg/L		0.0231	0.0223	0.0027	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	0.30	mg/L		0.31	<0.30	<0.30	----	----
Cyanides										
Cyanide, free	----	E339/WT	0.0020	mg/L		<0.0020	<0.0020	<0.0020	----	----
Cyanide, strong acid dissociable (Total)	----	E333/WT	0.0020	mg/L		<0.0020	<0.0020	<0.0020	----	----
Cyanide, weak acid dissociable	----	E336/WT	0.0020	mg/L		<0.0020	<0.0020	<0.0020	----	----
Total Metals										
Aluminum, total	7429-90-5	E420/WT	0.0030	mg/L		0.789	0.825	0.0641	----	----
Antimony, total	7440-36-0	E420/WT	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
Arsenic, total	7440-38-2	E420/WT	0.00010	mg/L		0.00121	0.00096	0.00078	----	----
Barium, total	7440-39-3	E420/WT	0.00010	mg/L		0.0103	0.0116	0.00232	----	----
Beryllium, total	7440-41-7	E420/WT	0.000020	mg/L		0.000035	0.000036	<0.000020	----	----
Bismuth, total	7440-69-9	E420/WT	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
Boron, total	7440-42-8	E420/WT	0.010	mg/L		<0.010	<0.010	<0.010	----	----
Cadmium, total	7440-43-9	E420/WT	0.0000050	mg/L		0.0000344	0.0000341	0.0000276	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WBR-S-04	NDR-S-04	NDR-S-06B	----	----
					Client sampling date / time	04-Jun-2023 14:10	01-Jun-2023 14:00	31-May-2023 14:00	----	----
						WT2315817-001	WT2315817-002	WT2315817-003	--------	--------
						Result	Result	Result	----	----
Total Metals										
Calcium, total	7440-70-2	E420/WT	0.050	mg/L		11.7	13.4	3.96	----	----
Cesium, total	7440-46-2	E420/WT	0.000010	mg/L		0.000071	0.000081	0.000010	----	----
Chromium, total	7440-47-3	E420/WT	0.00050	mg/L		0.00181	0.00200	<0.00050	----	----
Cobalt, total	7440-48-4	E420/WT	0.00010	mg/L		0.00047	0.00061	<0.00010	----	----
Copper, total	7440-50-8	E420/WT	0.00050	mg/L		0.00219	0.00187	0.00054	----	----
Iron, total	7439-89-6	E420/WT	0.010	mg/L		1.07	1.12	0.207	----	----
Lead, total	7439-92-1	E420/WT	0.000050	mg/L		0.000582	0.000646	0.000492	----	----
Lithium, total	7439-93-2	E420/WT	0.0010	mg/L		0.0010	0.0012	<0.0010	----	----
Magnesium, total	7439-95-4	E420/WT	0.0050	mg/L		3.09	4.11	1.44	----	----
Manganese, total	7439-96-5	E420/WT	0.00010	mg/L		0.0704	0.147	0.0262	----	----
Mercury, total	7439-97-6	E508/WT	0.0000050	mg/L		<0.0000050	0.0000069	<0.0000050	----	----
Molybdenum, total	7439-98-7	E420/WT	0.000050	mg/L		0.000078	0.000089	<0.000050	----	----
Nickel, total	7440-02-0	E420/WT	0.00050	mg/L		0.00145	0.00142	<0.00050	----	----
Phosphorus, total	7723-14-0	E420/WT	0.050	mg/L		<0.050	<0.050	<0.050	----	----
Potassium, total	7440-09-7	E420/WT	0.050	mg/L		0.433	0.426	0.087	----	----
Rubidium, total	7440-17-7	E420/WT	0.00020	mg/L		0.00197	0.00194	0.00033	----	----
Selenium, total	7782-49-2	E420/WT	0.000050	mg/L		0.000130	0.000133	0.000107	----	----
Silicon, total	7440-21-3	E420/WT	0.10	mg/L		2.08	1.69	0.53	----	----
Silver, total	7440-22-4	E420/WT	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
Sodium, total	7440-23-5	E420/WT	0.050	mg/L		1.06	3.28	0.527	----	----
Strontium, total	7440-24-6	E420/WT	0.00020	mg/L		0.0240	0.0250	0.00739	----	----
Sulfur, total	7704-34-9	E420/WT	0.50	mg/L		<0.50	<0.50	<0.50	----	----
Tellurium, total	13494-80-9	E420/WT	0.00020	mg/L		<0.00020	<0.00020	<0.00020	----	----
Thallium, total	7440-28-0	E420/WT	0.000010	mg/L		0.000011	0.000013	<0.000010	----	----
Thorium, total	7440-29-1	E420/WT	0.00010	mg/L		0.00016	0.00012	<0.00010	----	----
Tin, total	7440-31-5	E420/WT	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
Titanium, total	7440-32-6	E420/WT	0.00030	mg/L		0.0314	0.0340	0.00105	----	----
Tungsten, total	7440-33-7	E420/WT	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
Uranium, total	7440-61-1	E420/WT	0.000010	mg/L		0.000079	0.000081	<0.000010	----	----
Vanadium, total	7440-62-2	E420/WT	0.00050	mg/L		0.00199	0.00204	<0.00050	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WBR-S-04	NDR-S-04	NDR-S-06B	----	----
					Client sampling date / time	04-Jun-2023 14:10	01-Jun-2023 14:00	31-May-2023 14:00	----	----
						WT2315817-001	WT2315817-002	WT2315817-003	--------	--------
						Result	Result	Result	----	----
Total Metals										
Zinc, total	7440-66-6	E420/WT	0.0030	mg/L		0.0061	0.0084	0.0059	----	----
Zirconium, total	7440-67-7	E420/WT	0.00020	mg/L		0.00081	0.00059	<0.00020	----	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/WT	0.0010	mg/L		0.245	0.135	0.0618	----	----
Antimony, dissolved	7440-36-0	E421/WT	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
Arsenic, dissolved	7440-38-2	E421/WT	0.00010	mg/L		0.00119	0.00085	0.00085	----	----
Barium, dissolved	7440-39-3	E421/WT	0.00010	mg/L		0.00665	0.00639	0.00236	----	----
Beryllium, dissolved	7440-41-7	E421/WT	0.000020	mg/L		0.000022	<0.000020	<0.000020	----	----
Bismuth, dissolved	7440-69-9	E421/WT	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
Boron, dissolved	7440-42-8	E421/WT	0.010	mg/L		<0.010	<0.010	<0.010	----	----
Cadmium, dissolved	7440-43-9	E421/WT	0.0000050	mg/L		0.0000309	0.0000152	0.0000269	----	----
Calcium, dissolved	7440-70-2	E421/WT	0.050	mg/L		11.6	13.1	4.01	----	----
Cesium, dissolved	7440-46-2	E421/WT	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
Chromium, dissolved	7440-47-3	E421/WT	0.00050	mg/L		0.00081	<0.00050	<0.00050	----	----
Cobalt, dissolved	7440-48-4	E421/WT	0.00010	mg/L		0.00018	0.00014	<0.00010	----	----
Copper, dissolved	7440-50-8	E421/WT	0.00020	mg/L		0.00216	0.00104	0.00053	----	----
Iron, dissolved	7439-89-6	E421/WT	0.010	mg/L		0.505	0.308	0.193	----	----
Lead, dissolved	7439-92-1	E421/WT	0.000050	mg/L		0.000516	0.000138	0.000483	----	----
Lithium, dissolved	7439-93-2	E421/WT	0.0010	mg/L		<0.0010	<0.0010	<0.0010	----	----
Magnesium, dissolved	7439-95-4	E421/WT	0.0050	mg/L		2.83	3.37	1.41	----	----
Manganese, dissolved	7439-96-5	E421/WT	0.00010	mg/L		0.0605	0.0867	0.0251	----	----
Molybdenum, dissolved	7439-98-7	E421/WT	0.000050	mg/L		0.000074	0.000075	<0.000050	----	----
Nickel, dissolved	7440-02-0	E421/WT	0.00050	mg/L		0.00090	0.00057	<0.00050	----	----
Phosphorus, dissolved	7723-14-0	E421/WT	0.050	mg/L		<0.050	<0.050	<0.050	----	----
Potassium, dissolved	7440-09-7	E421/WT	0.050	mg/L		0.288	0.260	0.092	----	----
Rubidium, dissolved	7440-17-7	E421/WT	0.00020	mg/L		0.00099	0.00078	0.00034	----	----
Selenium, dissolved	7782-49-2	E421/WT	0.000050	mg/L		0.000180	0.000148	0.000153	----	----
Silicon, dissolved	7440-21-3	E421/WT	0.050	mg/L		1.05	0.431	0.516	----	----
Silver, dissolved	7440-22-4	E421/WT	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
Sodium, dissolved	7440-23-5	E421/WT	0.050	mg/L		0.996	3.12	0.523	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WBR-S-04	NDR-S-04	NDR-S-06B	----	----
					Client sampling date / time	04-Jun-2023 14:10	01-Jun-2023 14:00	31-May-2023 14:00	----	----
						WT2315817-001	WT2315817-002	WT2315817-003	--------	--------
						Result	Result	Result	----	----
Dissolved Metals										
Strontium, dissolved	7440-24-6	E421/WT	0.00020	mg/L		0.0233	0.0230	0.00755	----	----
Sulfur, dissolved	7704-34-9	E421/WT	0.50	mg/L		<0.50	<0.50	<0.50	----	----
Tellurium, dissolved	13494-80-9	E421/WT	0.00020	mg/L		<0.00020	<0.00020	<0.00020	----	----
Thallium, dissolved	7440-28-0	E421/WT	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
Thorium, dissolved	7440-29-1	E421/WT	0.00010	mg/L		0.00013	<0.00010	<0.00010	----	----
Tin, dissolved	7440-31-5	E421/WT	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
Titanium, dissolved	7440-32-6	E421/WT	0.00030	mg/L		0.00918	0.00450	0.00072	----	----
Tungsten, dissolved	7440-33-7	E421/WT	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
Uranium, dissolved	7440-61-1	E421/WT	0.000010	mg/L		0.000064	0.000047	<0.000010	----	----
Vanadium, dissolved	7440-62-2	E421/WT	0.00050	mg/L		0.00103	0.00070	<0.00050	----	----
Zinc, dissolved	7440-66-6	E421/WT	0.0010	mg/L		0.0039	0.0038	0.0088	----	----
Zirconium, dissolved	7440-67-7	E421/WT	0.00030	mg/L		0.00073	0.00041	<0.00030	----	----
Dissolved metals filtration location	----	EP421/WT	-	-		Field	Field	Field	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

ALS Canada Ltd.

right solutions.
right partner.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2315817**	Page	: 1 of 16
Client	: **WSP E&I Canada Limited**	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 6925 Century Avenue Suite #100 Mississauga ON Canada L5N 7K2	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2304S.2000.2020.1142.573000	Date Samples Received	: 06-Jun-2023 09:30
PO	: OMEMA2304S.2000.2020.1142.573000	Issue Date	: 13-Jun-2023 16:17
C-O-C number	: ----		
Sampler	: CLIENT		
Site	: ----		
Quote number	: OMEMA2304S.2000.2020.1142.573000		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Matrix Spike outliers occur.
- Duplicate outliers occur - please see following pages for full details.
- Laboratory Control Sample (LCS) outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Duplicate (DUP) RPDs								
Total Metals	Anonymous	Anonymous	Silver, total	7440-22-4	E420	25.4 % DUP-H	20%	Duplicate RPD does not meet the DQO for this test.

Result Qualifiers

Qualifier	Description
DUP-H	*Duplicate results outside ALS DQO, due to sample heterogeneity.*

Laboratory Control Sample (LCS) Recoveries								
Total Metals	QC-975559-002	----	Magnesium, total	7439-95-4	E420	121 % MES	80.0-120%	Recovery greater than upper control limit

Result Qualifiers

Qualifier	Description
MES	*Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).*

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] WBR-S-04	E298	04-Jun-2023	08-Jun-2023	----	----		08-Jun-2023	28 days	4 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] NDR-S-04	E298	01-Jun-2023	08-Jun-2023	----	----		08-Jun-2023	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] NDR-S-06B	E298	31-May-2023	08-Jun-2023	----	----		08-Jun-2023	28 days	8 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] WBR-S-04	E235.Br	04-Jun-2023	07-Jun-2023	----	----		07-Jun-2023	28 days	3 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] NDR-S-04	E235.Br	01-Jun-2023	07-Jun-2023	----	----		07-Jun-2023	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] NDR-S-06B	E235.Br	31-May-2023	07-Jun-2023	----	----		07-Jun-2023	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] WBR-S-04	E235.Cl	04-Jun-2023	07-Jun-2023	----	----		07-Jun-2023	28 days	3 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
NDR-S-04	E235.Cl	01-Jun-2023	07-Jun-2023	----	----		07-Jun-2023	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
NDR-S-06B	E235.Cl	31-May-2023	07-Jun-2023	----	----		07-Jun-2023	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
WBR-S-04	E235.F	04-Jun-2023	07-Jun-2023	----	----		07-Jun-2023	28 days	3 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
NDR-S-04	E235.F	01-Jun-2023	07-Jun-2023	----	----		07-Jun-2023	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
NDR-S-06B	E235.F	31-May-2023	07-Jun-2023	----	----		07-Jun-2023	28 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
WBR-S-04	E235.NO3	04-Jun-2023	07-Jun-2023	----	----		07-Jun-2023	7 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
NDR-S-04	E235.NO3	01-Jun-2023	07-Jun-2023	----	----		07-Jun-2023	7 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
NDR-S-06B	E235.NO3	31-May-2023	07-Jun-2023	----	----		07-Jun-2023	7 days	7 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
WBR-S-04	E235.NO2	04-Jun-2023	07-Jun-2023	----	----		07-Jun-2023	7 days	3 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
NDR-S-04	E235.NO2	01-Jun-2023	07-Jun-2023	----	----		07-Jun-2023	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
NDR-S-06B	E235.NO2	31-May-2023	07-Jun-2023	----	----		07-Jun-2023	7 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
WBR-S-04	E235.SO4	04-Jun-2023	07-Jun-2023	----	----		07-Jun-2023	28 days	3 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
NDR-S-04	E235.SO4	01-Jun-2023	07-Jun-2023	----	----		07-Jun-2023	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
NDR-S-06B	E235.SO4	31-May-2023	07-Jun-2023	----	----		07-Jun-2023	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
WBR-S-04	E372-U	04-Jun-2023	08-Jun-2023	----	----		09-Jun-2023	28 days	5 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
NDR-S-04	E372-U	01-Jun-2023	08-Jun-2023	----	----		09-Jun-2023	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
NDR-S-06B	E372-U	31-May-2023	08-Jun-2023	----	----		09-Jun-2023	28 days	9 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
NDR-S-04	E339	01-Jun-2023	12-Jun-2023	----	----		12-Jun-2023	14 days	11 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide) NDR-S-06B	E339	31-May-2023	12-Jun-2023	----	----		12-Jun-2023	14 days	12 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide) WBR-S-04	E339	04-Jun-2023	12-Jun-2023	----	----		12-Jun-2023	14 days	8 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide) NDR-S-04	E333	01-Jun-2023	12-Jun-2023	----	----		12-Jun-2023	14 days	11 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide) NDR-S-06B	E333	31-May-2023	12-Jun-2023	----	----		12-Jun-2023	14 days	12 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide) WBR-S-04	E333	04-Jun-2023	12-Jun-2023	----	----		12-Jun-2023	14 days	8 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) NDR-S-04	E336	01-Jun-2023	12-Jun-2023	----	----		12-Jun-2023	14 days	11 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) NDR-S-06B	E336	31-May-2023	12-Jun-2023	----	----		12-Jun-2023	14 days	12 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) WBR-S-04	E336	04-Jun-2023	12-Jun-2023	----	----		12-Jun-2023	14 days	8 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) WBR-S-04	E421	04-Jun-2023	07-Jun-2023	----	----		07-Jun-2023	180 days	3 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDR-S-04	E421	01-Jun-2023	07-Jun-2023	----	----		07-Jun-2023	180 days	6 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDR-S-06B	E421	31-May-2023	07-Jun-2023	----	----		07-Jun-2023	180 days	7 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] WBR-S-04	E283	04-Jun-2023	07-Jun-2023	----	----		09-Jun-2023	14 days	5 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-S-04	E283	01-Jun-2023	07-Jun-2023	----	----		09-Jun-2023	14 days	8 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-S-06B	E283	31-May-2023	07-Jun-2023	----	----		09-Jun-2023	14 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] WBR-S-04	E290	04-Jun-2023	07-Jun-2023	----	----		07-Jun-2023	14 days	3 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-S-04	E290	01-Jun-2023	07-Jun-2023	----	----		07-Jun-2023	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-S-06B	E290	31-May-2023	07-Jun-2023	----	----		07-Jun-2023	14 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] WBR-S-04	E100	04-Jun-2023	07-Jun-2023	----	----		07-Jun-2023	28 days	3 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-S-04	E100	01-Jun-2023	07-Jun-2023	----	----		07-Jun-2023	28 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-S-06B	E100	31-May-2023	07-Jun-2023	----	----		07-Jun-2023	28 days	7 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] WBR-S-04	E108	04-Jun-2023	07-Jun-2023	----	----		07-Jun-2023	14 days	3 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-S-04	E108	01-Jun-2023	07-Jun-2023	----	----		07-Jun-2023	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-S-06B	E108	31-May-2023	07-Jun-2023	----	----		07-Jun-2023	14 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] WBR-S-04	E162	04-Jun-2023	----	----	----		07-Jun-2023	7 days	3 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-S-04	E162	01-Jun-2023	----	----	----		07-Jun-2023	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-S-06B	E162	31-May-2023	----	----	----		07-Jun-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] WBR-S-04	E160	04-Jun-2023	----	----	----		07-Jun-2023	7 days	3 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-S-04	E160	01-Jun-2023	----	----	----		07-Jun-2023	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-S-06B	E160	31-May-2023	----	----	----		06-Jun-2023	7 days	6 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] WBR-S-04	E508	04-Jun-2023	07-Jun-2023	----	----		07-Jun-2023	28 days	3 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] NDR-S-04	E508	01-Jun-2023	07-Jun-2023	----	----		07-Jun-2023	28 days	6 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] NDR-S-06B	E508	31-May-2023	07-Jun-2023	----	----		07-Jun-2023	28 days	7 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) WBR-S-04	E420	04-Jun-2023	06-Jun-2023	----	----		07-Jun-2023	180 days	2 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDR-S-04	E420	01-Jun-2023	06-Jun-2023	----	----		07-Jun-2023	180 days	5 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) NDR-S-06B	E420	31-May-2023	06-Jun-2023	----	----		07-Jun-2023	180 days	6 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	976957	1	17	5.8	5.0	✓
Alkalinity Species by Titration	E290	975701	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	978086	1	19	5.2	5.0	✓
Bromide in Water by IC	E235.Br	975702	1	18	5.5	5.0	✓
Chloride in Water by IC	E235.Cl	975707	1	20	5.0	5.0	✓
Conductivity in Water	E100	975700	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	975996	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	975703	1	18	5.5	5.0	✓
Free Cyanide	E339	983905	1	3	33.3	5.0	✓
Nitrate in Water by IC	E235.NO3	975704	1	20	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2	975705	1	20	5.0	5.0	✓
pH by Meter	E108	975699	1	18	5.5	5.0	✓
Sulfate in Water by IC	E235.SO4	975706	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	976400	2	36	5.5	5.0	✓
Total Cyanide	E333	983904	1	8	12.5	5.0	✓
Total Mercury in Water by CVAAS	E508	975737	1	13	7.6	5.0	✓
Total metals in Water by CRC ICPMS	E420	975559	1	19	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	978085	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	975249	2	36	5.5	4.7	✓
WAD Cyanide	E336	983903	1	14	7.1	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	976957	1	17	5.8	5.0	✓
Alkalinity Species by Titration	E290	975701	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	978086	1	19	5.2	5.0	✓
Bromide in Water by IC	E235.Br	975702	1	18	5.5	5.0	✓
Chloride in Water by IC	E235.Cl	975707	1	20	5.0	5.0	✓
Conductivity in Water	E100	975700	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	975996	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	975703	1	18	5.5	5.0	✓
Free Cyanide	E339	983905	1	3	33.3	5.0	✓
Nitrate in Water by IC	E235.NO3	975704	1	20	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2	975705	1	20	5.0	5.0	✓
pH by Meter	E108	975699	1	18	5.5	5.0	✓
Sulfate in Water by IC	E235.SO4	975706	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	976400	2	36	5.5	5.0	✓
Total Cyanide	E333	983904	1	8	12.5	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Total Mercury in Water by CVAAS	E508	975737	1	13	7.6	5.0	✓
Total metals in Water by CRC ICPMS	E420	975559	1	19	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	978085	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	975249	2	36	5.5	4.7	✓
WAD Cyanide	E336	983903	1	14	7.1	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	976957	1	17	5.8	5.0	✓
Alkalinity Species by Titration	E290	975701	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	978086	1	19	5.2	5.0	✓
Bromide in Water by IC	E235.Br	975702	1	18	5.5	5.0	✓
Chloride in Water by IC	E235.Cl	975707	1	20	5.0	5.0	✓
Conductivity in Water	E100	975700	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	975996	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	975703	1	18	5.5	5.0	✓
Free Cyanide	E339	983905	1	3	33.3	5.0	✓
Nitrate in Water by IC	E235.NO3	975704	1	20	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2	975705	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	975706	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	976400	2	36	5.5	5.0	✓
Total Cyanide	E333	983904	1	8	12.5	5.0	✓
Total Mercury in Water by CVAAS	E508	975737	1	13	7.6	5.0	✓
Total metals in Water by CRC ICPMS	E420	975559	1	19	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	978085	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	975249	2	36	5.5	4.7	✓
WAD Cyanide	E336	983903	1	14	7.1	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	978086	1	19	5.2	5.0	✓
Bromide in Water by IC	E235.Br	975702	1	18	5.5	5.0	✓
Chloride in Water by IC	E235.Cl	975707	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	975996	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	975703	1	18	5.5	5.0	✓
Free Cyanide	E339	983905	1	3	33.3	5.0	✓
Nitrate in Water by IC	E235.NO3	975704	1	20	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2	975705	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	975706	1	20	5.0	5.0	✓
Total Cyanide	E333	983904	1	8	12.5	5.0	✓
Total Mercury in Water by CVAAS	E508	975737	1	13	7.6	5.0	✓
Total metals in Water by CRC ICPMS	E420	975559	1	19	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	978085	1	20	5.0	5.0	✓

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
WAD Cyanide	E336	983903	1	14	7.1	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Waterloo - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Waterloo - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry	E160 Waterloo - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Waterloo - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC	E235.Br Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC	E235.NO2 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC	E235.NO3 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Sulfate in Water by IC	E235.SO4 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Waterloo - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3
Alkalinity Species by Titration	E290 Waterloo - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Waterloo - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Cyanide	E333 Waterloo - Environmental	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336 Waterloo - Environmental	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339 Waterloo - Environmental	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Waterloo - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total metals in Water by CRC ICPMS	E420 Waterloo - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 Waterloo - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Mercury in Water by CVAAS	E508 Waterloo - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Hardness (Calculated)	EC100 Waterloo - Environmental	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Waterloo - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for Total Phosphorus in water	EP372 Waterloo - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Waterloo - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.

QUALITY CONTROL REPORT

Work Order	: **WT2315817**	Page	: 1 of 18
Client	: WSP E&I Canada Limited	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 6925 Century Avenue Suite #100 Mississauga ON Canada L5N 7K2	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	:	Telephone	: +1 519 886 6910
Project	: OMEMA2304S.2000.2020.1142.573000	Date Samples Received	: 06-Jun-2023 09:30
PO	: OMEMA2304S.2000.2020.1142.573000	Date Analysis Commenced	: 06-Jun-2023
C-O-C number	: ----	Issue Date	: 13-Jun-2023 16:40
Sampler	: CLIENT 905 568 2929, Ext. 4140		
Site	: ----		
Quote number	: OMEMA2304S.2000.2020.1142.573000		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Jon Fisher	Production Manager, Environmental	Waterloo Inorganics, Waterloo, Ontario
Wayne Smith	Client Services Specialist	Waterloo Inorganics, Waterloo, Ontario
Wayne Smith	Client Services Specialist	Waterloo Metals, Waterloo, Ontario

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 975249)											
HA2300243-005	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	4.0	3.8	0.2	Diff <2x LOR	----
Physical Tests (QC Lot: 975699)											
WT2315735-001	Anonymous	pH	----	E108	0.10	pH units	6.80	6.81	0.147%	4%	----
Physical Tests (QC Lot: 975700)											
WT2315735-001	Anonymous	Conductivity	----	E100	2.0	µS/cm	56.3	55.9	0.713%	10%	----
Physical Tests (QC Lot: 975701)											
WT2315735-001	Anonymous	Alkalinity, total (as CaCO3)	----	E290	2.0	mg/L	9.2	9.5	0.3	Diff <2x LOR	----
Physical Tests (QC Lot: 976400)											
WT2315709-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	577	579	0.346%	20%	----
Physical Tests (QC Lot: 976410)											
WT2315709-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	7.3	7.7	0.4	Diff <2x LOR	----
Physical Tests (QC Lot: 976951)											
WT2315481-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	568	578	1.66%	20%	----
Physical Tests (QC Lot: 976957)											
WP2310587-001	Anonymous	Acidity (as CaCO3)	----	E283	2.0	mg/L	54.0	53.4	1.27%	20%	----
Anions and Nutrients (QC Lot: 975702)											
WT2315735-001	Anonymous	Bromide	24959-67-9	E235.Br	0.10	mg/L	<0.10	<0.10	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 975703)											
WT2315735-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.040	0.038	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 975704)											
WT2315735-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	0.028	0.027	0.0010	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 975705)											
WT2315735-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 975706)											
WT2315735-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	3.16	3.08	2.51%	20%	----
Anions and Nutrients (QC Lot: 975707)											
WT2315735-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	7.80	7.74	0.762%	20%	----
Anions and Nutrients (QC Lot: 978085)											
WT2315711-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.289	0.286	1.12%	20%	----
Anions and Nutrients (QC Lot: 978086)											

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Anions and Nutrients (QC Lot: 978086) - continued											
WT2315783-003	Anonymous	Ammonia, total (as N)	7664-41-7	E298	1.00	mg/L	33.3	32.9	1.47%	20%	----
Cyanides (QC Lot: 983903)											
WT2315817-001	WBR-S-04	Cyanide, weak acid dissociable	----	E336	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Cyanides (QC Lot: 983904)											
WT2315817-001	WBR-S-04	Cyanide, strong acid dissociable (Total)	----	E333	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Cyanides (QC Lot: 983905)											
WT2315817-001	WBR-S-04	Cyanide, free	----	E339	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Total Metals (QC Lot: 975559)											
TY2305000-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0451	0.0440	2.40%	20%	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00062	0.00062	0.000006	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.00574	0.00556	3.24%	20%	----
		Beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	0.000234	0.000224	0.000010	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000732	0.0000683	6.92%	20%	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	17.2	16.8	2.71%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Chromium, total	7440-47-3	E420	0.00050	mg/L	0.00057	0.00056	0.00001	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00050	mg/L	0.00844	0.00841	0.425%	20%	----
		Iron, total	7439-89-6	E420	0.010	mg/L	0.108	0.109	0.808%	20%	----
		Lead, total	7439-92-1	E420	0.000050	mg/L	0.000484	0.000484	0.0000002	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	3.20	3.38	5.62%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.0128	0.0130	1.51%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	0.00101	0.00101	0.000003	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	0.052	0.002	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.050	mg/L	0.496	0.502	0.007	Diff <2x LOR	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00061	0.00060	0.000004	Diff <2x LOR	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	0.000087	0.000091	0.000005	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	0.91	0.92	0.01	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 975559) - continued											
TY2305000-001	Anonymous	Silver, total	7440-22-4	E420	0.000010	mg/L	0.000087	0.000113	25.4%	20%	DUP-H
		Sodium, total	7440-23-5	E420	0.050	mg/L	0.994	0.998	0.446%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.0226	0.0227	0.361%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, total	7440-31-5	E420	0.00010	mg/L	0.00168	0.00150	11.4%	20%	----
		Titanium, total	7440-32-6	E420	0.00030	mg/L	0.00134	0.00141	0.00007	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	0.207	0.209	0.799%	20%	----
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 975737)											
WT2315668-001	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 975996)											
TY2304909-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0011	0.0010	0.00005	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00014	0.00015	0.00001	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.00961	0.00941	2.11%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000741	0.0000743	0.270%	20%	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	77.0	78.1	1.42%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00478	0.00475	0.634%	20%	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	0.011	0.011	0.00008	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	0.000255	0.000254	0.0000009	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	13.8	13.6	1.25%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 975996) - continued											
TY2304909-001	Anonymous	Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00054	0.00051	0.00003	Diff <2x LOR	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000144	0.000139	0.000005	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.560	0.552	1.30%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00205	0.00212	3.28%	20%	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000065	0.000057	0.000008	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.68	3.70	0.551%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	7.17	7.13	0.538%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.0591	0.0588	0.488%	20%	----
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	0.99	0.95	0.03	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000159	0.000156	2.03%	20%	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.224	0.223	0.713%	20%	----
		Zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----

Qualifiers

Qualifier	*Description*
DUP-H	*Duplicate results outside ALS DQO, due to sample heterogeneity.*

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 975249)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 975700)						
Conductivity	----	E100	1	µS/cm	1.1	----
Physical Tests (QCLot: 975701)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	1.8	----
Physical Tests (QCLot: 976400)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 976410)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 976951)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 976957)						
Acidity (as CaCO3)	----	E283	2	mg/L	<2.0	----
Anions and Nutrients (QCLot: 975702)						
Bromide	24959-67-9	E235.Br	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 975703)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 975704)						
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 975705)						
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 975706)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 975707)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 978085)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 978086)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Cyanides (QCLot: 983903)						
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 983904)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Cyanides (QCLot: 983904) - continued						
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 983905)						
Cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Total Metals (QCLot: 975559)						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
Boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
Copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
Iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
Lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
Lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
Sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 975559) - continued						
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----
Total Metals (QCLot: 975737)						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 975996)						
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 975996) - continued						
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 975249)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	89.7	85.0	115	----
Physical Tests (QCLot: 975699)									
pH	----	E108	----	pH units	7 pH units	99.7	98.0	102	----
Physical Tests (QCLot: 975700)									
Conductivity	----	E100	1	µS/cm	1409 µS/cm	98.9	90.0	110	----
Physical Tests (QCLot: 975701)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	150 mg/L	109	85.0	115	----
Physical Tests (QCLot: 976400)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	86.8	85.0	115	----
Physical Tests (QCLot: 976410)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	85.5	85.0	115	----
Physical Tests (QCLot: 976951)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	95.2	85.0	115	----
Physical Tests (QCLot: 976957)									
Acidity (as CaCO3)	----	E283	2	mg/L	250 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 975702)									
Bromide	24959-67-9	E235.Br	0.1	mg/L	0.5 mg/L	98.8	85.0	115	----
Anions and Nutrients (QCLot: 975703)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 975704)									
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	100.0	90.0	110	----
Anions and Nutrients (QCLot: 975705)									
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	100.0	90.0	110	----
Anions and Nutrients (QCLot: 975706)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 975707)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 978085)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.845 mg/L	99.0	80.0	120	----
Anions and Nutrients (QCLot: 978086)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	96.4	85.0	115	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report: Spike Concentration	Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High	Qualifier
Cyanides (QCLot: 983903)									
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	90.6	80.0	120	----
Cyanides (QCLot: 983904)									
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	0.25 mg/L	88.7	80.0	120	----
Cyanides (QCLot: 983905)									
Cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	91.6	80.0	120	----
Total Metals (QCLot: 975559)									
Aluminum, total	7429-90-5	E420	0.003	mg/L	0.1 mg/L	105	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	0.05 mg/L	105	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	0.05 mg/L	106	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.0125 mg/L	106	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.005 mg/L	108	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	0.05 mg/L	106	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	0.05 mg/L	108	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.005 mg/L	105	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	2.5 mg/L	108	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.0025 mg/L	106	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.0125 mg/L	108	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.0125 mg/L	108	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.0125 mg/L	107	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	0.05 mg/L	107	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.025 mg/L	108	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.0125 mg/L	107	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	2.5 mg/L	# 121	80.0	120	MES
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.0125 mg/L	106	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.0125 mg/L	106	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.025 mg/L	108	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	0.5 mg/L	105	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	2.5 mg/L	108	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.005 mg/L	108	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	0.05 mg/L	95.6	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	0.5 mg/L	110	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.005 mg/L	100	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	2.5 mg/L	112	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.0125 mg/L	108	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 975559) - continued									
Sulfur, total	7704-34-9	E420	0.5	mg/L	2.5 mg/L	112	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.005 mg/L	94.7	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	0.05 mg/L	105	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.005 mg/L	104	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.025 mg/L	107	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.0125 mg/L	106	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.005 mg/L	105	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.00025 mg/L	108	80.0	120	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.025 mg/L	109	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.025 mg/L	103	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.005 mg/L	104	80.0	120	----
Total Metals (QCLot: 975737)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	110	80.0	120	----
Dissolved Metals (QCLot: 975996)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	0.1 mg/L	106	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	0.05 mg/L	104	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	0.05 mg/L	112	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.0125 mg/L	108	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.005 mg/L	104	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	0.05 mg/L	103	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	0.05 mg/L	102	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.005 mg/L	105	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	2.5 mg/L	102	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.0025 mg/L	107	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.0125 mg/L	103	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.0125 mg/L	105	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.0125 mg/L	104	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	0.05 mg/L	105	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.025 mg/L	104	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.0125 mg/L	102	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	2.5 mg/L	112	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.0125 mg/L	107	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.0125 mg/L	105	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.025 mg/L	105	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	0.5 mg/L	115	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 975996) - continued									
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	2.5 mg/L	110	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.005 mg/L	110	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	0.05 mg/L	104	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	0.5 mg/L	109	60.0	140	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.005 mg/L	101	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	2.5 mg/L	108	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.0125 mg/L	106	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	2.5 mg/L	106	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.005 mg/L	105	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	0.05 mg/L	105	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.005 mg/L	103	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.025 mg/L	105	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.0125 mg/L	104	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.005 mg/L	106	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.00025 mg/L	103	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.025 mg/L	107	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.025 mg/L	107	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.005 mg/L	106	80.0	120	----

Qualifiers

Qualifier	Description
MES	*Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).*

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 975702)										
WT2315735-001	Anonymous	Bromide	24959-67-9	E235.Br	0.52 mg/L	0.5 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 975703)										
WT2315735-001	Anonymous	Fluoride	16984-48-8	E235.F	1.03 mg/L	1 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 975704)										
WT2315735-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	2.53 mg/L	2.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 975705)										
WT2315735-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	0.506 mg/L	0.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 975706)										
WT2315735-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 975707)										
WT2315735-001	Anonymous	Chloride	16887-00-6	E235.Cl	102 mg/L	100 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 978085)										
WT2315711-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	ND mg/L	0.1 mg/L	ND	70.0	130	----
Anions and Nutrients (QCLot: 978086)										
WT2315783-003	Anonymous	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	0.1 mg/L	ND	75.0	125	----
Cyanides (QCLot: 983903)										
WT2315817-001	WBR-S-04	Cyanide, weak acid dissociable	----	E336	0.115 mg/L	0.125 mg/L	92.2	75.0	125	----
Cyanides (QCLot: 983904)										
WT2315817-001	WBR-S-04	Cyanide, strong acid dissociable (Total)	----	E333	0.204 mg/L	0.25 mg/L	81.7	75.0	125	----
Cyanides (QCLot: 983905)										
WT2315817-001	WBR-S-04	Cyanide, free	----	E339	0.121 mg/L	0.125 mg/L	96.8	75.0	125	----
Total Metals (QCLot: 975559)										
TY2305000-002	Anonymous	Aluminum, total	7429-90-5	E420	0.0950 mg/L	0.1 mg/L	95.0	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0532 mg/L	0.05 mg/L	106	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0544 mg/L	0.05 mg/L	109	70.0	130	----
		Barium, total	7440-39-3	E420	0.0123 mg/L	0.0125 mg/L	98.4	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.00525 mg/L	0.005 mg/L	105	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.0519 mg/L	0.05 mg/L	104	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 975559) - continued										
TY2305000-002	Anonymous	Boron, total	7440-42-8	E420	0.051 mg/L	0.05 mg/L	102	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00537 mg/L	0.005 mg/L	107	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00261 mg/L	0.0025 mg/L	104	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0136 mg/L	0.0125 mg/L	109	70.0	130	----
		Cobalt, total	7440-48-4	E420	0.0130 mg/L	0.0125 mg/L	104	70.0	130	----
		Copper, total	7440-50-8	E420	0.0126 mg/L	0.0125 mg/L	101	70.0	130	----
		Iron, total	7439-89-6	E420	ND mg/L	0.05 mg/L	ND	70.0	130	----
		Lead, total	7439-92-1	E420	0.0266 mg/L	0.025 mg/L	106	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0130 mg/L	0.0125 mg/L	104	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0130 mg/L	0.0125 mg/L	104	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0264 mg/L	0.025 mg/L	106	70.0	130	----
		Phosphorus, total	7723-14-0	E420	0.577 mg/L	0.5 mg/L	115	70.0	130	----
		Potassium, total	7440-09-7	E420	2.60 mg/L	2.5 mg/L	104	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.00519 mg/L	0.005 mg/L	104	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0532 mg/L	0.05 mg/L	106	70.0	130	----
		Silicon, total	7440-21-3	E420	ND mg/L	0.5 mg/L	ND	70.0	130	----
		Silver, total	7440-22-4	E420	0.00485 mg/L	0.005 mg/L	97.0	70.0	130	----
		Sodium, total	7440-23-5	E420	2.60 mg/L	2.5 mg/L	104	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	2.55 mg/L	2.5 mg/L	102	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.00536 mg/L	0.005 mg/L	107	70.0	130	----
		Thallium, total	7440-28-0	E420	0.0520 mg/L	0.05 mg/L	104	70.0	130	----
		Thorium, total	7440-29-1	E420	0.00499 mg/L	0.005 mg/L	99.8	70.0	130	----
		Tin, total	7440-31-5	E420	0.0258 mg/L	0.025 mg/L	103	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0130 mg/L	0.0125 mg/L	104	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.00507 mg/L	0.005 mg/L	101	70.0	130	----
		Uranium, total	7440-61-1	E420	0.000271 mg/L	0.00025 mg/L	108	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0267 mg/L	0.025 mg/L	107	70.0	130	----
		Zinc, total	7440-66-6	E420	ND mg/L	0.025 mg/L	ND	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.00476 mg/L	0.005 mg/L	95.1	70.0	130	----
Total Metals (QCLot: 975737)										
WT2315677-001	Anonymous	Mercury, total	7439-97-6	E508	0.0000836 mg/L	0.0001 mg/L	83.6	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 975996)										
TY2304909-002	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.102 mg/L	0.1 mg/L	102	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0512 mg/L	0.05 mg/L	102	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0593 mg/L	0.05 mg/L	119	70.0	130	----
		Barium, dissolved	7440-39-3	E421	0.0122 mg/L	0.0125 mg/L	97.3	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.00543 mg/L	0.005 mg/L	109	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.0452 mg/L	0.05 mg/L	90.5	70.0	130	----
		Boron, dissolved	7440-42-8	E421	ND mg/L	0.05 mg/L	ND	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00515 mg/L	0.005 mg/L	103	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00261 mg/L	0.0025 mg/L	104	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0126 mg/L	0.0125 mg/L	100	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0125 mg/L	0.0125 mg/L	100	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0120 mg/L	0.0125 mg/L	95.7	70.0	130	----
		Iron, dissolved	7439-89-6	E421	0.050 mg/L	0.05 mg/L	101	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0244 mg/L	0.025 mg/L	97.6	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0132 mg/L	0.0125 mg/L	106	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	0.0129 mg/L	0.0125 mg/L	103	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0129 mg/L	0.0125 mg/L	103	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0245 mg/L	0.025 mg/L	98.1	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	0.607 mg/L	0.5 mg/L	121	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	2.66 mg/L	2.5 mg/L	106	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.00523 mg/L	0.005 mg/L	105	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0602 mg/L	0.05 mg/L	120	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	ND mg/L	0.5 mg/L	ND	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00472 mg/L	0.005 mg/L	94.4	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	2.62 mg/L	2.5 mg/L	105	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	2.71 mg/L	2.5 mg/L	108	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.00558 mg/L	0.005 mg/L	112	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.0500 mg/L	0.05 mg/L	100.0	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.00487 mg/L	0.005 mg/L	97.4	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0255 mg/L	0.025 mg/L	102	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0128 mg/L	0.0125 mg/L	102	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.00510 mg/L	0.005 mg/L	102	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 975996) - continued										
TY2304909-002	Anonymous	Uranium, dissolved	7440-61-1	E421	0.000245 mg/L	0.00025 mg/L	97.9	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0265 mg/L	0.025 mg/L	106	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.0262 mg/L	0.025 mg/L	105	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.00522 mg/L	0.005 mg/L	104	70.0	130	----

Chain of Custody (COC) / Analytical Request Form

COC Number: 22 -

Page 1 of 1

Environmental Division Waterloo

Work Order Reference WT2315817

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Telephone : +1 519 886 6910

Report To	Contact and company name below will appear on the final report
Company:	WSP E&I Canada Ltd.
Contact:	Dale Klodnicki
Phone:	647 993 4243
	Company address below will appear on the final report
Street:	6925 Century Avenue, Sutie #100
City/Province:	Mississauga, Ontario
Postal Code:	L5N 5K2
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	
Contact:	

Reports / Recipients

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Merge QC/QCI Reports with COA ☑ YES ☐ NO ☐ N/A

☑ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: dale.klodnicki@wsp.com

Email 2: roxanne.dibbley@wsp.com

Email 3:

Invoice Recipients

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: apinvoice.canada@woodplc.com

Email 2: dale.klodnicki@wsp.com

Turnaround Time (TAT) Requested

☑ Routine [R] if received by 3pm M-F - no surcharges apply

☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum

☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimun

☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimun

☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimun

☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.

Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests.

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

Project Information

ALS Account # / Quote #:	WT2023WOOD1000009
Job #:	OMEMA2304S.2000.2020.1142.573000
PO / AFE:	OMEMA2304S.2000.2020.1142.573000
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (ALS use only): WT2315817

ALS Contact: Gayle Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	SURFACE WATER QUALITY PARAM	incl: EC, pH, TSS, TDS, acidity,	alkalinity, NH3, TP, total metals,	dissolved metals, total LL Hg,	hardness, anions,	Total, WAD & Free Cn	total MeHg,	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	WBR-S-04	4-Jun-23	14:10	WATER	8	R	R	R	R	R	R				
	NDR-S-04	1-Jun-23	14:00	WATER	8	R	R	R	R	R	R				
	NDR-S-06B	31-May-23	14:00	WATER	8	R	R	R	R	R	R				

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

Federal CCME Canadian Environmental Quality Guidelines (JUL, 2012)

Ontario PWQO (1994 + Federal CCME (JUL,2012) and Ontario R153 Guidelines (2011)

Note: Total MeHg analysis is not requested for these samples.

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☑ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				9.8			

SHIPMENT RELEASE (client use)

Released by:	Roxanne Dibbley	Date:	05-Jun-23	Time:	9:00

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:
	6/6/23	9:30

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

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

WT CN-122 N-873 GC-014 MM-075 TL

CERTIFICATE OF ANALYSIS

Work Order	: **WT2317497**	Page	: 1 of 6
Client	: **WSP E&I Canada Limited**	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 6925 Century Avenue Suite #100 Mississauga ON Canada L5N 7K2	Address	: 60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2304S.2000.2020.1142.573000	Date Samples Received	: 16-Jun-2023 09:30
PO	: OMEMA2304S.2000.2020.1142.573000	Date Analysis Commenced	: 16-Jun-2023
C-O-C number	: 20-1043038	Issue Date	: 30-Jun-2023 16:53
Sampler	: ----		
Site	: ----		
Quote number	: OMEMA2304S.2000.2020.1142.573000		
No. of samples received	: 5		
No. of samples analysed	: 5		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Greg Pokocky	Manager - Inorganics	Inorganics, Waterloo, Ontario
John Tang	Lab Analyst	Inorganics, Waterloo, Ontario
Jon Fisher	Production Manager, Environmental	Inorganics, Waterloo, Ontario
Jon Fisher	Production Manager, Environmental	Metals, Waterloo, Ontario

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances

LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	no units
µS/cm	microsiemens per centimetre
mg/L	milligrams per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

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

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	*Description*
DLDS	*Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.*
PEHR	*Parameter exceeded recommended holding time on receipt: Proceeded with analysis as requested.*
PEHT	*Parameter exceeded recommended holding time prior to analysis.*
RRV	*Reported result verified by repeat analysis.*

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WBR-P-04	NDRGer-LK	NDRMar-LK	NDRSuth-LK	Field Blank
					Client sampling date / time	08-Jun-2023 16:00	10-Jun-2023 12:40	12-Jun-2023 14:00	13-Jun-2023 11:20	[16-Jun-2023]
						WT2317497-001	WT2317497-002	WT2317497-003	WT2317497-004	WT2317497-005
						Result	Result	Result	Result	Result
Physical Tests										
Acidity (as CaCO3)	----	E283/WT	2.0	mg/L		3.1	<2.0	<2.0	<2.0	<2.0
Alkalinity, total (as CaCO3)	----	E290/WT	1.0	mg/L		8.2	98.9	40.3	106	<1.0
Conductivity	----	E100/WT	1.0	µS/cm		27.5	183	76.3	199	1.1
Hardness (as CaCO3), dissolved	----	EC100/WT	0.50	mg/L		20.5	104	47.3	110	<0.50
pH	----	E108/WT	0.10	pH units		6.73	8.32	7.87	8.39	5.81
Solids, total dissolved [TDS]	----	E162/WT	10	mg/L		40	102 DLDS	57 DLDS	98 DLDS	<10
Solids, total suspended [TSS]	----	E160/WT	3.0	mg/L		<3.0	<3.0	<3.0	<3.0	<3.8
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L		0.0122	0.0070	0.0057	0.0062	0.0243
Bromide	24959-67-9	E235.Br/WT	0.10	mg/L		<0.10 PEHR	<0.10 PEHT	<0.10	<0.10	<0.10
Chloride	16887-00-6	E235.Cl/WT	0.50	mg/L		<0.50 PEHR	<0.50 PEHT	<0.50	<0.50	<0.50
Fluoride	16984-48-8	E235.F/WT	0.020	mg/L		<0.020 PEHR	0.053 PEHT	0.024	0.034	<0.020
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L		<0.020 PEHR	<0.020 PEHT	<0.020	<0.020	<0.020
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L		<0.010 PEHR	<0.010 PEHT	<0.010	<0.010	<0.010
Phosphorus, total	7723-14-0	E372-U/WT	0.0020	mg/L		0.0303	0.0154	0.0143	0.0086	0.0027
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	0.30	mg/L		<0.30 PEHR	1.02 PEHT	<0.30	1.77	<0.30
Cyanides										
Cyanide, free	----	E339/WT	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Cyanide, strong acid dissociable (Total)	----	E333/WT	0.0020	mg/L		<0.0020	<0.0020	0.0041	<0.0020	<0.0020
Cyanide, weak acid dissociable	----	E336/WT	0.0020	mg/L		<0.0020	<0.0020	0.0022	<0.0020	<0.0020
Total Metals										
Aluminum, total	7429-90-5	E420/WT	0.0030	mg/L		0.188	0.0417	0.0969	0.0090	<0.0030
Antimony, total	7440-36-0	E420/WT	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic, total	7440-38-2	E420/WT	0.00010	mg/L		0.00086	0.00045	0.00049	0.00023	<0.00010
Barium, total	7440-39-3	E420/WT	0.00010	mg/L		0.00522	0.0128	0.00538	0.00930	<0.00010
Beryllium, total	7440-41-7	E420/WT	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Bismuth, total	7440-69-9	E420/WT	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron, total	7440-42-8	E420/WT	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium, total	7440-43-9	E420/WT	0.0000050	mg/L		0.0000175	<0.0000050	0.0000061	<0.0000050	<0.0000050

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WBR-P-04	NDRGer-LK	NDRMar-LK	NDRSuth-LK	Field Blank
					Client sampling date / time	08-Jun-2023 16:00	10-Jun-2023 12:40	12-Jun-2023 14:00	13-Jun-2023 11:20	[16-Jun-2023]
						WT2317497-001	WT2317497-002	WT2317497-003	WT2317497-004	WT2317497-005
						Result	Result	Result	Result	Result
Total Metals										
Calcium, total	7440-70-2	E420/WT	0.050	mg/L		5.38	26.8	12.0	29.0	<0.050
Cesium, total	7440-46-2	E420/WT	0.000010	mg/L		0.000013	<0.000010	<0.000010	<0.000010	<0.000010
Chromium, total	7440-47-3	E420/WT	0.00050	mg/L		0.00067	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt, total	7440-48-4	E420/WT	0.00010	mg/L		0.00015	<0.00010	<0.00010	<0.00010	<0.00010
Copper, total	7440-50-8	E420/WT	0.00050	mg/L		0.00070	0.00065	0.00068	<0.00050	<0.00050
Iron, total	7439-89-6	E420/WT	0.010	mg/L		0.482	0.187	0.216	0.017	<0.010
Lead, total	7439-92-1	E420/WT	0.000050	mg/L		0.000282	<0.000050	0.000068	<0.000050	<0.000050
Lithium, total	7439-93-2	E420/WT	0.0010	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Magnesium, total	7439-95-4	E420/WT	0.0050	mg/L		1.45	6.91	3.16	7.30	<0.0050
Manganese, total	7439-96-5	E420/WT	0.00010	mg/L		0.0160	0.0226	0.0116	0.0117	<0.00010
Mercury, total	7439-97-6	E508/WT	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum, total	7439-98-7	E420/WT	0.000050	mg/L		<0.000050	0.000139	0.000051	<0.000050	<0.000050
Nickel, total	7440-02-0	E420/WT	0.00050	mg/L		0.00066	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus, total	7723-14-0	E420/WT	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
Potassium, total	7440-09-7	E420/WT	0.050	mg/L		0.178	0.721	0.294	0.771	<0.050
Rubidium, total	7440-17-7	E420/WT	0.00020	mg/L		0.00082	0.00114	0.00065	0.00118	<0.00020
Selenium, total	7782-49-2	E420/WT	0.000050	mg/L		0.000127	0.000070	0.000077	<0.000050	<0.000050
Silicon, total	7440-21-3	E420/WT	0.10	mg/L		0.33	1.50	0.66	1.52	0.19
Silver, total	7440-22-4	E420/WT	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium, total	7440-23-5	E420/WT	0.050	mg/L		0.415	2.27	0.844	1.18	<0.050
Strontium, total	7440-24-6	E420/WT	0.00020	mg/L		0.0125	0.0492	0.0204	0.0356	<0.00020
Sulfur, total	7704-34-9	E420/WT	0.50	mg/L		<0.50	0.58	<0.50	0.82	<0.50
Tellurium, total	13494-80-9	E420/WT	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium, total	7440-28-0	E420/WT	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thorium, total	7440-29-1	E420/WT	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin, total	7440-31-5	E420/WT	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium, total	7440-32-6	E420/WT	0.00030	mg/L		0.00534	0.00102	0.00314	<0.00030	<0.00030
Tungsten, total	7440-33-7	E420/WT	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium, total	7440-61-1	E420/WT	0.000010	mg/L		0.000016	0.000037	0.000035	0.000074	<0.000010
Vanadium, total	7440-62-2	E420/WT	0.00050	mg/L		0.00053	<0.00050	<0.00050	<0.00050	<0.00050

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WBR-P-04	NDRGer-LK	NDRMar-LK	NDRSuth-LK	Field Blank
					Client sampling date / time	08-Jun-2023 16:00	10-Jun-2023 12:40	12-Jun-2023 14:00	13-Jun-2023 11:20	[16-Jun-2023]
						WT2317497-001	WT2317497-002	WT2317497-003	WT2317497-004	WT2317497-005
						Result	Result	Result	Result	Result
Total Metals										
Zinc, total	7440-66-6	E420/WT	0.0030	mg/L		0.0051	<0.0030	<0.0030	<0.0030	<0.0030
Zirconium, total	7440-67-7	E420/WT	0.00020	mg/L		0.00028	<0.00020	<0.00020	<0.00020	<0.00020
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/WT	0.0010	mg/L		0.138	0.0295	0.0541	0.0033	<0.0010
Antimony, dissolved	7440-36-0	E421/WT	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic, dissolved	7440-38-2	E421/WT	0.00010	mg/L		0.00087	0.00045	0.00047	0.00023	<0.00010
Barium, dissolved	7440-39-3	E421/WT	0.00010	mg/L		0.00451	0.0128	0.00525	0.00906	<0.00010
Beryllium, dissolved	7440-41-7	E421/WT	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Bismuth, dissolved	7440-69-9	E421/WT	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron, dissolved	7440-42-8	E421/WT	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium, dissolved	7440-43-9	E421/WT	0.0000050	mg/L		0.0000150	<0.0000050	0.0000056	<0.0000050	<0.0000050
Calcium, dissolved	7440-70-2	E421/WT	0.050	mg/L		5.73	29.5	13.4	32.0	<0.050
Cesium, dissolved	7440-46-2	E421/WT	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Chromium, dissolved	7440-47-3	E421/WT	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt, dissolved	7440-48-4	E421/WT	0.00010	mg/L		0.00013	<0.00010	<0.00010	<0.00010	<0.00010
Copper, dissolved	7440-50-8	E421/WT	0.00020	mg/L		0.00055	0.00050	0.00058	<0.00020	<0.00020
Iron, dissolved	7439-89-6	E421/WT	0.010	mg/L		0.362	0.151	0.162	<0.010	<0.010
Lead, dissolved	7439-92-1	E421/WT	0.000050	mg/L		0.000200	<0.000050	<0.000050	<0.000050	<0.000050
Lithium, dissolved	7439-93-2	E421/WT	0.0010	mg/L		<0.0010	0.0011	<0.0010	0.0011	<0.0010
Magnesium, dissolved	7439-95-4	E421/WT	0.0050	mg/L		1.50	7.28	3.37	7.32	<0.0050
Manganese, dissolved	7439-96-5	E421/WT	0.00010	mg/L		0.0183	0.00340	0.00672	0.00099	<0.00010
Molybdenum, dissolved	7439-98-7	E421/WT	0.000050	mg/L		<0.000050	0.000117	<0.000050	<0.000050	<0.000050
Nickel, dissolved	7440-02-0	E421/WT	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus, dissolved	7723-14-0	E421/WT	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
Potassium, dissolved	7440-09-7	E421/WT	0.050	mg/L		0.139	0.688	0.269	0.739	<0.050
Rubidium, dissolved	7440-17-7	E421/WT	0.00020	mg/L		0.00066	0.00111	0.00059	0.00123	<0.00020
Selenium, dissolved	7782-49-2	E421/WT	0.000050	mg/L		0.000134	0.000084	0.000090	<0.000050	<0.000050
Silicon, dissolved	7440-21-3	E421/WT	0.050	mg/L		0.148	1.35	0.505	1.35	0.150 RRV
Silver, dissolved	7440-22-4	E421/WT	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium, dissolved	7440-23-5	E421/WT	0.050	mg/L		0.367	2.21	0.836	1.12	<0.050

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WBR-P-04	NDRGer-LK	NDRMar-LK	NDRSuth-LK	Field Blank
					Client sampling date / time	08-Jun-2023 16:00	10-Jun-2023 12:40	12-Jun-2023 14:00	13-Jun-2023 11:20	[16-Jun-2023]
						WT2317497-001	WT2317497-002	WT2317497-003	WT2317497-004	WT2317497-005
						Result	Result	Result	Result	Result
Dissolved Metals										
Strontium, dissolved	7440-24-6	E421/WT	0.00020	mg/L		0.0124	0.0507	0.0214	0.0364	<0.00020
Sulfur, dissolved	7704-34-9	E421/WT	0.50	mg/L		<0.50	<0.50	<0.50	0.59	<0.50
Tellurium, dissolved	13494-80-9	E421/WT	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium, dissolved	7440-28-0	E421/WT	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thorium, dissolved	7440-29-1	E421/WT	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin, dissolved	7440-31-5	E421/WT	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium, dissolved	7440-32-6	E421/WT	0.00030	mg/L		0.00329	0.00063	0.00174	<0.00030	<0.00030
Tungsten, dissolved	7440-33-7	E421/WT	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium, dissolved	7440-61-1	E421/WT	0.000010	mg/L		0.000014	0.000035	0.000033	0.000070	<0.000010
Vanadium, dissolved	7440-62-2	E421/WT	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc, dissolved	7440-66-6	E421/WT	0.0010	mg/L		0.0044	<0.0010	0.0024	<0.0010	<0.0010
Zirconium, dissolved	7440-67-7	E421/WT	0.00030	mg/L		0.00032	<0.00030	<0.00030	<0.00030	<0.00030
Dissolved metals filtration location	----	EP421/WT	-	-		Field	Field	Field	Field	Field

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2317497**	Page	: 1 of 21
Client	: **WSP E&I Canada Limited**	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 6925 Century Avenue Suite #100 Mississauga ON Canada L5N 7K2	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 905 568 2929, Ext. 4140	Telephone	: +1 519 886 6910
Project	: OMEMA2304S.2000.2020.1142.573000	Date Samples Received	: 16-Jun-2023 09:30
PO	: OMEMA2304S.2000.2020.1142.573000	Issue Date	: 30-Jun-2023 16:58
C-O-C number	: 20-1043038		
Sampler	: ----		
Site	: ----		
Quote number	: OMEMA2304S.2000.2020.1142.573000		
No. of samples received	: 5		
No. of samples analysed	: 5		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- Matrix Spike outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Matrix Spike (MS) Recoveries								
Dissolved Metals	Anonymous	Anonymous	Silver, dissolved	7440-22-4	E421	68.0 % MES	70.0-130%	Recovery less than lower data quality objective

Result Qualifiers

Qualifier	Description
MES	*Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).*

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] NDRGer-LK	E298	10-Jun-2023	20-Jun-2023	----	----		21-Jun-2023	28 days	11 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] WBR-P-04	E298	08-Jun-2023	20-Jun-2023	----	----		21-Jun-2023	28 days	13 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] Field Blank	E298	16-Jun-2023	20-Jun-2023	----	----		21-Jun-2023	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] NDRSuth-LK	E298	13-Jun-2023	20-Jun-2023	----	----		21-Jun-2023	28 days	8 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] NDRMar-LK	E298	12-Jun-2023	20-Jun-2023	----	----		21-Jun-2023	28 days	9 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] WBR-P-04	E235.Br	08-Jun-2023	17-Jun-2023	----	----		19-Jun-2023	28 days	11 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] Field Blank	E235.Br	16-Jun-2023	20-Jun-2023	----	----		21-Jun-2023	28 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] NDRSuth-LK	E235.Br	13-Jun-2023	17-Jun-2023	----	----		19-Jun-2023	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] NDRMar-LK	E235.Br	12-Jun-2023	17-Jun-2023	----	----		19-Jun-2023	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] NDRGer-LK	E235.Br	10-Jun-2023	17-Jun-2023	----	----		19-Jun-2023	28 days	9 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] WBR-P-04	E235.Cl	08-Jun-2023	17-Jun-2023	----	----		19-Jun-2023	28 days	11 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] Field Blank	E235.Cl	16-Jun-2023	20-Jun-2023	----	----		21-Jun-2023	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDRSuth-LK	E235.Cl	13-Jun-2023	17-Jun-2023	----	----		19-Jun-2023	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDRMar-LK	E235.Cl	12-Jun-2023	17-Jun-2023	----	----		19-Jun-2023	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] NDRGer-LK	E235.Cl	10-Jun-2023	17-Jun-2023	----	----		19-Jun-2023	28 days	9 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] WBR-P-04	E235.F	08-Jun-2023	17-Jun-2023	----	----		19-Jun-2023	28 days	11 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] Field Blank	E235.F	16-Jun-2023	20-Jun-2023	----	----		21-Jun-2023	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDRSuth-LK	E235.F	13-Jun-2023	17-Jun-2023	----	----		19-Jun-2023	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDRMar-LK	E235.F	12-Jun-2023	17-Jun-2023	----	----		19-Jun-2023	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDRGer-LK	E235.F	10-Jun-2023	17-Jun-2023	----	----		19-Jun-2023	28 days	9 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] WBR-P-04	E235.NO3	08-Jun-2023	17-Jun-2023	----	----		19-Jun-2023	7 days	11 days	× EHTR-FM
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] Field Blank	E235.NO3	16-Jun-2023	20-Jun-2023	----	----		21-Jun-2023	7 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDRSuth-LK	E235.NO3	13-Jun-2023	17-Jun-2023	----	----		19-Jun-2023	7 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDRMar-LK	E235.NO3	12-Jun-2023	17-Jun-2023	----	----		19-Jun-2023	7 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDRGer-LK	E235.NO3	10-Jun-2023	17-Jun-2023	----	----		19-Jun-2023	7 days	9 days	× EHT

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] WBR-P-04	E235.NO2	08-Jun-2023	17-Jun-2023	----	----		19-Jun-2023	7 days	11 days	× EHTR-FM
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] Field Blank	E235.NO2	16-Jun-2023	20-Jun-2023	----	----		21-Jun-2023	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDRSuth-LK	E235.NO2	13-Jun-2023	17-Jun-2023	----	----		19-Jun-2023	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDRMar-LK	E235.NO2	12-Jun-2023	17-Jun-2023	----	----		19-Jun-2023	7 days	7 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] NDRGer-LK	E235.NO2	10-Jun-2023	17-Jun-2023	----	----		19-Jun-2023	7 days	9 days	× EHT
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] WBR-P-04	E235.SO4	08-Jun-2023	17-Jun-2023	----	----		19-Jun-2023	28 days	11 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] Field Blank	E235.SO4	16-Jun-2023	20-Jun-2023	----	----		21-Jun-2023	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDRSuth-LK	E235.SO4	13-Jun-2023	17-Jun-2023	----	----		19-Jun-2023	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDRMar-LK	E235.SO4	12-Jun-2023	17-Jun-2023	----	----		19-Jun-2023	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] NDRGer-LK	E235.SO4	10-Jun-2023	17-Jun-2023	----	----		19-Jun-2023	28 days	9 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP] NDRGer-LK	E372-U	10-Jun-2023	21-Jun-2023	----	----		21-Jun-2023	28 days	11 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP] WBR-P-04	E372-U	08-Jun-2023	21-Jun-2023	----	----		21-Jun-2023	28 days	13 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP] Field Blank	E372-U	16-Jun-2023	21-Jun-2023	----	----		21-Jun-2023	28 days	6 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP] NDRSuth-LK	E372-U	13-Jun-2023	21-Jun-2023	----	----		21-Jun-2023	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP] NDRMar-LK	E372-U	12-Jun-2023	21-Jun-2023	----	----		21-Jun-2023	28 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) Field Blank	E339	16-Jun-2023	30-Jun-2023	----	----		30-Jun-2023	14 days	14 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDRSuth-LK	E339	13-Jun-2023	27-Jun-2023	----	----		27-Jun-2023	14 days	14 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDRMar-LK	E339	12-Jun-2023	27-Jun-2023	----	----		27-Jun-2023	14 days	15 days	× EHT

Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDRGer-LK	E339	10-Jun-2023	27-Jun-2023	----	----		27-Jun-2023	14 days	17 days	✖ EHT
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) WBR-P-04	E339	08-Jun-2023	27-Jun-2023	----	----		27-Jun-2023	14 days	19 days	✖ EHT
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) Field Blank	E333	16-Jun-2023	30-Jun-2023	----	----		30-Jun-2023	14 days	14 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDRSuth-LK	E333	13-Jun-2023	27-Jun-2023	----	----		27-Jun-2023	14 days	14 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDRMar-LK	E333	12-Jun-2023	27-Jun-2023	----	----		27-Jun-2023	14 days	15 days	✖ EHT
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDRGer-LK	E333	10-Jun-2023	27-Jun-2023	----	----		27-Jun-2023	14 days	17 days	✖ EHT
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) WBR-P-04	E333	08-Jun-2023	27-Jun-2023	----	----		27-Jun-2023	14 days	19 days	✖ EHT
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) Field Blank	E336	16-Jun-2023	30-Jun-2023	----	----		30-Jun-2023	14 days	14 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDRSuth-LK	E336	13-Jun-2023	27-Jun-2023	----	----		27-Jun-2023	14 days	14 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDRMar-LK	E336	12-Jun-2023	27-Jun-2023	----	----		27-Jun-2023	14 days	15 days	× EHT
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) NDRGer-LK	E336	10-Jun-2023	27-Jun-2023	----	----		27-Jun-2023	14 days	17 days	× EHT
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) WBR-P-04	E336	08-Jun-2023	27-Jun-2023	----	----		27-Jun-2023	14 days	19 days	× EHT
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDRMar-LK	E421	12-Jun-2023	21-Jun-2023	----	----		21-Jun-2023	180 days	10 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDRGer-LK	E421	10-Jun-2023	21-Jun-2023	----	----		21-Jun-2023	180 days	12 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) WBR-P-04	E421	08-Jun-2023	21-Jun-2023	----	----		21-Jun-2023	180 days	13 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) Field Blank	E421	16-Jun-2023	21-Jun-2023	----	----		21-Jun-2023	180 days	6 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDRSuth-LK	E421	13-Jun-2023	21-Jun-2023	----	----		21-Jun-2023	180 days	9 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDRGer-LK	E283	10-Jun-2023	20-Jun-2023	----	----		21-Jun-2023	14 days	11 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Acidity by Titration										
HDPE [ON MECP]										
WBR-P-04	E283	08-Jun-2023	20-Jun-2023	----	----		21-Jun-2023	14 days	13 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP]										
Field Blank	E283	16-Jun-2023	20-Jun-2023	----	----		21-Jun-2023	14 days	5 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP]										
NDRSuth-LK	E283	13-Jun-2023	20-Jun-2023	----	----		21-Jun-2023	14 days	8 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP]										
NDRMar-LK	E283	12-Jun-2023	20-Jun-2023	----	----		21-Jun-2023	14 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
NDRGer-LK	E290	10-Jun-2023	17-Jun-2023	----	----		20-Jun-2023	14 days	10 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
WBR-P-04	E290	08-Jun-2023	17-Jun-2023	----	----		20-Jun-2023	14 days	12 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
Field Blank	E290	16-Jun-2023	20-Jun-2023	----	----		21-Jun-2023	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
NDRSuth-LK	E290	13-Jun-2023	17-Jun-2023	----	----		20-Jun-2023	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
NDRMar-LK	E290	12-Jun-2023	17-Jun-2023	----	----		20-Jun-2023	14 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDRGer-LK	E100	10-Jun-2023	17-Jun-2023	----	----		20-Jun-2023	28 days	10 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] WBR-P-04	E100	08-Jun-2023	17-Jun-2023	----	----		20-Jun-2023	28 days	12 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] Field Blank	E100	16-Jun-2023	20-Jun-2023	----	----		21-Jun-2023	28 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDRSuth-LK	E100	13-Jun-2023	17-Jun-2023	----	----		20-Jun-2023	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDRMar-LK	E100	12-Jun-2023	17-Jun-2023	----	----		20-Jun-2023	28 days	8 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDRGer-LK	E108	10-Jun-2023	17-Jun-2023	----	----		20-Jun-2023	14 days	10 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] WBR-P-04	E108	08-Jun-2023	17-Jun-2023	----	----		20-Jun-2023	14 days	12 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] Field Blank	E108	16-Jun-2023	20-Jun-2023	----	----		21-Jun-2023	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDRSuth-LK	E108	13-Jun-2023	17-Jun-2023	----	----		20-Jun-2023	14 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE [ON MECP] NDRMar-LK	E108	12-Jun-2023	17-Jun-2023	----	----		20-Jun-2023	14 days	8 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDRSuth-LK	E162	13-Jun-2023	----	----	----		17-Jun-2023	7 days	4 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] Field Blank	E162	16-Jun-2023	----	----	----		20-Jun-2023	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDRMar-LK	E162	12-Jun-2023	----	----	----		17-Jun-2023	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDRGer-LK	E162	10-Jun-2023	----	----	----		17-Jun-2023	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] WBR-P-04	E162	08-Jun-2023	----	----	----		17-Jun-2023	7 days	9 days	× EHTR
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDRMar-LK	E160	12-Jun-2023	----	----	----		16-Jun-2023	7 days	4 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDRSuth-LK	E160	13-Jun-2023	----	----	----		17-Jun-2023	7 days	4 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] Field Blank	E160	16-Jun-2023	----	----	----		20-Jun-2023	7 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDRGer-LK	E160	10-Jun-2023	----	----	----		16-Jun-2023	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] WBR-P-04	E160	08-Jun-2023	----	----	----		16-Jun-2023	7 days	8 days	× EHTR
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] WBR-P-04	E508	08-Jun-2023	19-Jun-2023	----	----		19-Jun-2023	28 days	11 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] Field Blank	E508	16-Jun-2023	19-Jun-2023	----	----		19-Jun-2023	28 days	4 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] NDRSuth-LK	E508	13-Jun-2023	19-Jun-2023	----	----		19-Jun-2023	28 days	6 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] NDRMar-LK	E508	12-Jun-2023	19-Jun-2023	----	----		19-Jun-2023	28 days	7 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) [ON MECP] NDRGer-LK	E508	10-Jun-2023	19-Jun-2023	----	----		19-Jun-2023	28 days	9 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) WBR-P-04	E420	08-Jun-2023	19-Jun-2023	----	----		19-Jun-2023	180 days	11 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) Field Blank	E420	16-Jun-2023	19-Jun-2023	----	----		19-Jun-2023	180 days	3 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
NDRSuth-LK	E420	13-Jun-2023	19-Jun-2023	----	----		19-Jun-2023	180 days	6 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
NDRMar-LK	E420	12-Jun-2023	19-Jun-2023	----	----		19-Jun-2023	180 days	7 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
NDRGer-LK	E420	10-Jun-2023	19-Jun-2023	----	----		19-Jun-2023	180 days	9 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	997548	1	15	6.6	5.0	✓
Alkalinity Species by Titration	E290	994764	2	32	6.2	5.0	✓
Ammonia by Fluorescence	E298	998559	1	19	5.2	5.0	✓
Bromide in Water by IC	E235.Br	994761	2	7	28.5	5.0	✓
Chloride in Water by IC	E235.Cl	994759	2	37	5.4	5.0	✓
Conductivity in Water	E100	994763	2	38	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	999567	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	994756	2	33	6.0	5.0	✓
Free Cyanide	E339	1011376	2	10	20.0	5.0	✓
Nitrate in Water by IC	E235.NO3	994757	2	34	5.8	5.0	✓
Nitrite in Water by IC	E235.NO2	994758	2	34	5.8	5.0	✓
pH by Meter	E108	994762	2	40	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	994760	2	35	5.7	5.0	✓
TDS by Gravimetry	E162	994577	3	51	5.8	5.0	✓
Total Cyanide	E333	1011374	2	27	7.4	5.0	✓
Total Mercury in Water by CVAAS	E508	995924	1	19	5.2	5.0	✓
Total metals in Water by CRC ICPMS	E420	995632	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	998558	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	993821	3	45	6.6	4.7	✓
WAD Cyanide	E336	1011375	2	38	5.2	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	997548	1	15	6.6	5.0	✓
Alkalinity Species by Titration	E290	994764	2	32	6.2	5.0	✓
Ammonia by Fluorescence	E298	998559	1	19	5.2	5.0	✓
Bromide in Water by IC	E235.Br	994761	2	7	28.5	5.0	✓
Chloride in Water by IC	E235.Cl	994759	2	37	5.4	5.0	✓
Conductivity in Water	E100	994763	2	38	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	999567	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	994756	2	33	6.0	5.0	✓
Free Cyanide	E339	1011376	2	10	20.0	5.0	✓
Nitrate in Water by IC	E235.NO3	994757	2	34	5.8	5.0	✓
Nitrite in Water by IC	E235.NO2	994758	2	34	5.8	5.0	✓
pH by Meter	E108	994762	2	40	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	994760	2	35	5.7	5.0	✓
TDS by Gravimetry	E162	994577	3	51	5.8	5.0	✓
Total Cyanide	E333	1011374	2	27	7.4	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Total Mercury in Water by CVAAS	E508	995924	1	19	5.2	5.0	✓
Total metals in Water by CRC ICPMS	E420	995632	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	998558	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	993821	3	45	6.6	4.7	✓
WAD Cyanide	E336	1011375	2	38	5.2	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	997548	1	15	6.6	5.0	✓
Alkalinity Species by Titration	E290	994764	2	32	6.2	5.0	✓
Ammonia by Fluorescence	E298	998559	1	19	5.2	5.0	✓
Bromide in Water by IC	E235.Br	994761	2	7	28.5	5.0	✓
Chloride in Water by IC	E235.Cl	994759	2	37	5.4	5.0	✓
Conductivity in Water	E100	994763	2	38	5.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	999567	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	994756	2	33	6.0	5.0	✓
Free Cyanide	E339	1011376	2	10	20.0	5.0	✓
Nitrate in Water by IC	E235.NO3	994757	2	34	5.8	5.0	✓
Nitrite in Water by IC	E235.NO2	994758	2	34	5.8	5.0	✓
Sulfate in Water by IC	E235.SO4	994760	2	35	5.7	5.0	✓
TDS by Gravimetry	E162	994577	3	51	5.8	5.0	✓
Total Cyanide	E333	1011374	2	27	7.4	5.0	✓
Total Mercury in Water by CVAAS	E508	995924	1	19	5.2	5.0	✓
Total metals in Water by CRC ICPMS	E420	995632	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	998558	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	993821	3	45	6.6	4.7	✓
WAD Cyanide	E336	1011375	2	38	5.2	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	998559	1	19	5.2	5.0	✓
Bromide in Water by IC	E235.Br	994761	2	7	28.5	5.0	✓
Chloride in Water by IC	E235.Cl	994759	2	37	5.4	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	999567	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	994756	2	33	6.0	5.0	✓
Free Cyanide	E339	1011376	2	10	20.0	5.0	✓
Nitrate in Water by IC	E235.NO3	994757	2	34	5.8	5.0	✓
Nitrite in Water by IC	E235.NO2	994758	2	34	5.8	5.0	✓
Sulfate in Water by IC	E235.SO4	994760	2	35	5.7	5.0	✓
Total Cyanide	E333	1011374	2	27	7.4	5.0	✓
Total Mercury in Water by CVAAS	E508	995924	1	19	5.2	5.0	✓
Total metals in Water by CRC ICPMS	E420	995632	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	998558	1	20	5.0	5.0	✓

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
WAD Cyanide	E336	1011375	2	38	5.2	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Waterloo - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Waterloo - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry	E160 Waterloo - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Waterloo - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC	E235.Br Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC	E235.NO2 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC	E235.NO3 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Sulfate in Water by IC	E235.SO4 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 Waterloo - Environmental	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3
Alkalinity Species by Titration	E290 Waterloo - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Waterloo - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Cyanide	E333 Waterloo - Environmental	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336 Waterloo - Environmental	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339 Waterloo - Environmental	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Waterloo - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total metals in Water by CRC ICPMS	E420 Waterloo - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 Waterloo - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Mercury in Water by CVAAS	E508 Waterloo - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Hardness (Calculated)	EC100 Waterloo - Environmental	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Waterloo - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for Total Phosphorus in water	EP372 Waterloo - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Waterloo - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.

QUALITY CONTROL REPORT

Work Order	: **WT2317497**	Page	: 1 of 21
Client	: WSP E&I Canada Limited	Laboratory	: Waterloo - Environmental
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 6925 Century Avenue Suite #100 Mississauga ON Canada L5N 7K2	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	:	Telephone	: +1 519 886 6910
Project	: OMEMA2304S.2000.2020.1142.573000	Date Samples Received	: 16-Jun-2023 09:30
PO	: OMEMA2304S.2000.2020.1142.573000	Date Analysis Commenced	: 16-Jun-2023
C-O-C number	: 20-1043038	Issue Date	: 30-Jun-2023 17:05
Sampler	: ---- 905 568 2929, Ext. 4140		
Site	: ----		
Quote number	: OMEMA2304S.2000.2020.1142.573000		
No. of samples received	: 5		
No. of samples analysed	: 5		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Greg Pokocky	Manager - Inorganics	Waterloo Inorganics, Waterloo, Ontario
John Tang	Lab Analyst	Waterloo Inorganics, Waterloo, Ontario
Jon Fisher	Production Manager, Environmental	Waterloo Inorganics, Waterloo, Ontario
Jon Fisher	Production Manager, Environmental	Waterloo Metals, Waterloo, Ontario

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 993821)											
WT2317420-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 994577)											
WP2312082-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	251	258	2.75%	20%	----
Physical Tests (QC Lot: 994580)											
WT2317173-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	75.5	78.5	3.90%	20%	----
Physical Tests (QC Lot: 994583)											
HA2300283-001	Anonymous	Solids, total dissolved [TDS]	----	E162	10	mg/L	19	16	2	Diff <2x LOR	----
Physical Tests (QC Lot: 994762)											
WT2317368-005	Anonymous	pH	----	E108	0.10	pH units	8.41	8.42	0.119%	4%	----
Physical Tests (QC Lot: 994763)											
WT2317368-005	Anonymous	Conductivity	----	E100	1.0	µS/cm	816	783	4.13%	10%	----
Physical Tests (QC Lot: 994764)											
WT2317368-005	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	287	272	5.48%	20%	----
Physical Tests (QC Lot: 997548)											
BF2300076-001	Anonymous	Acidity (as CaCO3)	----	E283	2.0	mg/L	2.3	<2.0	0.3	Diff <2x LOR	----
Physical Tests (QC Lot: 998456)											
WT2317394-001	Anonymous	pH	----	E108	0.10	pH units	7.92	7.96	0.504%	4%	----
Physical Tests (QC Lot: 998457)											
WT2317394-001	Anonymous	Conductivity	----	E100	1.0	µS/cm	731	721	1.38%	10%	----
Physical Tests (QC Lot: 998458)											
WT2317394-001	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	360	362	0.599%	20%	----
Physical Tests (QC Lot: 999251)											
WT2317507-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	16.5	16.7	0.2	Diff <2x LOR	----
Physical Tests (QC Lot: 999305)											
HA2300290-006	Anonymous	Solids, total dissolved [TDS]	----	E162	10	mg/L	32	33	1	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 994756)											
WT2317497-001	WBR-P-04	Fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 994757)											
WT2317497-001	WBR-P-04	Nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 994758)											

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Anions and Nutrients (QC Lot: 994758) - continued											
WT2317497-001	WBR-P-04	Nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 994759)											
WT2317497-001	WBR-P-04	Chloride	16887-00-6	E235.Cl	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 994760)											
WT2317497-001	WBR-P-04	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	<0.30	<0.30	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 994761)											
WT2317497-001	WBR-P-04	Bromide	24959-67-9	E235.Br	0.10	mg/L	<0.10	<0.10	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 998450)											
WT2317611-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.498	0.491	1.25%	20%	----
Anions and Nutrients (QC Lot: 998451)											
WT2317611-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 998452)											
WT2317611-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 998453)											
WT2317611-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	27.8	27.7	0.0802%	20%	----
Anions and Nutrients (QC Lot: 998454)											
WT2317611-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	143	142	0.0602%	20%	----
Anions and Nutrients (QC Lot: 998455)											
WT2317611-001	Anonymous	Bromide	24959-67-9	E235.Br	0.10	mg/L	<0.10	<0.10	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 998558)											
WT2317187-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0592	0.0550	7.36%	20%	----
Anions and Nutrients (QC Lot: 998559)											
WT2317187-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.329	0.327	0.640%	20%	----
Cyanides (QC Lot: 1011374)											
TY2305404-011	Anonymous	Cyanide, strong acid dissociable (Total)	----	E333	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Cyanides (QC Lot: 1011375)											
WT2317497-001	WBR-P-04	Cyanide, weak acid dissociable	----	E336	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Cyanides (QC Lot: 1011376)											
WT2317497-001	WBR-P-04	Cyanide, free	----	E339	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Cyanides (QC Lot: 1017299)											
TY2305701-001	Anonymous	Cyanide, weak acid dissociable	----	E336	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Cyanides (QC Lot: 1017300)											

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Cyanides (QC Lot: 1017300) - continued											
TY2305701-001	Anonymous	Cyanide, strong acid dissociable (Total)	----	E333	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Cyanides (QC Lot: 1017301)											
TY2305744-001	Anonymous	Cyanide, free	----	E339	0.0020	mg/L	0.0486	0.0490	0.676%	20%	----
Total Metals (QC Lot: 995632)											
TY2305511-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0300	mg/L	0.414	0.424	2.52%	20%	----
		Antimony, total	7440-36-0	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		Arsenic, total	7440-38-2	E420	0.00100	mg/L	0.00115	0.00118	0.00003	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00100	mg/L	0.212	0.218	2.59%	20%	----
		Beryllium, total	7440-41-7	E420	0.000200	mg/L	<0.000200	<0.000200	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000500	mg/L	<0.000500	<0.000500	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.100	mg/L	0.104	0.107	0.003	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000500	mg/L	<0.0000500	<0.0000500	0	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.500	mg/L	104	105	1.02%	20%	----
		Cesium, total	7440-46-2	E420	0.000100	mg/L	0.000577	0.000548	0.000030	Diff <2x LOR	----
		Chromium, total	7440-47-3	E420	0.00500	mg/L	<0.00500	<0.00500	0	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00500	mg/L	<0.00500	<0.00500	0	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.100	mg/L	<0.100	<0.100	0	Diff <2x LOR	----
		Lead, total	7439-92-1	E420	0.000500	mg/L	<0.000500	<0.000500	0	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0100	mg/L	0.0138	0.0145	0.0006	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0500	mg/L	<0.0500	<0.0500	0	Diff <2x LOR	----
		Manganese, total	7439-96-5	E420	0.00100	mg/L	0.00462	0.00467	0.00005	Diff <2x LOR	----
		Molybdenum, total	7439-98-7	E420	0.000500	mg/L	0.00601	0.00611	1.69%	20%	----
		Nickel, total	7440-02-0	E420	0.00500	mg/L	<0.00500	<0.00500	0	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E420	0.500	mg/L	<0.500	<0.500	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.500	mg/L	15.4	15.4	0.240%	20%	----
		Rubidium, total	7440-17-7	E420	0.00200	mg/L	0.0387	0.0379	2.07%	20%	----
		Selenium, total	7782-49-2	E420	0.000500	mg/L	0.00275	0.00278	0.000029	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	1.00	mg/L	10.1	10.3	1.54%	20%	----
		Silver, total	7440-22-4	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E420	0.500	mg/L	23.1	23.0	0.377%	20%	----
		Strontium, total	7440-24-6	E420	0.00200	mg/L	0.438	0.442	1.10%	20%	----
		Sulfur, total	7704-34-9	E420	5.00	mg/L	23.5	24.2	0.74	Diff <2x LOR	----
		Tellurium, total	13494-80-9	E420	0.00200	mg/L	<0.00200	<0.00200	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 995632) - continued											
TY2305511-001	Anonymous	Thallium, total	7440-28-0	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Thorium, total	7440-29-1	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		Tin, total	7440-31-5	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.00300	mg/L	<0.00300	<0.00300	0	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		Vanadium, total	7440-62-2	E420	0.00500	mg/L	0.00540	0.00575	0.00035	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0300	mg/L	<0.0300	<0.0300	0	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E420	0.00200	mg/L	<0.00200	<0.00200	0	Diff <2x LOR	----
Total Metals (QC Lot: 995924)											
TY2305515-003	Anonymous	Mercury, total	7439-97-6	E508	0.0000050	mg/L	0.0000087	0.0000090	0.0000003	Diff <2x LOR	----
Dissolved Metals (QC Lot: 999567)											
TY2305661-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0020	0.0016	0.0004	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00211	0.00206	2.08%	20%	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0441	0.0434	1.54%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	0.410	0.408	0.399%	20%	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	54.9	54.8	0.203%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	0.00068	0.00067	0.000003	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.00146	0.00139	4.54%	20%	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00070	0.00068	0.00001	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	38.0	37.3	1.84%	20%	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	<0.0010	0.0010	0.00001	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	16.7	17.1	2.48%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00100	mg/L	6.17	6.19	0.430%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000276	0.000277	0.000001	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00348	0.00342	0.00006	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	6.79	6.82	0.393%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 999567) - continued											
TY2305661-001	Anonymous	Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00115	0.00113	0.00002	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000085	0.000084	0.000002	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	14.2	14.4	1.16%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	25.0	24.6	1.56%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.455	0.473	3.73%	20%	----
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	7.06	6.92	1.91%	20%	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000039	0.000040	0.0000009	Diff <2x LOR	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0031	0.0015	0.0016	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 993821)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 994577)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 994580)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 994583)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 994763)						
Conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 994764)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 997548)						
Acidity (as CaCO3)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 998457)						
Conductivity	----	E100	1	µS/cm	1.0	----
Physical Tests (QCLot: 998458)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	1.4	----
Physical Tests (QCLot: 999251)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 999305)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 994756)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 994757)						
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 994758)						
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 994759)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 994760)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 994761)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 994761) - continued						
Bromide	24959-67-9	E235.Br	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 998450)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 998451)						
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 998452)						
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 998453)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 998454)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 998455)						
Bromide	24959-67-9	E235.Br	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 998558)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 998559)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Cyanides (QCLot: 1011374)						
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1011375)						
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1011376)						
Cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1017299)						
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1017300)						
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1017301)						
Cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Total Metals (QCLot: 995632)						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 995632) - continued						
Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
Boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
Copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
Iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
Lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
Lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
Sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----
Total Metals (QCLot: 995924)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 995924) - continued						
Mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 999567)						
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 999567) - continued						
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 993821)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	98.2	85.0	115	----
Physical Tests (QCLot: 994577)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	88.4	85.0	115	----
Physical Tests (QCLot: 994580)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	89.2	85.0	115	----
Physical Tests (QCLot: 994583)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	86.2	85.0	115	----
Physical Tests (QCLot: 994762)									
pH	----	E108	----	pH units	7 pH units	101	98.0	102	----
Physical Tests (QCLot: 994763)									
Conductivity	----	E100	1	µS/cm	1409 µS/cm	98.9	90.0	110	----
Physical Tests (QCLot: 994764)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	150 mg/L	103	85.0	115	----
Physical Tests (QCLot: 997548)									
Acidity (as CaCO3)	----	E283	2	mg/L	50 mg/L	100	85.0	115	----
Physical Tests (QCLot: 998456)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 998457)									
Conductivity	----	E100	1	µS/cm	1409 µS/cm	101	90.0	110	----
Physical Tests (QCLot: 998458)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	150 mg/L	101	85.0	115	----
Physical Tests (QCLot: 999251)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	89.8	85.0	115	----
Physical Tests (QCLot: 999305)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	97.8	85.0	115	----
Anions and Nutrients (QCLot: 994756)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 994757)									
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	99.6	90.0	110	----
Anions and Nutrients (QCLot: 994758)									
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	100	90.0	110	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 994759)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 994760)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 994761)									
Bromide	24959-67-9	E235.Br	0.1	mg/L	0.5 mg/L	95.6	85.0	115	----
Anions and Nutrients (QCLot: 998450)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 998451)									
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 998452)									
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 998453)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 998454)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 998455)									
Bromide	24959-67-9	E235.Br	0.1	mg/L	0.5 mg/L	104	85.0	115	----
Anions and Nutrients (QCLot: 998558)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.845 mg/L	97.0	80.0	120	----
Anions and Nutrients (QCLot: 998559)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	98.0	85.0	115	----
Cyanides (QCLot: 1011374)									
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	0.25 mg/L	86.1	80.0	120	----
Cyanides (QCLot: 1011375)									
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	101	80.0	120	----
Cyanides (QCLot: 1011376)									
Cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	102	80.0	120	----
Cyanides (QCLot: 1017299)									
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	101	80.0	120	----
Cyanides (QCLot: 1017300)									
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	0.25 mg/L	89.6	80.0	120	----
Cyanides (QCLot: 1017301)									
Cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	106	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 995632)									
Aluminum, total	7429-90-5	E420	0.003	mg/L	0.1 mg/L	86.9	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	0.05 mg/L	93.5	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	0.05 mg/L	96.4	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.0125 mg/L	94.3	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.005 mg/L	91.1	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	0.05 mg/L	92.0	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	0.05 mg/L	87.0	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.005 mg/L	92.2	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	2.5 mg/L	90.3	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.0025 mg/L	94.8	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.0125 mg/L	92.2	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.0125 mg/L	91.2	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.0125 mg/L	90.9	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	0.05 mg/L	90.1	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.025 mg/L	93.8	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.0125 mg/L	88.4	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	2.5 mg/L	95.0	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.0125 mg/L	92.8	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.0125 mg/L	90.0	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.025 mg/L	91.2	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	0.5 mg/L	94.0	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	2.5 mg/L	93.6	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.005 mg/L	95.8	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	0.05 mg/L	89.9	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	0.5 mg/L	103	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.005 mg/L	88.6	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	2.5 mg/L	92.2	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.0125 mg/L	92.5	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	2.5 mg/L	90.4	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.005 mg/L	88.1	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	0.05 mg/L	93.9	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.005 mg/L	91.6	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.025 mg/L	92.6	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.0125 mg/L	89.3	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.005 mg/L	95.1	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.00025 mg/L	92.1	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 995632) - continued									
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.025 mg/L	93.5	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.025 mg/L	91.2	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.005 mg/L	90.4	80.0	120	----
Total Metals (QCLot: 995924)									
Mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	89.2	80.0	120	----
Dissolved Metals (QCLot: 999567)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	0.1 mg/L	97.5	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	0.05 mg/L	106	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	0.05 mg/L	106	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.0125 mg/L	103	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.005 mg/L	103	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	0.05 mg/L	101	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	0.05 mg/L	101	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.005 mg/L	101	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	2.5 mg/L	102	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.0025 mg/L	106	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.0125 mg/L	99.8	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.0125 mg/L	96.7	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.0125 mg/L	98.7	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	0.05 mg/L	104	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.025 mg/L	100	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.0125 mg/L	104	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	2.5 mg/L	107	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.0125 mg/L	102	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.0125 mg/L	98.3	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.025 mg/L	98.6	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	0.5 mg/L	108	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	2.5 mg/L	102	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.005 mg/L	102	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	0.05 mg/L	101	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	0.5 mg/L	100	60.0	140	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.005 mg/L	97.2	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	2.5 mg/L	103	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.0125 mg/L	105	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	2.5 mg/L	101	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 999567) - continued									
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.005 mg/L	99.2	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	0.05 mg/L	104	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.005 mg/L	106	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.025 mg/L	100	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.0125 mg/L	99.0	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.005 mg/L	101	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.00025 mg/L	108	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.025 mg/L	102	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.025 mg/L	98.4	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.005 mg/L	103	80.0	120	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 994756)										
WT2317497-001	WBR-P-04	Fluoride	16984-48-8	E235.F	1.05 mg/L	1 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 994757)										
WT2317497-001	WBR-P-04	Nitrate (as N)	14797-55-8	E235.NO3	2.51 mg/L	2.5 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 994758)										
WT2317497-001	WBR-P-04	Nitrite (as N)	14797-65-0	E235.NO2	0.508 mg/L	0.5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 994759)										
WT2317497-001	WBR-P-04	Chloride	16887-00-6	E235.Cl	102 mg/L	100 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 994760)										
WT2317497-001	WBR-P-04	Sulfate (as SO4)	14808-79-8	E235.SO4	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 994761)										
WT2317497-001	WBR-P-04	Bromide	24959-67-9	E235.Br	0.53 mg/L	0.5 mg/L	107	75.0	125	----
Anions and Nutrients (QCLot: 998450)										
WT2317611-001	Anonymous	Fluoride	16984-48-8	E235.F	1.00 mg/L	1 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 998451)										
WT2317611-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	2.35 mg/L	2.5 mg/L	94.2	75.0	125	----
Anions and Nutrients (QCLot: 998452)										
WT2317611-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	0.489 mg/L	0.5 mg/L	97.8	75.0	125	----
Anions and Nutrients (QCLot: 998453)										
WT2317611-001	Anonymous	Chloride	16887-00-6	E235.Cl	98.3 mg/L	100 mg/L	98.3	75.0	125	----
Anions and Nutrients (QCLot: 998454)										
WT2317611-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	100 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 998455)										
WT2317611-001	Anonymous	Bromide	24959-67-9	E235.Br	0.44 mg/L	0.5 mg/L	88.1	75.0	125	----
Anions and Nutrients (QCLot: 998558)										
WT2317187-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0923 mg/L	0.1 mg/L	92.3	70.0	130	----
Anions and Nutrients (QCLot: 998559)										
WT2317187-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	0.1 mg/L	ND	75.0	125	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Cyanides (QCLot: 1011374)										
TY2305404-011	Anonymous	Cyanide, strong acid dissociable (Total)	----	E333	0.211 mg/L	0.25 mg/L	84.4	75.0	125	----
Cyanides (QCLot: 1011375)										
WT2317497-001	WBR-P-04	Cyanide, weak acid dissociable	----	E336	0.132 mg/L	0.125 mg/L	106	75.0	125	----
Cyanides (QCLot: 1011376)										
WT2317497-001	WBR-P-04	Cyanide, free	----	E339	0.134 mg/L	0.125 mg/L	107	75.0	125	----
Cyanides (QCLot: 1017299)										
TY2305701-001	Anonymous	Cyanide, weak acid dissociable	----	E336	0.133 mg/L	0.125 mg/L	107	75.0	125	----
Cyanides (QCLot: 1017300)										
TY2305701-001	Anonymous	Cyanide, strong acid dissociable (Total)	----	E333	0.226 mg/L	0.25 mg/L	90.3	75.0	125	----
Cyanides (QCLot: 1017301)										
TY2305744-001	Anonymous	Cyanide, free	----	E339	0.121 mg/L	0.125 mg/L	97.2	75.0	125	----
Total Metals (QCLot: 995632)										
TY2305511-002	Anonymous	Aluminum, total	7429-90-5	E420	0.101 mg/L	0.1 mg/L	101	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0518 mg/L	0.05 mg/L	104	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0518 mg/L	0.05 mg/L	104	70.0	130	----
		Barium, total	7440-39-3	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.00511 mg/L	0.005 mg/L	102	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.0497 mg/L	0.05 mg/L	99.5	70.0	130	----
		Boron, total	7440-42-8	E420	ND mg/L	0.05 mg/L	ND	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00491 mg/L	0.005 mg/L	98.3	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00259 mg/L	0.0025 mg/L	104	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0125 mg/L	0.0125 mg/L	100	70.0	130	----
		Cobalt, total	7440-48-4	E420	0.0122 mg/L	0.0125 mg/L	98.0	70.0	130	----
		Copper, total	7440-50-8	E420	0.0121 mg/L	0.0125 mg/L	97.1	70.0	130	----
		Iron, total	7439-89-6	E420	ND mg/L	0.05 mg/L	ND	70.0	130	----
		Lead, total	7439-92-1	E420	0.0255 mg/L	0.025 mg/L	102	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0121 mg/L	0.0125 mg/L	97.2	70.0	130	----
		Magnesium, total	7439-95-4	E420	2.39 mg/L	2.5 mg/L	95.6	70.0	130	----
		Manganese, total	7439-96-5	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0121 mg/L	0.0125 mg/L	96.7	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0249 mg/L	0.025 mg/L	99.7	70.0	130	----
		Phosphorus, total	7723-14-0	E420	0.478 mg/L	0.5 mg/L	95.6	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 995632) - continued										
TY2305511-002	Anonymous	Potassium, total	7440-09-7	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		Rubidium, total	7440-17-7	E420	ND mg/L	0.005 mg/L	ND	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0501 mg/L	0.05 mg/L	100	70.0	130	----
		Silicon, total	7440-21-3	E420	ND mg/L	0.5 mg/L	ND	70.0	130	----
		Silver, total	7440-22-4	E420	0.00480 mg/L	0.005 mg/L	95.9	70.0	130	----
		Sodium, total	7440-23-5	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.00486 mg/L	0.005 mg/L	97.3	70.0	130	----
		Thallium, total	7440-28-0	E420	0.0513 mg/L	0.05 mg/L	103	70.0	130	----
		Thorium, total	7440-29-1	E420	0.00392 mg/L	0.005 mg/L	78.3	70.0	130	----
		Tin, total	7440-31-5	E420	0.0248 mg/L	0.025 mg/L	99.1	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0126 mg/L	0.0125 mg/L	101	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.00506 mg/L	0.005 mg/L	101	70.0	130	----
		Uranium, total	7440-61-1	E420	0.000248 mg/L	0.00025 mg/L	99.2	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0244 mg/L	0.025 mg/L	97.6	70.0	130	----
		Zinc, total	7440-66-6	E420	0.0257 mg/L	0.025 mg/L	103	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.00462 mg/L	0.005 mg/L	92.3	70.0	130	----
Total Metals (QCLot: 995924)										
TY2305515-004	Anonymous	Mercury, total	7439-97-6	E508	ND mg/L	0.0001 mg/L	ND	70.0	130	----
Dissolved Metals (QCLot: 999567)										
TY2305661-003	Anonymous	Aluminum, dissolved	7429-90-5	E421	ND mg/L	0.1 mg/L	ND	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0528 mg/L	0.05 mg/L	106	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0550 mg/L	0.05 mg/L	110	70.0	130	----
		Barium, dissolved	7440-39-3	E421	0.0128 mg/L	0.0125 mg/L	102	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.00516 mg/L	0.005 mg/L	103	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.0470 mg/L	0.05 mg/L	94.0	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.048 mg/L	0.05 mg/L	95.1	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00518 mg/L	0.005 mg/L	104	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00259 mg/L	0.0025 mg/L	104	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0125 mg/L	0.0125 mg/L	100.0	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0120 mg/L	0.0125 mg/L	96.1	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0130 mg/L	0.0125 mg/L	104	70.0	130	----
		Iron, dissolved	7439-89-6	E421	ND mg/L	0.05 mg/L	ND	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 999567) - continued										
TY2305661-003	Anonymous	Lead, dissolved	7439-92-1	E421	0.0245 mg/L	0.025 mg/L	97.9	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0133 mg/L	0.0125 mg/L	106	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	2.68 mg/L	2.5 mg/L	107	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0120 mg/L	0.0125 mg/L	96.1	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0248 mg/L	0.025 mg/L	99.0	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	0.545 mg/L	0.5 mg/L	109	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	2.58 mg/L	2.5 mg/L	103	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.00515 mg/L	0.005 mg/L	103	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0561 mg/L	0.05 mg/L	112	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	ND mg/L	0.5 mg/L	ND	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00340 mg/L	0.005 mg/L	68.0	70.0	130	MES
		Sodium, dissolved	7440-23-5	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	2.64 mg/L	2.5 mg/L	106	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.00388 mg/L	0.005 mg/L	77.6	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.0519 mg/L	0.05 mg/L	104	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.00515 mg/L	0.005 mg/L	103	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0240 mg/L	0.025 mg/L	96.2	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0127 mg/L	0.0125 mg/L	102	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.00481 mg/L	0.005 mg/L	96.2	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.000252 mg/L	0.00025 mg/L	101	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0255 mg/L	0.025 mg/L	102	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.0268 mg/L	0.025 mg/L	107	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.00501 mg/L	0.005 mg/L	100	70.0	130	----

Qualifiers

Qualifier	Description
MES	*Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).*

Chain of Custody (COC) / Analytical Request Form

COC Number: 20 - 1043038 EC

Page 1

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Environmental Division Waterloo
Work Order Reference
WT2317497

Telephone : +1 519 886 6910

Contact and company name below will appear on the final report	Reports / Recipients	Turnaround Time (TAT) Requested
WSP E&I Canada Ltd. Dale Klodnicki 647 993 4243	Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL) Merge QC/QCI Reports with COA ☑ YES ☐ NO ☐ N/A ☑ Compare Results to Criteria on Report - provide details below if box checked Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX Email 1 or Fax dale.klodnicki@wsp.com Email 2 roxanne.jubley@wsp.com Email 3 alexandra.stankiewicz@wsp.com	☑ Routine [R] if received by 3pm M-F - no surcharges apply ☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum ☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum ☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum ☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum ☐ Same day [E2] if received by 10am M-S - 200% rush surcharge. Additi may apply to rush requests on weekends, statutory holidays and non-rou Date and Time Required for all E&P TATs: For all tests with rush TATs requested, please c
Company address below will appear on the final report 6925 Century Ave, Suite 100 Mississauga, ON L5N 5K2		
Same as Report To ☑ YES ☐ NO Copy of Invoice with Report ☐ YES ☐ NO	**Invoice Recipients** Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX Email 1 or Fax apinvoice.canada@wsdpt.com Email 2 dale.klodnicki@wsp.com	**Analysis Re**
Project Information	**Oil and Gas Required Fields (client use)**	
Quote #: WT2023WOOD1000009 A23045.7000 7000, 1142.573000 see above	AFE/Cost Center: PO# Major/Minor Code: Routing Code: Requisitioner: Location:	
Work Order # (ALS use only): WT2317497-08	ALS Contact: Sampler:	

Indicate Filtered (F), Preserved (P) or Filtered and

Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Surface water Suite (Filtered)	incl. Ecoli, TSS, TDS, pH	NH3, total alkalinity	dissolved metals, total Hg	hardness calculations	Total Metals	Total Hg	SAMPLES ON HOLD	EXTENDED STORAGE REQUIR	SUSPECTED HAZARD (see not
NBR-P-04	08-Jun-23	16:00	SW	8	R									
~~NBR-Gen-Lk~~ NDR Gen-Lk	10-Jun-23	12:40	SW	8	R									
~~NDR-Sth-Lk~~	~~10-Jun-23~~	~~10:00~~	SW	8	R									
~~NDR-Mar-Lk~~ NDR Mar-Lk	12-Jun-23	14:00	SW	8	R									
NDR-Sth-Lk	13-Jun-23	11:20	SW	8	R									
Field Blank	—	—	SW	8	R									

g Water (DW) Samples[1] (client use)	Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)
n from a Regulated DW System? S ☐ NO uman consumption/ use? S ☑ NO	

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☐ ICE ☑ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				10.9			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
	15 June 2023	17:00				BDS	06/16/23	9:30

CERTIFICATE OF ANALYSIS

Work Order	: **WT2322070**	Page	: 1 of 10
Client	: **WSP E&I Canada Limited**	Laboratory	: ALS Environmental - Waterloo
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 6925 Century Avenue Suite #100 Mississauga ON Canada L5N 7K2	Address	: 60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8
Telephone	: 905 568 2929 Ext.4140	Telephone	: +1 519 886 6910
Project	: OMEMA2304S	Date Samples Received	: 18-Jul-2023 15:00
PO	: OMEMA2304S.8000.8200.1142.573000	Date Analysis Commenced	: 21-Jul-2023
C-O-C number	: ----	Issue Date	: 04-Aug-2023 13:56
Sampler	: CM/MB/KW/AD		
Site	: CRAWFORD		
Quote number	: OMEMA2304S.2000.2020.1142.573000		
No. of samples received	: 9		
No. of samples analysed	: 9		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Greg Pokocky	Manager - Inorganics	Inorganics, Waterloo, Ontario
Greg Pokocky	Manager - Inorganics	Metals, Waterloo, Ontario
Kinny Wu	Lab Analyst	Metals, Burnaby, British Columbia
Parnian Sane	Analyst	Metals, Burnaby, British Columbia
Walt Kippenhuck	Supervisor - Inorganic	Inorganics, Waterloo, Ontario
Wayne Smith	Client Services Specialist	Metals, Waterloo, Ontario

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances

LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	no units
µg/L	micrograms per litre
µS/cm	microsiemens per centimetre
mg/L	milligrams per litre
ng/L	nanograms per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

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

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	*Description*
DLDS	*Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.*
DLUI	*Detection Limit Raised: Unknown interference generated an apparent false positive test result.*
RRV	*Reported result verified by repeat analysis.*

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WBR-P-04	NDR-DVSLK	NDR-SUTLK	NDR-GERLK	NDR-MARLK
					Client sampling date / time	14-Jul-2023 11:00	13-Jul-2023 14:30	14-Jul-2023 14:00	12-Jul-2023 12:40	12-Jul-2023 17:40
						WT2322070-001	WT2322070-002	WT2322070-003	WT2322070-004	WT2322070-005
						Result	Result	Result	Result	Result
Physical Tests										
Acidity (as CaCO3)	----	E283/WT	2.0	mg/L		7.7	<2.0	<2.0	<2.0	2.4
Alkalinity, total (as CaCO3)	----	E290/WT	1.0	mg/L		12.0	116	111	114	57.4
Conductivity	----	E100/WT	1.0	µS/cm		36.9	225	213	217	89.5
Hardness (as CaCO3), dissolved	----	EC100/WT	0.50	mg/L		23.6	118	112	114	48.6
pH	----	E108/WT	0.10	pH units		6.70	8.43	8.26	8.23	7.70
Solids, total dissolved [TDS]	----	E162/WT	10	mg/L		55	106 DLDS	104 DLDS	136 DLDS	74 DLDS
Solids, total suspended [TSS]	----	E160/WT	3.0	mg/L		10.1	<3.0	<3.0	<3.0	<3.0
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L		0.0205	0.0201	0.0050	0.0130	0.0108
Bromide	24959-67-9	E235.Br/WT	0.10	mg/L		<0.10	<0.10	<0.10	<0.10	<0.10
Chloride	16887-00-6	E235.Cl/WT	0.50	mg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride	16984-48-8	E235.F/WT	0.020	mg/L		0.022	0.037	0.035	0.059	0.025
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L		<0.020	<0.020	<0.020	<0.020	<0.020
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Phosphorus, total	7723-14-0	E372-U/WT	0.0020	mg/L		0.0421	0.0055	0.0050	0.0091	0.0123
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	0.30	mg/L		<0.30	2.14	1.83	1.13	<0.30
Cyanides										
Cyanide, free	----	E339/WT	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Cyanide, strong acid dissociable (Total)	----	E333/WT	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Cyanide, weak acid dissociable	----	E336/WT	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Total Metals										
Aluminum, total	7429-90-5	E420/WT	0.0030	mg/L		0.346	<0.0030	0.0206	0.0137	0.0784
Antimony, total	7440-36-0	E420/WT	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic, total	7440-38-2	E420/WT	0.00010	mg/L		0.00092	0.00016	0.00024	0.00050	0.00061
Barium, total	7440-39-3	E420/WT	0.00010	mg/L		0.00688	0.00833	0.0102	0.0150	0.00566
Beryllium, total	7440-41-7	E420/WT	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Bismuth, total	7440-69-9	E420/WT	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron, total	7440-42-8	E420/WT	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium, total	7440-43-9	E420/WT	0.0000050	mg/L		0.0000148	<0.0000050	<0.0000050	<0.0000050	0.0000064
Calcium, total	7440-70-2	E420/WT	0.050	mg/L		6.61	31.8	32.1	32.2	14.3

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WBR-P-04	NDR-DVSLK	NDR-SUTLK	NDR-GERLK	NDR-MARLK
					Client sampling date / time	14-Jul-2023 11:00	13-Jul-2023 14:30	14-Jul-2023 14:00	12-Jul-2023 12:40	12-Jul-2023 17:40
						WT2322070-001	WT2322070-002	WT2322070-003	WT2322070-004	WT2322070-005
						Result	Result	Result	Result	Result
Total Metals										
Cesium, total	7440-46-2	E420/WT	0.000010	mg/L		0.000033	<0.000010	<0.000010	<0.000010	<0.000010
Chromium, total	7440-47-3	E420/WT	0.00050	mg/L		0.00113	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt, total	7440-48-4	E420/WT	0.00010	mg/L		0.00027	<0.00010	<0.00010	<0.00010	<0.00010
Copper, total	7440-50-8	E420/WT	0.00050	mg/L		0.00056	<0.00050	<0.00050	<0.00050	0.00063
Iron, total	7439-89-6	E420/WT	0.010	mg/L		0.607	<0.010	0.025	0.117	0.219
Lead, total	7439-92-1	E420/WT	0.000050	mg/L		0.000311	<0.000050	<0.000050	<0.000050	0.000087
Lithium, total	7439-93-2	E420/WT	0.0010	mg/L		<0.0010	0.0012	0.0011	0.0012	<0.0010
Magnesium, total	7439-95-4	E420/WT	0.0050	mg/L		1.94	9.46	8.08	8.08	3.59
Manganese, total	7439-96-5	E420/WT	0.00010	mg/L		0.0343	0.00516	0.0109	0.0162	0.0212
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L		1.41	0.52	0.78	1.61	2.53
Molybdenum, total	7439-98-7	E420/WT	0.000050	mg/L		0.000052	<0.000050	0.000054	0.000164	0.000060
Nickel, total	7440-02-0	E420/WT	0.00050	mg/L		0.00080	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus, total	7723-14-0	E420/WT	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
Potassium, total	7440-09-7	E420/WT	0.050	mg/L		0.226	0.910	0.820	0.814	0.301
Rubidium, total	7440-17-7	E420/WT	0.00020	mg/L		0.00116	0.00144	0.00144	0.00131	0.00074
Selenium, total	7782-49-2	E420/WT	0.000050	mg/L		0.000120	<0.000050	<0.000050	0.000074	0.000079
Silicon, total	7440-21-3	E420/WT	0.10	mg/L		1.09	1.86	1.41	1.45	0.71
Silver, total	7440-22-4	E420/WT	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium, total	7440-23-5	E420/WT	0.050	mg/L		0.354	1.38	1.25	2.68	0.891
Strontium, total	7440-24-6	E420/WT	0.00020	mg/L		0.0155	0.0429	0.0408	0.0623	0.0248
Sulfur, total	7704-34-9	E420/WT	0.50	mg/L		<0.50	0.94	0.90	0.60	<0.50
Tellurium, total	13494-80-9	E420/WT	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium, total	7440-28-0	E420/WT	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thorium, total	7440-29-1	E420/WT	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin, total	7440-31-5	E420/WT	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium, total	7440-32-6	E420/WT	0.00030	mg/L		0.0134	<0.00030	<0.00090 DLUI	0.00039	0.00328
Tungsten, total	7440-33-7	E420/WT	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium, total	7440-61-1	E420/WT	0.000010	mg/L		0.000020	0.000088	0.000082	0.000036	0.000032
Vanadium, total	7440-62-2	E420/WT	0.00050	mg/L		0.00079	<0.00050	<0.00050	<0.00050	<0.00050
Zinc, total	7440-66-6	E420/WT	0.0030	mg/L		0.0080	<0.0030	<0.0030	<0.0030	<0.0030
Zirconium, total	7440-67-7	E420/WT	0.00020	mg/L		0.00040	<0.00020	<0.00020	<0.00020	0.00023

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WBR-P-04	NDR-DVSLK	NDR-SUTLK	NDR-GERLK	NDR-MARLK
					Client sampling date / time	14-Jul-2023 11:00	13-Jul-2023 14:30	14-Jul-2023 14:00	12-Jul-2023 12:40	12-Jul-2023 17:40
						WT2322070-001	WT2322070-002	WT2322070-003	WT2322070-004	WT2322070-005
						Result	Result	Result	Result	Result
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/WT	0.0010	mg/L		0.0811	<0.0010	0.0026	0.0089	0.0375
Antimony, dissolved	7440-36-0	E421/WT	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic, dissolved	7440-38-2	E421/WT	0.00010	mg/L		0.00089	0.00016	0.00024	0.00048	0.00060
Barium, dissolved	7440-39-3	E421/WT	0.00010	mg/L		0.00436	0.00858	0.00997	0.0150	0.00532
Beryllium, dissolved	7440-41-7	E421/WT	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Bismuth, dissolved	7440-69-9	E421/WT	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron, dissolved	7440-42-8	E421/WT	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium, dissolved	7440-43-9	E421/WT	0.0000050	mg/L		0.0000111	<0.0000050	<0.0000050	<0.0000050	0.0000069
Calcium, dissolved	7440-70-2	E421/WT	0.050	mg/L		6.50	31.8	31.4	32.3	13.4
Cesium, dissolved	7440-46-2	E421/WT	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Chromium, dissolved	7440-47-3	E421/WT	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt, dissolved	7440-48-4	E421/WT	0.00010	mg/L		0.00014	<0.00010	<0.00010	<0.00010	<0.00010
Copper, dissolved	7440-50-8	E421/WT	0.00020	mg/L		0.00032	<0.00020	<0.00020	0.00040	0.00046
Iron, dissolved	7439-89-6	E421/WT	0.010	mg/L		0.289	<0.010	<0.010	0.090	0.160
Lead, dissolved	7439-92-1	E421/WT	0.000050	mg/L		0.000135	<0.000050	<0.000050	<0.000050	<0.000050
Lithium, dissolved	7439-93-2	E421/WT	0.0010	mg/L		<0.0010	0.0014	0.0013	0.0013	<0.0010
Magnesium, dissolved	7439-95-4	E421/WT	0.0050	mg/L		1.79	9.46	8.17	8.19	3.69
Manganese, dissolved	7439-96-5	E421/WT	0.00010	mg/L		0.0241	0.00105	0.00082	0.00326	0.00474
Molybdenum, dissolved	7439-98-7	E421/WT	0.000050	mg/L		<0.000050	<0.000050	<0.000050	0.000159	0.000050
Nickel, dissolved	7440-02-0	E421/WT	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Phosphorus, dissolved	7723-14-0	E421/WT	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
Potassium, dissolved	7440-09-7	E421/WT	0.050	mg/L		0.135	0.900	0.827	0.810	0.270
Rubidium, dissolved	7440-17-7	E421/WT	0.00020	mg/L		0.00058	0.00142	0.00144	0.00122	0.00064
Selenium, dissolved	7782-49-2	E421/WT	0.000050	mg/L		0.000124	<0.000050	0.000051	0.000073	0.000102
Silicon, dissolved	7440-21-3	E421/WT	0.050	mg/L		0.481	1.87	1.34	1.42	0.585
Silver, dissolved	7440-22-4	E421/WT	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium, dissolved	7440-23-5	E421/WT	0.050	mg/L		0.358	1.38	1.54	2.74	0.886
Strontium, dissolved	7440-24-6	E421/WT	0.00020	mg/L		0.0149	0.0432	0.0398	0.0609	0.0248
Sulfur, dissolved	7704-34-9	E421/WT	0.50	mg/L		<0.50	0.92	0.88	0.58	<0.50
Tellurium, dissolved	13494-80-9	E421/WT	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium, dissolved	7440-28-0	E421/WT	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	WBR-P-04	NDR-DVSLK	NDR-SUTLK	NDR-GERLK	NDR-MARLK
					Client sampling date / time	14-Jul-2023 11:00	13-Jul-2023 14:30	14-Jul-2023 14:00	12-Jul-2023 12:40	12-Jul-2023 17:40
						WT2322070-001	WT2322070-002	WT2322070-003	WT2322070-004	WT2322070-005
						Result	Result	Result	Result	Result
Dissolved Metals										
Thorium, dissolved	7440-29-1	E421/WT	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin, dissolved	7440-31-5	E421/WT	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium, dissolved	7440-32-6	E421/WT	0.00030	mg/L		0.00208	<0.00030	<0.00030	<0.00030	0.00114
Tungsten, dissolved	7440-33-7	E421/WT	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium, dissolved	7440-61-1	E421/WT	0.000010	mg/L		0.000012	0.000084	0.000075	0.000034	0.000030
Vanadium, dissolved	7440-62-2	E421/WT	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc, dissolved	7440-66-6	E421/WT	0.0010	mg/L		0.0032	<0.0010	<0.0010	<0.0010	0.0014
Zirconium, dissolved	7440-67-7	E421/WT	0.00030	mg/L		<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Dissolved metals filtration location	----	EP421/WT	-	-		Field	Field	Field	Field	Field
Speciated Metals										
Methylmercury (as MeHg), total	22967-92-6	E536/VA	0.000020	µg/L		0.000054	0.000025	0.000040	0.000054	0.000058

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	TRIP BLANK	FIELD BLANK	WBR-S-04	SW-DUP	----
					Client sampling date / time	07-Jul-2023 00:00	17-Jul-2023 15:00	17-Jul-2023 15:00	17-Jul-2023 00:00	----
						WT2322070-006	WT2322070-007	WT2322070-008	WT2322070-009	--------
						Result	Result	Result	Result	----
Physical Tests										
Acidity (as CaCO3)	----	E283/WT	2.0	mg/L		<2.0	<2.0	3.3	3.2	----
Alkalinity, total (as CaCO3)	----	E290/WT	1.0	mg/L		<1.0	<1.0	47.7	61.5	----
Conductivity	----	E100/WT	1.0	µS/cm		1.3	1.2	83.3	87.5	----
Hardness (as CaCO3), dissolved	----	EC100/WT	0.50	mg/L		<0.50	<0.50	48.6	51.1	----
pH	----	E108/WT	0.10	pH units		5.69	5.63	7.55	7.57	----
Solids, total dissolved [TDS]	----	E162/WT	10	mg/L		<10	<10	92 DLDS	94 DLDS	----
Solids, total suspended [TSS]	----	E160/WT	3.0	mg/L		<3.0	<3.0	5.9	3.5	----
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L		<0.0050	<0.0050	0.0284	0.0268	----
Bromide	24959-67-9	E235.Br/WT	0.10	mg/L		<0.10	<0.10	<0.10	<0.10	----
Chloride	16887-00-6	E235.Cl/WT	0.50	mg/L		<0.50	<0.50	<0.50	<0.50	----
Fluoride	16984-48-8	E235.F/WT	0.020	mg/L		<0.020	<0.020	0.028	0.028	----
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L		<0.020	<0.020	0.032	0.041	----
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	----
Phosphorus, total	7723-14-0	E372-U/WT	0.0020	mg/L		<0.0020	0.0411	0.0390	0.0349	----
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	0.30	mg/L		<0.30	<0.30	0.44	0.51	----
Cyanides										
Cyanide, free	----	E339/WT	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	----
Cyanide, strong acid dissociable (Total)	----	E333/WT	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	----
Cyanide, weak acid dissociable	----	E336/WT	0.0020	mg/L		<0.0020	<0.0020	<0.0020	<0.0020	----
Total Metals										
Aluminum, total	7429-90-5	E420/WT	0.0030	mg/L		<0.0030	<0.0030	1.01	0.762	----
Antimony, total	7440-36-0	E420/WT	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	----
Arsenic, total	7440-38-2	E420/WT	0.00010	mg/L		<0.00010	<0.00010	0.00148	0.00152	----
Barium, total	7440-39-3	E420/WT	0.00010	mg/L		<0.00010	<0.00010	0.0123	0.0110	----
Beryllium, total	7440-41-7	E420/WT	0.000020	mg/L		<0.000020	<0.000020	0.000052	0.000040	----
Bismuth, total	7440-69-9	E420/WT	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	----
Boron, total	7440-42-8	E420/WT	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	----
Cadmium, total	7440-43-9	E420/WT	0.0000050	mg/L		<0.0000050	<0.0000050	0.0000257	0.0000265	----
Calcium, total	7440-70-2	E420/WT	0.050	mg/L		<0.050	<0.050	14.5	15.1	----
Cesium, total	7440-46-2	E420/WT	0.000010	mg/L		<0.000010	<0.000010	0.000101	0.000072	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	TRIP BLANK	FIELD BLANK	WBR-S-04	SW-DUP	----
					Client sampling date / time	07-Jul-2023 00:00	17-Jul-2023 15:00	17-Jul-2023 15:00	17-Jul-2023 00:00	----
Analyte	CAS Number	Method/Lab	LOR	Unit		WT2322070-006	WT2322070-007	WT2322070-008	WT2322070-009	--------
						Result	Result	Result	Result	----
Total Metals										
Chromium, total	7440-47-3	E420/WT	0.00050	mg/L		<0.00050	<0.00050	0.00250	0.00195	----
Cobalt, total	7440-48-4	E420/WT	0.00010	mg/L		<0.00010	<0.00010	0.00059	0.00045	----
Copper, total	7440-50-8	E420/WT	0.00050	mg/L		<0.00050	<0.00050	0.00221	0.00198	----
Iron, total	7439-89-6	E420/WT	0.010	mg/L		<0.010	<0.010	1.51	1.27	----
Lead, total	7439-92-1	E420/WT	0.000050	mg/L		<0.000050	<0.000050	0.000674	0.000551	----
Lithium, total	7439-93-2	E420/WT	0.0010	mg/L		<0.0010	<0.0010	0.0018	0.0014	----
Magnesium, total	7439-95-4	E420/WT	0.0050	mg/L		<0.0050	<0.0050	3.65	3.79	----
Manganese, total	7439-96-5	E420/WT	0.00010	mg/L		<0.00010	<0.00010	0.0807	0.0742	----
Mercury, total	7439-97-6	E508-L/VA	0.50	ng/L		<0.50	<0.50	3.12	2.93	----
Molybdenum, total	7439-98-7	E420/WT	0.000050	mg/L		<0.000050	<0.000050	0.000101	0.000097	----
Nickel, total	7440-02-0	E420/WT	0.00050	mg/L		<0.00050	<0.00050	0.00199	0.00155	----
Phosphorus, total	7723-14-0	E420/WT	0.050	mg/L		<0.050	<0.050	0.051	<0.050	----
Potassium, total	7440-09-7	E420/WT	0.050	mg/L		<0.050	<0.050	0.515	0.453	----
Rubidium, total	7440-17-7	E420/WT	0.00020	mg/L		<0.00020	<0.00020	0.00256	0.00209	----
Selenium, total	7782-49-2	E420/WT	0.000050	mg/L		<0.000050	<0.000050	0.000150	0.000166	----
Silicon, total	7440-21-3	E420/WT	0.10	mg/L		0.22	<0.10	3.21	2.79	----
Silver, total	7440-22-4	E420/WT	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	----
Sodium, total	7440-23-5	E420/WT	0.050	mg/L		<0.050	<0.050	1.28	1.40	----
Strontium, total	7440-24-6	E420/WT	0.00020	mg/L		<0.00020	<0.00020	0.0307	0.0318	----
Sulfur, total	7704-34-9	E420/WT	0.50	mg/L		<0.50	<0.50	<0.50	<0.50	----
Tellurium, total	13494-80-9	E420/WT	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	----
Thallium, total	7440-28-0	E420/WT	0.000010	mg/L		<0.000010	<0.000010	0.000011	<0.000010	----
Thorium, total	7440-29-1	E420/WT	0.00010	mg/L		<0.00010	<0.00010	0.00018	0.00018	----
Tin, total	7440-31-5	E420/WT	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	----
Titanium, total	7440-32-6	E420/WT	0.00030	mg/L		<0.00030	<0.00030	0.0394	0.0295	----
Tungsten, total	7440-33-7	E420/WT	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	----
Uranium, total	7440-61-1	E420/WT	0.000010	mg/L		<0.000010	<0.000010	0.000088	0.000085	----
Vanadium, total	7440-62-2	E420/WT	0.00050	mg/L		<0.00050	<0.00050	0.00250	0.00207	----
Zinc, total	7440-66-6	E420/WT	0.0030	mg/L		<0.0030	<0.0030	0.0072	0.0050	----
Zirconium, total	7440-67-7	E420/WT	0.00020	mg/L		<0.00020	<0.00020	0.00112	0.00106	----
Dissolved Metals										

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	TRIP BLANK	FIELD BLANK	WBR-S-04	SW-DUP	----
					Client sampling date / time	07-Jul-2023 00:00	17-Jul-2023 15:00	17-Jul-2023 15:00	17-Jul-2023 00:00	----
						WT2322070-006	WT2322070-007	WT2322070-008	WT2322070-009	--------
						Result	Result	Result	Result	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/WT	0.0010	mg/L		<0.0010	<0.0010	0.169	0.165	----
Antimony, dissolved	7440-36-0	E421/WT	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	----
Arsenic, dissolved	7440-38-2	E421/WT	0.00010	mg/L		<0.00010	<0.00010	0.00134	0.00128	----
Barium, dissolved	7440-39-3	E421/WT	0.00010	mg/L		<0.00010	<0.00010	0.00635	0.00658	----
Beryllium, dissolved	7440-41-7	E421/WT	0.000020	mg/L		<0.000020	<0.000020	0.000023	<0.000020	----
Bismuth, dissolved	7440-69-9	E421/WT	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	----
Boron, dissolved	7440-42-8	E421/WT	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	----
Cadmium, dissolved	7440-43-9	E421/WT	0.0000050	mg/L		<0.0000050	<0.0000050	0.0000198	0.0000203	----
Calcium, dissolved	7440-70-2	E421/WT	0.050	mg/L		<0.050	<0.050	13.7	14.5	----
Cesium, dissolved	7440-46-2	E421/WT	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	----
Chromium, dissolved	7440-47-3	E421/WT	0.00050	mg/L		<0.00050	<0.00050	0.00072	0.00074	----
Cobalt, dissolved	7440-48-4	E421/WT	0.00010	mg/L		<0.00010	<0.00010	0.00016	0.00015	----
Copper, dissolved	7440-50-8	E421/WT	0.00020	mg/L		<0.00020	<0.00020	0.00139	0.00150	----
Iron, dissolved	7439-89-6	E421/WT	0.010	mg/L		<0.010	<0.010	0.537	0.549	----
Lead, dissolved	7439-92-1	E421/WT	0.000050	mg/L		<0.000050	<0.000050	0.000205	0.000207	----
Lithium, dissolved	7439-93-2	E421/WT	0.0010	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	----
Magnesium, dissolved	7439-95-4	E421/WT	0.0050	mg/L		<0.0050	<0.0050	3.49	3.61	----
Manganese, dissolved	7439-96-5	E421/WT	0.00010	mg/L		<0.00010	<0.00010	0.0609	0.0570	----
Molybdenum, dissolved	7439-98-7	E421/WT	0.000050	mg/L		<0.000050	<0.000050	0.000082	0.000102	----
Nickel, dissolved	7440-02-0	E421/WT	0.00050	mg/L		<0.00050	<0.00050	0.00070	0.00072	----
Phosphorus, dissolved	7723-14-0	E421/WT	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	----
Potassium, dissolved	7440-09-7	E421/WT	0.050	mg/L		<0.050	<0.050	0.241	0.267	----
Rubidium, dissolved	7440-17-7	E421/WT	0.00020	mg/L		<0.00020	<0.00020	0.00088	0.00092	----
Selenium, dissolved	7782-49-2	E421/WT	0.000050	mg/L		<0.000050	<0.000050	0.000151	0.000181	----
Silicon, dissolved	7440-21-3	E421/WT	0.050	mg/L		0.177 RRV	<0.050	1.56	1.64	----
Silver, dissolved	7440-22-4	E421/WT	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	----
Sodium, dissolved	7440-23-5	E421/WT	0.050	mg/L		<0.050	<0.050	1.21	1.34	----
Strontium, dissolved	7440-24-6	E421/WT	0.00020	mg/L		<0.00020	<0.00020	0.0297	0.0315	----
Sulfur, dissolved	7704-34-9	E421/WT	0.50	mg/L		<0.50	<0.50	<0.50	<0.50	----
Tellurium, dissolved	13494-80-9	E421/WT	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	----
Thallium, dissolved	7440-28-0	E421/WT	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	TRIP BLANK	FIELD BLANK	WBR-S-04	SW-DUP	----
					Client sampling date / time	07-Jul-2023 00:00	17-Jul-2023 15:00	17-Jul-2023 15:00	17-Jul-2023 00:00	----
						WT2322070-006	WT2322070-007	WT2322070-008	WT2322070-009	--------
						Result	Result	Result	Result	----
Dissolved Metals										
Thorium, dissolved	7440-29-1	E421/WT	0.00010	mg/L		<0.00010	<0.00010	0.00012	0.00014	----
Tin, dissolved	7440-31-5	E421/WT	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	----
Titanium, dissolved	7440-32-6	E421/WT	0.00030	mg/L		<0.00030	<0.00030	0.00654	0.00656	----
Tungsten, dissolved	7440-33-7	E421/WT	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	----
Uranium, dissolved	7440-61-1	E421/WT	0.000010	mg/L		<0.000010	<0.000010	0.000066	0.000068	----
Vanadium, dissolved	7440-62-2	E421/WT	0.00050	mg/L		<0.00050	<0.00050	0.00089	0.00092	----
Zinc, dissolved	7440-66-6	E421/WT	0.0010	mg/L		<0.0010	<0.0010	0.0023	0.0022	----
Zirconium, dissolved	7440-67-7	E421/WT	0.00030	mg/L		<0.00030	<0.00030	0.00069	0.00074	----
Dissolved metals filtration location	----	EP421/WT	-	-		Field	Field	Field	Field	----
Speciated Metals										
Methylmercury (as MeHg), total	22967-92-6	E536/VA	0.000020	µg/L		<0.000020	<0.000020	0.000105	0.000156	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2322070**	Page	: 1 of 31
Client	: **WSP E&I Canada Limited**	Laboratory	: ALS Environmental - Waterloo
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 6925 Century Avenue Suite #100 Mississauga ON Canada L5N 7K2	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: 905 568 2929 Ext.4140	Telephone	: +1 519 886 6910
Project	: OMEMA2304S	Date Samples Received	: 18-Jul-2023 15:00
PO	: OMEMA2304S.8000.8200.1142.573000	Issue Date	: 04-Aug-2023 13:56
C-O-C number	: ----		
Sampler	: CM/MB/KW/AD		
Site	: CRAWFORD		
Quote number	: OMEMA2304S.2000.2020.1142.573000		
No. of samples received	: 9		
No. of samples analysed	: 9		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Matrix Spike outliers occur.
- Laboratory Control Sample (LCS) outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Laboratory Control Sample (LCS) Recoveries								
Total Metals	QC-1049548-002	----	Iron, total	7439-89-6	E420	125 % MES	80.0-120%	Recovery greater than upper control limit

Result Qualifiers

Qualifier	Description
MES	*Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).*

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] NDR-GERLK	E298	12-Jul-2023	22-Jul-2023	28 days	10 days	✓	24-Jul-2023	18 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] NDR-MARLK	E298	12-Jul-2023	22-Jul-2023	28 days	10 days	✓	24-Jul-2023	18 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] TRIP BLANK	E298	07-Jul-2023	22-Jul-2023	28 days	16 days	✓	24-Jul-2023	12 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] FIELD BLANK	E298	17-Jul-2023	22-Jul-2023	28 days	5 days	✓	24-Jul-2023	23 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] WBR-S-04	E298	17-Jul-2023	22-Jul-2023	28 days	5 days	✓	24-Jul-2023	23 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] SW-DUP	E298	17-Jul-2023	22-Jul-2023	28 days	6 days	✓	24-Jul-2023	22 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] NDR-SUTLK	E298	14-Jul-2023	22-Jul-2023	28 days	8 days	✓	24-Jul-2023	20 days	2 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP]										
WBR-P-04	E298	14-Jul-2023	22-Jul-2023	28 days	8 days	✓	24-Jul-2023	20 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP]										
NDR-DVSLK	E298	13-Jul-2023	22-Jul-2023	28 days	9 days	✓	24-Jul-2023	19 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
TRIP BLANK	E235.Br	07-Jul-2023	21-Jul-2023	28 days	14 days	✓	21-Jul-2023	14 days	0 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
FIELD BLANK	E235.Br	17-Jul-2023	21-Jul-2023	28 days	4 days	✓	21-Jul-2023	24 days	0 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
SW-DUP	E235.Br	17-Jul-2023	21-Jul-2023	28 days	4 days	✓	21-Jul-2023	24 days	0 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
WBR-S-04	E235.Br	17-Jul-2023	21-Jul-2023	28 days	4 days	✓	21-Jul-2023	24 days	0 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
NDR-SUTLK	E235.Br	14-Jul-2023	21-Jul-2023	28 days	7 days	✓	21-Jul-2023	21 days	0 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
WBR-P-04	E235.Br	14-Jul-2023	21-Jul-2023	28 days	7 days	✓	21-Jul-2023	21 days	0 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
NDR-DVSLK	E235.Br	13-Jul-2023	21-Jul-2023	28 days	8 days	✓	21-Jul-2023	20 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
NDR-GERLK	E235.Br	12-Jul-2023	21-Jul-2023	28 days	9 days	✓	21-Jul-2023	19 days	0 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
NDR-MARLK	E235.Br	12-Jul-2023	21-Jul-2023	28 days	9 days	✓	21-Jul-2023	19 days	0 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
TRIP BLANK	E235.Cl	07-Jul-2023	21-Jul-2023	28 days	14 days	✓	21-Jul-2023	14 days	0 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
FIELD BLANK	E235.Cl	17-Jul-2023	21-Jul-2023	28 days	4 days	✓	21-Jul-2023	24 days	0 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
SW-DUP	E235.Cl	17-Jul-2023	21-Jul-2023	28 days	4 days	✓	21-Jul-2023	24 days	0 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
WBR-S-04	E235.Cl	17-Jul-2023	21-Jul-2023	28 days	4 days	✓	21-Jul-2023	24 days	0 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
NDR-SUTLK	E235.Cl	14-Jul-2023	21-Jul-2023	28 days	7 days	✓	21-Jul-2023	21 days	0 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
WBR-P-04	E235.Cl	14-Jul-2023	21-Jul-2023	28 days	7 days	✓	21-Jul-2023	21 days	0 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
NDR-DVSLK	E235.Cl	13-Jul-2023	21-Jul-2023	28 days	8 days	✓	21-Jul-2023	20 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
NDR-GERLK	E235.Cl	12-Jul-2023	21-Jul-2023	28 days	9 days	✓	21-Jul-2023	19 days	0 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
NDR-MARLK	E235.Cl	12-Jul-2023	21-Jul-2023	28 days	9 days	✓	21-Jul-2023	19 days	0 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
TRIP BLANK	E235.F	07-Jul-2023	21-Jul-2023	28 days	14 days	✓	21-Jul-2023	14 days	0 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
FIELD BLANK	E235.F	17-Jul-2023	21-Jul-2023	28 days	4 days	✓	21-Jul-2023	24 days	0 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
SW-DUP	E235.F	17-Jul-2023	21-Jul-2023	28 days	4 days	✓	21-Jul-2023	24 days	0 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
WBR-S-04	E235.F	17-Jul-2023	21-Jul-2023	28 days	4 days	✓	21-Jul-2023	24 days	0 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
NDR-SUTLK	E235.F	14-Jul-2023	21-Jul-2023	28 days	7 days	✓	21-Jul-2023	21 days	0 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
WBR-P-04	E235.F	14-Jul-2023	21-Jul-2023	28 days	7 days	✓	21-Jul-2023	21 days	0 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
NDR-DVSLK	E235.F	13-Jul-2023	21-Jul-2023	28 days	8 days	✓	21-Jul-2023	20 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-GERLK	E235.F	12-Jul-2023	21-Jul-2023	28 days	9 days	✓	21-Jul-2023	19 days	0 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] NDR-MARLK	E235.F	12-Jul-2023	21-Jul-2023	28 days	9 days	✓	21-Jul-2023	19 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] TRIP BLANK	E235.NO3	07-Jul-2023	21-Jul-2023	7 days	14 days	× EHTR	21-Jul-2023	-7 days	0 days	× UCP
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] FIELD BLANK	E235.NO3	17-Jul-2023	21-Jul-2023	7 days	4 days	✓	21-Jul-2023	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] SW-DUP	E235.NO3	17-Jul-2023	21-Jul-2023	7 days	4 days	✓	21-Jul-2023	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] WBR-S-04	E235.NO3	17-Jul-2023	21-Jul-2023	7 days	4 days	✓	21-Jul-2023	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-SUTLK	E235.NO3	14-Jul-2023	21-Jul-2023	7 days	7 days	✓	21-Jul-2023	0 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] WBR-P-04	E235.NO3	14-Jul-2023	21-Jul-2023	7 days	7 days	✓	21-Jul-2023	0 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] NDR-DVSLK	E235.NO3	13-Jul-2023	21-Jul-2023	7 days	8 days	× EHT	21-Jul-2023	-1 days	0 days	× UCP

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
NDR-GERLK	E235.NO3	12-Jul-2023	21-Jul-2023	7 days	9 days	× EHT	21-Jul-2023	-2 days	0 days	× UCP
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
NDR-MARLK	E235.NO3	12-Jul-2023	21-Jul-2023	7 days	9 days	× EHT	21-Jul-2023	-2 days	0 days	× UCP
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
TRIP BLANK	E235.NO2	07-Jul-2023	21-Jul-2023	7 days	14 days	× EHTR	21-Jul-2023	-7 days	0 days	× UCP
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
FIELD BLANK	E235.NO2	17-Jul-2023	21-Jul-2023	7 days	4 days	✓	21-Jul-2023	3 days	0 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
SW-DUP	E235.NO2	17-Jul-2023	21-Jul-2023	7 days	4 days	✓	21-Jul-2023	3 days	0 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
WBR-S-04	E235.NO2	17-Jul-2023	21-Jul-2023	7 days	4 days	✓	21-Jul-2023	3 days	0 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
NDR-SUTLK	E235.NO2	14-Jul-2023	21-Jul-2023	7 days	7 days	✓	21-Jul-2023	0 days	0 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
WBR-P-04	E235.NO2	14-Jul-2023	21-Jul-2023	7 days	7 days	✓	21-Jul-2023	0 days	0 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
NDR-DVSLK	E235.NO2	13-Jul-2023	21-Jul-2023	7 days	8 days	× EHT	21-Jul-2023	-1 days	0 days	× UCP

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
NDR-GERLK	E235.NO2	12-Jul-2023	21-Jul-2023	7 days	9 days	✗ EHT	21-Jul-2023	-2 days	0 days	✗ UCP
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
NDR-MARLK	E235.NO2	12-Jul-2023	21-Jul-2023	7 days	9 days	✗ EHT	21-Jul-2023	-2 days	0 days	✗ UCP
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
TRIP BLANK	E235.SO4	07-Jul-2023	21-Jul-2023	28 days	14 days	✓	21-Jul-2023	14 days	0 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
FIELD BLANK	E235.SO4	17-Jul-2023	21-Jul-2023	28 days	4 days	✓	21-Jul-2023	24 days	0 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
SW-DUP	E235.SO4	17-Jul-2023	21-Jul-2023	28 days	4 days	✓	21-Jul-2023	24 days	0 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
WBR-S-04	E235.SO4	17-Jul-2023	21-Jul-2023	28 days	4 days	✓	21-Jul-2023	24 days	0 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
NDR-SUTLK	E235.SO4	14-Jul-2023	21-Jul-2023	28 days	7 days	✓	21-Jul-2023	21 days	0 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
WBR-P-04	E235.SO4	14-Jul-2023	21-Jul-2023	28 days	7 days	✓	21-Jul-2023	21 days	0 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
NDR-DVSLK	E235.SO4	13-Jul-2023	21-Jul-2023	28 days	8 days	✓	21-Jul-2023	20 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
NDR-GERLK	E235.SO4	12-Jul-2023	21-Jul-2023	28 days	9 days	✓	21-Jul-2023	19 days	0 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
NDR-MARLK	E235.SO4	12-Jul-2023	21-Jul-2023	28 days	9 days	✓	21-Jul-2023	19 days	0 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
NDR-SUTLK	E372-U	14-Jul-2023	24-Jul-2023	28 days	10 days	✓	25-Jul-2023	18 days	1 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
WBR-P-04	E372-U	14-Jul-2023	24-Jul-2023	28 days	10 days	✓	25-Jul-2023	18 days	1 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
NDR-DVSLK	E372-U	13-Jul-2023	24-Jul-2023	28 days	11 days	✓	25-Jul-2023	17 days	1 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
NDR-GERLK	E372-U	12-Jul-2023	24-Jul-2023	28 days	12 days	✓	25-Jul-2023	16 days	1 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
NDR-MARLK	E372-U	12-Jul-2023	24-Jul-2023	28 days	12 days	✓	25-Jul-2023	16 days	1 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
TRIP BLANK	E372-U	07-Jul-2023	24-Jul-2023	28 days	18 days	✓	25-Jul-2023	10 days	1 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
FIELD BLANK	E372-U	17-Jul-2023	24-Jul-2023	28 days	7 days	✓	25-Jul-2023	21 days	1 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
WBR-S-04	E372-U	17-Jul-2023	24-Jul-2023	28 days	7 days	✓	25-Jul-2023	21 days	1 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) [ON MECP]										
SW-DUP	E372-U	17-Jul-2023	24-Jul-2023	28 days	8 days	✓	25-Jul-2023	20 days	1 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
TRIP BLANK	E339	07-Jul-2023	21-Jul-2023	14 days	14 days	✓	21-Jul-2023	0 days	0 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
FIELD BLANK	E339	17-Jul-2023	21-Jul-2023	14 days	4 days	✓	21-Jul-2023	10 days	0 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
SW-DUP	E339	17-Jul-2023	21-Jul-2023	14 days	4 days	✓	21-Jul-2023	10 days	0 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
WBR-S-04	E339	17-Jul-2023	21-Jul-2023	14 days	4 days	✓	21-Jul-2023	10 days	0 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
NDR-SUTLK	E339	14-Jul-2023	21-Jul-2023	14 days	7 days	✓	21-Jul-2023	7 days	0 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
WBR-P-04	E339	14-Jul-2023	21-Jul-2023	14 days	7 days	✓	21-Jul-2023	7 days	0 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide)										
NDR-DVSLK	E339	13-Jul-2023	21-Jul-2023	14 days	8 days	✓	21-Jul-2023	6 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide) NDR-GERLK	E339	12-Jul-2023	21-Jul-2023	14 days	9 days	✓	21-Jul-2023	5 days	0 days	✓
Cyanides : Free Cyanide										
HDPE - total (sodium hydroxide) NDR-MARLK	E339	12-Jul-2023	21-Jul-2023	14 days	9 days	✓	21-Jul-2023	5 days	0 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide) TRIP BLANK	E333	07-Jul-2023	21-Jul-2023	14 days	14 days	✓	21-Jul-2023	0 days	0 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide) FIELD BLANK	E333	17-Jul-2023	21-Jul-2023	14 days	4 days	✓	21-Jul-2023	10 days	0 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide) SW-DUP	E333	17-Jul-2023	21-Jul-2023	14 days	4 days	✓	21-Jul-2023	10 days	0 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide) WBR-S-04	E333	17-Jul-2023	21-Jul-2023	14 days	4 days	✓	21-Jul-2023	10 days	0 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide) NDR-SUTLK	E333	14-Jul-2023	21-Jul-2023	14 days	7 days	✓	21-Jul-2023	7 days	0 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide) WBR-P-04	E333	14-Jul-2023	21-Jul-2023	14 days	7 days	✓	21-Jul-2023	7 days	0 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide) NDR-DVSLK	E333	13-Jul-2023	21-Jul-2023	14 days	8 days	✓	21-Jul-2023	6 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide) NDR-GERLK	E333	12-Jul-2023	21-Jul-2023	14 days	9 days	✓	21-Jul-2023	5 days	0 days	✓
Cyanides : Total Cyanide										
HDPE - total (sodium hydroxide) NDR-MARLK	E333	12-Jul-2023	21-Jul-2023	14 days	9 days	✓	21-Jul-2023	5 days	0 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) TRIP BLANK	E336	07-Jul-2023	21-Jul-2023	14 days	14 days	✓	21-Jul-2023	0 days	0 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) FIELD BLANK	E336	17-Jul-2023	21-Jul-2023	14 days	4 days	✓	21-Jul-2023	10 days	0 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) SW-DUP	E336	17-Jul-2023	21-Jul-2023	14 days	4 days	✓	21-Jul-2023	10 days	0 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) WBR-S-04	E336	17-Jul-2023	21-Jul-2023	14 days	4 days	✓	21-Jul-2023	10 days	0 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) NDR-SUTLK	E336	14-Jul-2023	21-Jul-2023	14 days	7 days	✓	21-Jul-2023	7 days	0 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) WBR-P-04	E336	14-Jul-2023	21-Jul-2023	14 days	7 days	✓	21-Jul-2023	7 days	0 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) NDR-DVSLK	E336	13-Jul-2023	21-Jul-2023	14 days	8 days	✓	21-Jul-2023	6 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) NDR-GERLK	E336	12-Jul-2023	21-Jul-2023	14 days	9 days	✓	21-Jul-2023	5 days	0 days	✓
Cyanides : WAD Cyanide										
HDPE - total (sodium hydroxide) NDR-MARLK	E336	12-Jul-2023	21-Jul-2023	14 days	9 days	✓	21-Jul-2023	5 days	0 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) TRIP BLANK	E421	07-Jul-2023	21-Jul-2023	180 days	14 days	✓	21-Jul-2023	166 days	0 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) FIELD BLANK	E421	17-Jul-2023	21-Jul-2023	180 days	4 days	✓	21-Jul-2023	176 days	0 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SW-DUP	E421	17-Jul-2023	21-Jul-2023	180 days	4 days	✓	21-Jul-2023	176 days	0 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) WBR-S-04	E421	17-Jul-2023	21-Jul-2023	180 days	4 days	✓	21-Jul-2023	176 days	0 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDR-SUTLK	E421	14-Jul-2023	21-Jul-2023	180 days	6 days	✓	21-Jul-2023	174 days	0 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDR-DVSLK	E421	13-Jul-2023	21-Jul-2023	180 days	7 days	✓	21-Jul-2023	173 days	0 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) WBR-P-04	E421	14-Jul-2023	21-Jul-2023	180 days	7 days	✓	21-Jul-2023	173 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDR-GERLK	E421	12-Jul-2023	21-Jul-2023	180 days	8 days	✓	21-Jul-2023	172 days	0 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) NDR-MARLK	E421	12-Jul-2023	21-Jul-2023	180 days	9 days	✓	21-Jul-2023	171 days	0 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] TRIP BLANK	E283	07-Jul-2023	21-Jul-2023	14 days	14 days	✓	21-Jul-2023	0 days	0 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] FIELD BLANK	E283	17-Jul-2023	21-Jul-2023	14 days	4 days	✓	21-Jul-2023	10 days	0 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] SW-DUP	E283	17-Jul-2023	21-Jul-2023	14 days	4 days	✓	21-Jul-2023	10 days	0 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] WBR-S-04	E283	17-Jul-2023	21-Jul-2023	14 days	4 days	✓	21-Jul-2023	10 days	0 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-SUTLK	E283	14-Jul-2023	21-Jul-2023	14 days	7 days	✓	21-Jul-2023	7 days	0 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] WBR-P-04	E283	14-Jul-2023	21-Jul-2023	14 days	7 days	✓	21-Jul-2023	7 days	0 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-DVSLK	E283	13-Jul-2023	21-Jul-2023	14 days	8 days	✓	21-Jul-2023	6 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-GERLK	E283	12-Jul-2023	21-Jul-2023	14 days	9 days	✓	21-Jul-2023	5 days	0 days	✓
Physical Tests : Acidity by Titration										
HDPE [ON MECP] NDR-MARLK	E283	12-Jul-2023	21-Jul-2023	14 days	9 days	✓	21-Jul-2023	5 days	0 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] TRIP BLANK	E290	07-Jul-2023	21-Jul-2023	14 days	14 days	✓	21-Jul-2023	0 days	0 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] FIELD BLANK	E290	17-Jul-2023	21-Jul-2023	14 days	4 days	✓	21-Jul-2023	10 days	0 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] SW-DUP	E290	17-Jul-2023	21-Jul-2023	14 days	4 days	✓	21-Jul-2023	10 days	0 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] WBR-S-04	E290	17-Jul-2023	21-Jul-2023	14 days	4 days	✓	21-Jul-2023	10 days	0 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-SUTLK	E290	14-Jul-2023	21-Jul-2023	14 days	7 days	✓	21-Jul-2023	7 days	0 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] WBR-P-04	E290	14-Jul-2023	21-Jul-2023	14 days	7 days	✓	21-Jul-2023	7 days	0 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-DVSLK	E290	13-Jul-2023	21-Jul-2023	14 days	8 days	✓	21-Jul-2023	6 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-GERLK	E290	12-Jul-2023	21-Jul-2023	14 days	9 days	✓	21-Jul-2023	5 days	0 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] NDR-MARLK	E290	12-Jul-2023	21-Jul-2023	14 days	9 days	✓	21-Jul-2023	5 days	0 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] TRIP BLANK	E100	07-Jul-2023	21-Jul-2023	28 days	14 days	✓	21-Jul-2023	14 days	0 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] FIELD BLANK	E100	17-Jul-2023	21-Jul-2023	28 days	4 days	✓	21-Jul-2023	24 days	0 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] SW-DUP	E100	17-Jul-2023	21-Jul-2023	28 days	4 days	✓	21-Jul-2023	24 days	0 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] WBR-S-04	E100	17-Jul-2023	21-Jul-2023	28 days	4 days	✓	21-Jul-2023	24 days	0 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-SUTLK	E100	14-Jul-2023	21-Jul-2023	28 days	7 days	✓	21-Jul-2023	21 days	0 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] WBR-P-04	E100	14-Jul-2023	21-Jul-2023	28 days	7 days	✓	21-Jul-2023	21 days	0 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-DVSLK	E100	13-Jul-2023	21-Jul-2023	28 days	8 days	✓	21-Jul-2023	20 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-GERLK	E100	12-Jul-2023	21-Jul-2023	28 days	9 days	✓	21-Jul-2023	19 days	0 days	✓
Physical Tests : Conductivity in Water										
HDPE [ON MECP] NDR-MARLK	E100	12-Jul-2023	21-Jul-2023	28 days	9 days	✓	21-Jul-2023	19 days	0 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] TRIP BLANK	E108	07-Jul-2023	21-Jul-2023	14 days	14 days	✓	21-Jul-2023	0 days	0 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] FIELD BLANK	E108	17-Jul-2023	21-Jul-2023	14 days	4 days	✓	21-Jul-2023	10 days	0 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] SW-DUP	E108	17-Jul-2023	21-Jul-2023	14 days	4 days	✓	21-Jul-2023	10 days	0 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] WBR-S-04	E108	17-Jul-2023	21-Jul-2023	14 days	4 days	✓	21-Jul-2023	10 days	0 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-SUTLK	E108	14-Jul-2023	21-Jul-2023	14 days	7 days	✓	21-Jul-2023	7 days	0 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] WBR-P-04	E108	14-Jul-2023	21-Jul-2023	14 days	7 days	✓	21-Jul-2023	7 days	0 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-DVSLK	E108	13-Jul-2023	21-Jul-2023	14 days	8 days	✓	21-Jul-2023	6 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-GERLK	E108	12-Jul-2023	21-Jul-2023	14 days	9 days	✓	21-Jul-2023	5 days	0 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] NDR-MARLK	E108	12-Jul-2023	21-Jul-2023	14 days	9 days	✓	21-Jul-2023	5 days	0 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] TRIP BLANK	E162	07-Jul-2023	----	----	----		21-Jul-2023	7 days	15 days	× EHTR
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] FIELD BLANK	E162	17-Jul-2023	----	----	----		21-Jul-2023	7 days	4 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] WBR-S-04	E162	17-Jul-2023	----	----	----		21-Jul-2023	7 days	4 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] SW-DUP	E162	17-Jul-2023	----	----	----		21-Jul-2023	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-SUTLK	E162	14-Jul-2023	----	----	----		21-Jul-2023	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] WBR-P-04	E162	14-Jul-2023	----	----	----		21-Jul-2023	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-DVSLK	E162	13-Jul-2023	----	----	----		21-Jul-2023	7 days	8 days	× EHT

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-GERLK	E162	12-Jul-2023	----	----	----		21-Jul-2023	7 days	9 days	× EHT
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] NDR-MARLK	E162	12-Jul-2023	----	----	----		21-Jul-2023	7 days	9 days	× EHT
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] TRIP BLANK	E160	07-Jul-2023	----	----	----		21-Jul-2023	7 days	15 days	× EHTR
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] FIELD BLANK	E160	17-Jul-2023	----	----	----		21-Jul-2023	7 days	4 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] WBR-S-04	E160	17-Jul-2023	----	----	----		21-Jul-2023	7 days	4 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] SW-DUP	E160	17-Jul-2023	----	----	----		21-Jul-2023	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-SUTLK	E160	14-Jul-2023	----	----	----		21-Jul-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] WBR-P-04	E160	14-Jul-2023	----	----	----		21-Jul-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-DVSLK	E160	13-Jul-2023	----	----	----		21-Jul-2023	7 days	8 days	× EHT

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-GERLK	E160	12-Jul-2023	----	----	----		21-Jul-2023	7 days	9 days	× EHT
Physical Tests : TSS by Gravimetry										
HDPE [ON MECP] NDR-MARLK	E160	12-Jul-2023	----	----	----		21-Jul-2023	7 days	9 days	× EHT
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid) FIELD BLANK	E536	17-Jul-2023	01-Aug-2023	180 days	15 days	✓	02-Aug-2023	165 days	1 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid) WBR-S-04	E536	17-Jul-2023	01-Aug-2023	180 days	15 days	✓	02-Aug-2023	165 days	1 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid) SW-DUP	E536	17-Jul-2023	01-Aug-2023	180 days	16 days	✓	02-Aug-2023	164 days	1 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid) NDR-SUTLK	E536	14-Jul-2023	01-Aug-2023	180 days	18 days	✓	02-Aug-2023	162 days	1 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid) WBR-P-04	E536	14-Jul-2023	01-Aug-2023	180 days	18 days	✓	02-Aug-2023	162 days	1 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid) NDR-DVSLK	E536	13-Jul-2023	01-Aug-2023	180 days	19 days	✓	02-Aug-2023	161 days	1 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid) NDR-GERLK	E536	12-Jul-2023	01-Aug-2023	180 days	20 days	✓	02-Aug-2023	160 days	1 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid) NDR-MARLK	E536	12-Jul-2023	01-Aug-2023	180 days	20 days	✓	02-Aug-2023	160 days	1 days	✓
Speciated Metals : Total Methylmercury in Water by GCAFS										
Amber glass total (hydrochloric acid) TRIP BLANK	E536	07-Jul-2023	01-Aug-2023	180 days	26 days	✓	02-Aug-2023	154 days	1 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved) SW-DUP	E508-L	17-Jul-2023	26-Jul-2023	28 days	10 days	✓	26-Jul-2023	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved) NDR-SUTLK	E508-L	14-Jul-2023	26-Jul-2023	28 days	12 days	✓	26-Jul-2023	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved) WBR-P-04	E508-L	14-Jul-2023	26-Jul-2023	28 days	12 days	✓	26-Jul-2023	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved) NDR-DVSLK	E508-L	13-Jul-2023	26-Jul-2023	28 days	13 days	✓	26-Jul-2023	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved) NDR-GERLK	E508-L	12-Jul-2023	26-Jul-2023	28 days	14 days	✓	26-Jul-2023	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved) NDR-MARLK	E508-L	12-Jul-2023	26-Jul-2023	28 days	14 days	✓	26-Jul-2023	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved) TRIP BLANK	E508-L	07-Jul-2023	26-Jul-2023	28 days	20 days	✓	26-Jul-2023	28 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved)										
FIELD BLANK	E508-L	17-Jul-2023	26-Jul-2023	28 days	9 days	✓	26-Jul-2023	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned FLPE - total (lab preserved)										
WBR-S-04	E508-L	17-Jul-2023	26-Jul-2023	28 days	9 days	✓	26-Jul-2023	28 days	0 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
TRIP BLANK	E420	07-Jul-2023	21-Jul-2023	180 days	14 days	✓	21-Jul-2023	166 days	0 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
FIELD BLANK	E420	17-Jul-2023	21-Jul-2023	180 days	4 days	✓	21-Jul-2023	176 days	0 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
SW-DUP	E420	17-Jul-2023	21-Jul-2023	180 days	4 days	✓	21-Jul-2023	176 days	0 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
WBR-S-04	E420	17-Jul-2023	21-Jul-2023	180 days	4 days	✓	21-Jul-2023	176 days	0 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
NDR-SUTLK	E420	14-Jul-2023	21-Jul-2023	180 days	7 days	✓	21-Jul-2023	173 days	0 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
WBR-P-04	E420	14-Jul-2023	21-Jul-2023	180 days	7 days	✓	21-Jul-2023	173 days	0 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
NDR-DVSLK	E420	13-Jul-2023	21-Jul-2023	180 days	8 days	✓	21-Jul-2023	172 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
NDR-GERLK	E420	12-Jul-2023	21-Jul-2023	180 days	9 days	✓	21-Jul-2023	171 days	0 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
NDR-MARLK	E420	12-Jul-2023	21-Jul-2023	180 days	9 days	✓	21-Jul-2023	171 days	0 days	✓

Legend & Qualifier Definitions

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

UCP: Unsuitable Container and/or Preservative used (invalidates standard hold time). Maximum hold time of zero applied. Test results may be biased low / unreliable, and may not meet regulatory requirements.

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Acidity by Titration	E283	1049498	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	1049351	1	18	5.5	5.0	✓
Ammonia by Fluorescence	E298	1050570	1	19	5.2	5.0	✓
Bromide in Water by IC	E235.Br	1049353	1	10	10.0	5.0	✓
Chloride in Water by IC	E235.Cl	1049357	1	20	5.0	5.0	✓
Conductivity in Water	E100	1049350	1	11	9.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1048976	2	37	5.4	5.0	✓
Fluoride in Water by IC	E235.F	1049358	1	10	10.0	5.0	✓
Free Cyanide	E339	1049588	1	9	11.1	5.0	✓
Nitrate in Water by IC	E235.NO3	1049354	1	20	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2	1049355	1	20	5.0	5.0	✓
pH by Meter	E108	1049352	1	11	9.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1049356	1	19	5.2	5.0	✓
TDS by Gravimetry	E162	1050104	1	20	5.0	5.0	✓
Total Cyanide	E333	1049586	1	14	7.1	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1056620	1	18	5.5	5.0	✓
Total metals in Water by CRC ICPMS	E420	1049548	1	20	5.0	5.0	✓
Total Methylmercury in Water by GCAFS	E536	1061736	2	28	7.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1050569	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	1050105	1	20	5.0	4.7	✓
WAD Cyanide	E336	1049587	1	9	11.1	5.0	✓
Laboratory Control Samples (LCS)							
Acidity by Titration	E283	1049498	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	1049351	1	18	5.5	5.0	✓
Ammonia by Fluorescence	E298	1050570	1	19	5.2	5.0	✓
Bromide in Water by IC	E235.Br	1049353	1	10	10.0	5.0	✓
Chloride in Water by IC	E235.Cl	1049357	1	20	5.0	5.0	✓
Conductivity in Water	E100	1049350	1	11	9.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1048976	2	37	5.4	5.0	✓
Fluoride in Water by IC	E235.F	1049358	1	10	10.0	5.0	✓
Free Cyanide	E339	1049588	1	9	11.1	5.0	✓
Nitrate in Water by IC	E235.NO3	1049354	1	20	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2	1049355	1	20	5.0	5.0	✓
pH by Meter	E108	1049352	1	11	9.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1049356	1	19	5.2	5.0	✓
TDS by Gravimetry	E162	1050104	1	20	5.0	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Total Cyanide	E333	1049586	1	14	7.1	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1056620	1	18	5.5	5.0	✓
Total metals in Water by CRC ICPMS	E420	1049548	1	20	5.0	5.0	✓
Total Methylmercury in Water by GCAFS	E536	1061736	2	28	7.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1050569	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	1050105	1	20	5.0	4.7	✓
WAD Cyanide	E336	1049587	1	9	11.1	5.0	✓
Method Blanks (MB)							
Acidity by Titration	E283	1049498	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	1049351	1	18	5.5	5.0	✓
Ammonia by Fluorescence	E298	1050570	1	19	5.2	5.0	✓
Bromide in Water by IC	E235.Br	1049353	1	10	10.0	5.0	✓
Chloride in Water by IC	E235.Cl	1049357	1	20	5.0	5.0	✓
Conductivity in Water	E100	1049350	1	11	9.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1048976	2	37	5.4	5.0	✓
Fluoride in Water by IC	E235.F	1049358	1	10	10.0	5.0	✓
Free Cyanide	E339	1049588	1	9	11.1	5.0	✓
Nitrate in Water by IC	E235.NO3	1049354	1	20	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2	1049355	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1049356	1	19	5.2	5.0	✓
TDS by Gravimetry	E162	1050104	1	20	5.0	5.0	✓
Total Cyanide	E333	1049586	1	14	7.1	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1056620	1	18	5.5	5.0	✓
Total metals in Water by CRC ICPMS	E420	1049548	1	20	5.0	5.0	✓
Total Methylmercury in Water by GCAFS	E536	1061736	2	28	7.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1050569	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	1050105	1	20	5.0	4.7	✓
WAD Cyanide	E336	1049587	1	9	11.1	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1050570	1	19	5.2	5.0	✓
Bromide in Water by IC	E235.Br	1049353	1	10	10.0	5.0	✓
Chloride in Water by IC	E235.Cl	1049357	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1048976	2	37	5.4	5.0	✓
Fluoride in Water by IC	E235.F	1049358	1	10	10.0	5.0	✓
Free Cyanide	E339	1049588	1	9	11.1	5.0	✓
Nitrate in Water by IC	E235.NO3	1049354	1	20	5.0	5.0	✓
Nitrite in Water by IC	E235.NO2	1049355	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1049356	1	19	5.2	5.0	✓
Total Cyanide	E333	1049586	1	14	7.1	5.0	✓

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	1056620	1	18	5.5	5.0	✓
Total metals in Water by CRC ICPMS	E420	1049548	1	20	5.0	5.0	✓
Total Methylmercury in Water by GCAFS	E536	1061736	2	28	7.1	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1050569	1	20	5.0	5.0	✓
WAD Cyanide	E336	1049587	1	9	11.1	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Waterloo	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Waterloo	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry	E160 ALS Environmental - Waterloo	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 ALS Environmental - Waterloo	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC	E235.Br ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC	E235.NO2 ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC	E235.NO3 ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Sulfate in Water by IC	E235.SO4 ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 ALS Environmental - Waterloo	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3
Alkalinity Species by Titration	E290 ALS Environmental - Waterloo	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Waterloo	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Cyanide	E333 ALS Environmental - Waterloo	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336 ALS Environmental - Waterloo	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339 ALS Environmental - Waterloo	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U ALS Environmental - Waterloo	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total metals in Water by CRC ICPMS	E420 ALS Environmental - Waterloo	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Waterloo	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L ALS Environmental - Vancouver	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Total Methylmercury in Water by GCAFS	E536 ALS Environmental - Vancouver	Water	EPA 1630 (mod)	This method follows Method 1630 of the US EPA. Samples are distilled under an inert gas flow to isolate methylmercury and minimize matrix interferences. The distillate is analyzed by aqueous phase ethylation, purge and trap, desorption and GC separation. The separated species are then pyrolized to elemental Hg and quantified by cold vapour atomic flourescence spectroscopy. Results are reported "as MeHg".
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Waterloo	Water	APHA 2340B	“Hardness (as CaCO3), dissolved” is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. “Total Hardness” refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Waterloo	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Waterloo	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 ALS Environmental - Waterloo	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Total Methylmercury Water Preparation	EP536 ALS Environmental - Vancouver	Water	EPA 1630	This method follows Method 1630 of the US EPA. Samples are distilled under an inert gas flow to isolate methylmercury and minimize matrix interferences. The distillate is analyzed by aqueous phase ethylation, purge and trap, desorption and GC separation. The separated species are then pyrolized to elemental Hg and quantified by cold vapour atomic flourescence spectroscopy. Results are reported "as MeHg".

QUALITY CONTROL REPORT

Work Order	: **WT2322070**	Page	: 1 of 22
Client	: WSP E&I Canada Limited	Laboratory	: ALS Environmental - Waterloo
Contact	: Dale Klodnicki	Account Manager	: Gayle Braun
Address	: 6925 Century Avenue Suite #100 Mississauga ON Canada L5N 7K2	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	:	Telephone	: +1 519 886 6910
Project	: OMEMA2304S	Date Samples Received	: 18-Jul-2023 15:00
PO	: OMEMA2304S.8000.8200.1142.573000	Date Analysis Commenced	: 21-Jul-2023
C-O-C number	: ----	Issue Date	: 04-Aug-2023 13:56
Sampler	: CM/MB/KW/AD 905 568 2929 Ext.4140		
Site	: CRAWFORD		
Quote number	: OMEMA2304S.2000.2020.1142.573000		
No. of samples received	: 9		
No. of samples analysed	: 9		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Greg Pokocky	Manager - Inorganics	Waterloo Inorganics, Waterloo, Ontario
Greg Pokocky	Manager - Inorganics	Waterloo Metals, Waterloo, Ontario
Kinny Wu	Lab Analyst	Vancouver Metals, Burnaby, British Columbia
Parnian Sane	Analyst	Vancouver Metals, Burnaby, British Columbia
Walt Kippenhuck	Supervisor - Inorganic	Waterloo Inorganics, Waterloo, Ontario
Wayne Smith	Client Services Specialist	Waterloo Metals, Waterloo, Ontario

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 1049350)											
WT2322070-002	NDR-DVSLK	Conductivity	----	E100	1.0	µS/cm	225	224	0.445%	10%	----
Physical Tests (QC Lot: 1049351)											
WT2322070-002	NDR-DVSLK	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	116	118	1.04%	20%	----
Physical Tests (QC Lot: 1049352)											
WT2322070-002	NDR-DVSLK	pH	----	E108	0.10	pH units	8.43	8.43	0.00%	4%	----
Physical Tests (QC Lot: 1049498)											
WT2322070-001	WBR-P-04	Acidity (as CaCO3)	----	E283	2.0	mg/L	7.7	6.7	1.0	Diff <2x LOR	----
Physical Tests (QC Lot: 1050104)											
WT2322072-010	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	189	193	4	Diff <2x LOR	----
Physical Tests (QC Lot: 1050105)											
WT2322072-010	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	6.9	6.7	0.2	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1049353)											
WT2322070-001	WBR-P-04	Bromide	24959-67-9	E235.Br	0.10	mg/L	<0.10	<0.10	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1049354)											
WT2322070-001	WBR-P-04	Nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1049355)											
WT2322070-001	WBR-P-04	Nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1049356)											
WT2322070-001	WBR-P-04	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	<0.30	<0.30	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1049357)											
WT2322070-001	WBR-P-04	Chloride	16887-00-6	E235.Cl	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1049358)											
WT2322070-001	WBR-P-04	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.022	0.022	0.00003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1050569)											
HA2300420-002	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0040	mg/L	1.48	1.48	0.0586%	20%	----
Anions and Nutrients (QC Lot: 1050570)											
HA2300420-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.250	mg/L	7.64	7.64	0.105%	20%	----
Cyanides (QC Lot: 1049586)											
WT2322070-001	WBR-P-04	Cyanide, strong acid dissociable (Total)	----	E333	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Cyanides (QC Lot: 1049587)											
WT2322070-001	WBR-P-04	Cyanide, weak acid dissociable	----	E336	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Cyanides (QC Lot: 1049588)											
WT2322070-001	WBR-P-04	Cyanide, free	----	E339	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Total Metals (QC Lot: 1049548)											
WT2322070-001	WBR-P-04	Aluminum, total	7429-90-5	E420	0.0030	mg/L	0.346	0.333	3.77%	20%	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00092	0.00096	0.00004	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.00688	0.00699	1.55%	20%	----
		Beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000148	0.0000177	0.0000029	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	6.61	6.58	0.345%	20%	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.000033	0.000034	0.0000009	Diff <2x LOR	----
		Chromium, total	7440-47-3	E420	0.00050	mg/L	0.00113	0.00092	0.00021	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	0.00027	0.00028	0.00001	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00050	mg/L	0.00056	0.00056	0.000007	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.010	mg/L	0.607	0.599	1.32%	20%	----
		Lead, total	7439-92-1	E420	0.000050	mg/L	0.000311	0.000309	0.000002	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	1.94	1.91	1.62%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.0343	0.0346	0.820%	20%	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000052	<0.000050	0.000002	Diff <2x LOR	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	0.00080	0.00081	0.000007	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.050	mg/L	0.226	0.228	0.002	Diff <2x LOR	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00116	0.00111	0.00005	Diff <2x LOR	----
		Selenium, total	7782-49-2	E420	0.000050	mg/L	0.000120	0.000122	0.000002	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	1.09	1.06	2.99%	20%	----
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E420	0.050	mg/L	0.354	0.372	0.018	Diff <2x LOR	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.0155	0.0154	0.614%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 1049548) - continued											
WT2322070-001	WBR-P-04	Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.00030	mg/L	0.0134	0.0149	10.4%	20%	----
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000010	mg/L	0.000020	0.000020	0.0000002	Diff <2x LOR	----
		Vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00079	0.00077	0.00002	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	0.0080	0.0084	0.0003	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	0.00040	0.00039	0.00001	Diff <2x LOR	----
Total Metals (QC Lot: 1056620)											
WT2322049-001	Anonymous	Mercury, total	7439-97-6	E508-L	0.50	ng/L	<0.50	0.58	0.08	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1048976)											
WT2322070-002	NDR-DVSLK	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00016	0.00017	0.000007	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.00858	0.00853	0.545%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	31.8	31.8	0.0160%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0014	0.0013	0.00007	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	9.46	9.46	0.0645%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00105	0.00105	0.552%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.900	0.917	1.85%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 1048976) - continued											
WT2322070-002	NDR-DVSLK	Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00142	0.00140	0.00002	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	1.87	1.84	1.59%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	1.38	1.39	1.01%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.0432	0.0426	1.33%	20%	----
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	0.92	0.94	0.02	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000084	0.000083	0.000002	Diff <2x LOR	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1049626)											
WT2322070-005	NDR-MARLK	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0375	0.0381	1.49%	20%	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00060	0.00058	0.00002	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.00532	0.00516	3.03%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000069	<0.0000050	0.0000019	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	13.4	13.7	2.02%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00046	0.00044	0.00002	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	0.160	0.157	1.87%	20%	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 1049626) - continued											
WT2322070-005	NDR-MARLK	Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	3.69	3.59	2.83%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00474	0.00464	2.25%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000050	<0.000050	0	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.270	0.265	0.006	Diff <2x LOR	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00064	0.00064	0.000002	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000102	0.000092	0.000010	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	0.585	0.580	0.884%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	0.886	0.874	1.36%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.0248	0.0241	3.02%	20%	----
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	0.00114	0.00116	0.00002	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000030	0.000029	0.000001	Diff <2x LOR	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0014	0.0014	0.00007	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
Speciated Metals (QC Lot: 1061736)											
VA23B6274-001	Anonymous	Methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L	0.000197	0.000220	11.1%	30%	----
Speciated Metals (QC Lot: 1068572)											
CG2309927-001	Anonymous	Methylmercury (as MeHg), total	22967-92-6	E536	0.000020	µg/L	0.000244	0.000305	22.2%	30%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1049350)						
Conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 1049351)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1049498)						
Acidity (as CaCO3)	----	E283	2	mg/L	<2.0	----
Physical Tests (QCLot: 1050104)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1050105)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Anions and Nutrients (QCLot: 1049353)						
Bromide	24959-67-9	E235.Br	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 1049354)						
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1049355)						
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 1049356)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1049357)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1049358)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1050569)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1050570)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Cyanides (QCLot: 1049586)						
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1049587)						
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 1049588)						
Cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Total Metals (QCLot: 1049548)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1049548) - continued						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
Boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
Copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
Iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
Lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
Lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
Sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1049548) - continued						
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----
Total Metals (QCLot: 1056620)						
Mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
Dissolved Metals (QCLot: 1048976)						
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1048976) - continued						
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Dissolved Metals (QCLot: 1049626)						
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1049626) - continued						
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Speciated Metals (QCLot: 1061736)						
Methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	<0.000020	----
Speciated Metals (QCLot: 1068572)						
Methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	<0.000020	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1049350)									
Conductivity	----	E100	1	µS/cm	1409 µS/cm	100	90.0	110	----
Physical Tests (QCLot: 1049351)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	150 mg/L	99.9	85.0	115	----
Physical Tests (QCLot: 1049352)									
pH	----	E108	----	pH units	7 pH units	101	98.0	102	----
Physical Tests (QCLot: 1049498)									
Acidity (as CaCO3)	----	E283	2	mg/L	50 mg/L	99.2	85.0	115	----
Physical Tests (QCLot: 1050104)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	85.5	85.0	115	----
Physical Tests (QCLot: 1050105)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	98.2	85.0	115	----
Anions and Nutrients (QCLot: 1049353)									
Bromide	24959-67-9	E235.Br	0.1	mg/L	0.5 mg/L	101	85.0	115	----
Anions and Nutrients (QCLot: 1049354)									
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	97.4	90.0	110	----
Anions and Nutrients (QCLot: 1049355)									
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	95.6	90.0	110	----
Anions and Nutrients (QCLot: 1049356)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	98.6	90.0	110	----
Anions and Nutrients (QCLot: 1049357)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	97.5	90.0	110	----
Anions and Nutrients (QCLot: 1049358)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1050569)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.845 mg/L	100	80.0	120	----
Anions and Nutrients (QCLot: 1050570)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	100	85.0	115	----
Cyanides (QCLot: 1049586)									
Cyanide, strong acid dissociable (Total)	----	E333	0.002	mg/L	0.25 mg/L	85.5	80.0	120	----
Cyanides (QCLot: 1049587)									

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Concentration	LCS	Low	High	Qualifier
Cyanides (QCLot: 1049587) - continued									
Cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	97.1	80.0	120	----
Cyanides (QCLot: 1049588)									
Cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	90.3	80.0	120	----
Total Metals (QCLot: 1049548)									
Aluminum, total	7429-90-5	E420	0.003	mg/L	0.1 mg/L	110	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	0.05 mg/L	114	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	0.05 mg/L	116	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.0125 mg/L	115	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.005 mg/L	115	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	0.05 mg/L	109	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	0.05 mg/L	107	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.005 mg/L	111	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	2.5 mg/L	112	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.0025 mg/L	117	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.0125 mg/L	112	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.0125 mg/L	112	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.0125 mg/L	111	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	0.05 mg/L	# 125	80.0	120	MES
Lead, total	7439-92-1	E420	0.00005	mg/L	0.025 mg/L	111	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.0125 mg/L	114	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	2.5 mg/L	116	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.0125 mg/L	118	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.0125 mg/L	115	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.025 mg/L	112	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	0.5 mg/L	117	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	2.5 mg/L	116	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.005 mg/L	113	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	0.05 mg/L	110	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	0.5 mg/L	115	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.005 mg/L	112	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	2.5 mg/L	114	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.0125 mg/L	115	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	2.5 mg/L	111	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.005 mg/L	113	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	0.05 mg/L	111	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1049548) - continued									
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.005 mg/L	108	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.025 mg/L	112	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.0125 mg/L	111	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.005 mg/L	114	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.00025 mg/L	112	80.0	120	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.025 mg/L	115	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.025 mg/L	114	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.005 mg/L	115	80.0	120	----
Total Metals (QCLot: 1056620)									
Mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	93.1	80.0	120	----
Dissolved Metals (QCLot: 1048976)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	0.1 mg/L	100	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	0.05 mg/L	102	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	0.05 mg/L	107	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.0125 mg/L	103	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.005 mg/L	103	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	0.05 mg/L	99.8	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	0.05 mg/L	99.2	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.005 mg/L	102	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	2.5 mg/L	102	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.0025 mg/L	106	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.0125 mg/L	103	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.0125 mg/L	101	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.0125 mg/L	101	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	0.05 mg/L	104	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.025 mg/L	101	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.0125 mg/L	103	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	2.5 mg/L	107	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.0125 mg/L	102	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.0125 mg/L	105	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.025 mg/L	102	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	0.5 mg/L	109	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	2.5 mg/L	106	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.005 mg/L	105	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	0.05 mg/L	101	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1048976) - continued									
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	0.5 mg/L	107	60.0	140	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.005 mg/L	101	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	2.5 mg/L	105	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.0125 mg/L	104	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	2.5 mg/L	105	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.005 mg/L	101	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	0.05 mg/L	102	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.005 mg/L	98.9	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.025 mg/L	103	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.0125 mg/L	100	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.005 mg/L	104	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.00025 mg/L	101	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.025 mg/L	104	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.025 mg/L	104	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.005 mg/L	106	80.0	120	----
Dissolved Metals (QCLot: 1049626)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	0.1 mg/L	99.3	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	0.05 mg/L	101	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	0.05 mg/L	107	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.0125 mg/L	106	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.005 mg/L	99.0	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	0.05 mg/L	103	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	0.05 mg/L	96.0	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.005 mg/L	103	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	2.5 mg/L	100	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.0025 mg/L	102	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.0125 mg/L	100	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.0125 mg/L	101	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.0125 mg/L	99.4	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	0.05 mg/L	101	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.025 mg/L	104	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.0125 mg/L	99.3	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	2.5 mg/L	113	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.0125 mg/L	102	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.0125 mg/L	103	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.025 mg/L	100	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1049626) - continued									
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	0.5 mg/L	106	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	2.5 mg/L	97.5	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.005 mg/L	106	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	0.05 mg/L	101	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	0.5 mg/L	104	60.0	140	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.005 mg/L	96.1	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	2.5 mg/L	104	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.0125 mg/L	105	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	2.5 mg/L	93.5	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.005 mg/L	108	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	0.05 mg/L	105	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.005 mg/L	97.1	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.025 mg/L	103	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.0125 mg/L	99.6	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.005 mg/L	102	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.00025 mg/L	105	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.025 mg/L	104	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.025 mg/L	106	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.005 mg/L	106	80.0	120	----
Speciated Metals (QCLot: 1061736)									
Methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	0.0025 µg/L	71.8	70.0	130	----
Speciated Metals (QCLot: 1068572)									
Methylmercury (as MeHg), total	22967-92-6	E536	0.00002	µg/L	0.0025 µg/L	98.9	70.0	130	----

Qualifiers

Qualifier	Description
MES	*Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).*

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1049353)										
WT2322070-001	WBR-P-04	Bromide	24959-67-9	E235.Br	0.50 mg/L	0.5 mg/L	99.0	75.0	125	----
Anions and Nutrients (QCLot: 1049354)										
WT2322070-001	WBR-P-04	Nitrate (as N)	14797-55-8	E235.NO3	2.41 mg/L	2.5 mg/L	96.2	75.0	125	----
Anions and Nutrients (QCLot: 1049355)										
WT2322070-001	WBR-P-04	Nitrite (as N)	14797-65-0	E235.NO2	0.491 mg/L	0.5 mg/L	98.2	75.0	125	----
Anions and Nutrients (QCLot: 1049356)										
WT2322070-001	WBR-P-04	Sulfate (as SO4)	14808-79-8	E235.SO4	96.7 mg/L	100 mg/L	96.7	75.0	125	----
Anions and Nutrients (QCLot: 1049357)										
WT2322070-001	WBR-P-04	Chloride	16887-00-6	E235.Cl	96.6 mg/L	100 mg/L	96.6	75.0	125	----
Anions and Nutrients (QCLot: 1049358)										
WT2322070-001	WBR-P-04	Fluoride	16984-48-8	E235.F	0.998 mg/L	1 mg/L	99.8	75.0	125	----
Anions and Nutrients (QCLot: 1050569)										
HA2300420-002	Anonymous	Phosphorus, total	7723-14-0	E372-U	ND mg/L	0.1 mg/L	ND	70.0	130	----
Anions and Nutrients (QCLot: 1050570)										
HA2300420-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	0.1 mg/L	ND	75.0	125	----
Cyanides (QCLot: 1049586)										
WT2322070-001	WBR-P-04	Cyanide, strong acid dissociable (Total)	----	E333	0.206 mg/L	0.25 mg/L	82.6	75.0	125	----
Cyanides (QCLot: 1049587)										
WT2322070-001	WBR-P-04	Cyanide, weak acid dissociable	----	E336	0.124 mg/L	0.125 mg/L	99.3	75.0	125	----
Cyanides (QCLot: 1049588)										
WT2322070-001	WBR-P-04	Cyanide, free	----	E339	0.119 mg/L	0.125 mg/L	95.0	75.0	125	----
Total Metals (QCLot: 1049548)										
WT2322070-002	NDR-DVSLK	Aluminum, total	7429-90-5	E420	0.0996 mg/L	0.1 mg/L	99.6	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0528 mg/L	0.05 mg/L	106	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0539 mg/L	0.05 mg/L	108	70.0	130	----
		Barium, total	7440-39-3	E420	0.0128 mg/L	0.0125 mg/L	102	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.00536 mg/L	0.005 mg/L	107	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.0502 mg/L	0.05 mg/L	100	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 1049548) - continued										
WT2322070-002	NDR-DVSLK	Boron, total	7440-42-8	E420	0.050 mg/L	0.05 mg/L	101	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00519 mg/L	0.005 mg/L	104	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00275 mg/L	0.0025 mg/L	110	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0128 mg/L	0.0125 mg/L	103	70.0	130	----
		Cobalt, total	7440-48-4	E420	0.0126 mg/L	0.0125 mg/L	101	70.0	130	----
		Copper, total	7440-50-8	E420	0.0127 mg/L	0.0125 mg/L	101	70.0	130	----
		Iron, total	7439-89-6	E420	0.051 mg/L	0.05 mg/L	102	70.0	130	----
		Lead, total	7439-92-1	E420	0.0255 mg/L	0.025 mg/L	102	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0130 mg/L	0.0125 mg/L	104	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	0.0125 mg/L	0.0125 mg/L	99.8	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0134 mg/L	0.0125 mg/L	107	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0252 mg/L	0.025 mg/L	101	70.0	130	----
		Phosphorus, total	7723-14-0	E420	0.555 mg/L	0.5 mg/L	111	70.0	130	----
		Potassium, total	7440-09-7	E420	2.59 mg/L	2.5 mg/L	104	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.00534 mg/L	0.005 mg/L	107	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0540 mg/L	0.05 mg/L	108	70.0	130	----
		Silicon, total	7440-21-3	E420	ND mg/L	0.5 mg/L	ND	70.0	130	----
		Silver, total	7440-22-4	E420	0.00516 mg/L	0.005 mg/L	103	70.0	130	----
		Sodium, total	7440-23-5	E420	2.51 mg/L	2.5 mg/L	100	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	2.81 mg/L	2.5 mg/L	112	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.00515 mg/L	0.005 mg/L	103	70.0	130	----
		Thallium, total	7440-28-0	E420	0.0514 mg/L	0.05 mg/L	103	70.0	130	----
		Thorium, total	7440-29-1	E420	0.00508 mg/L	0.005 mg/L	102	70.0	130	----
		Tin, total	7440-31-5	E420	0.0260 mg/L	0.025 mg/L	104	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0127 mg/L	0.0125 mg/L	101	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.00535 mg/L	0.005 mg/L	107	70.0	130	----
		Uranium, total	7440-61-1	E420	0.000261 mg/L	0.00025 mg/L	104	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0265 mg/L	0.025 mg/L	106	70.0	130	----
		Zinc, total	7440-66-6	E420	0.0254 mg/L	0.025 mg/L	102	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.00533 mg/L	0.005 mg/L	106	70.0	130	----
Total Metals (QCLot: 1056620)										
WT2322049-002	Anonymous	Mercury, total	7439-97-6	E508-L	4.49 ng/L	5 ng/L	89.8	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1048976)										
WT2322070-003	NDR-SUTLK	Aluminum, dissolved	7429-90-5	E421	0.0972 mg/L	0.1 mg/L	97.2	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0512 mg/L	0.05 mg/L	102	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0553 mg/L	0.05 mg/L	111	70.0	130	----
		Barium, dissolved	7440-39-3	E421	0.0123 mg/L	0.0125 mg/L	98.6	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.00541 mg/L	0.005 mg/L	108	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.0451 mg/L	0.05 mg/L	90.2	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.048 mg/L	0.05 mg/L	96.0	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00529 mg/L	0.005 mg/L	106	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00268 mg/L	0.0025 mg/L	107	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0127 mg/L	0.0125 mg/L	102	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0124 mg/L	0.0125 mg/L	99.7	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0125 mg/L	0.0125 mg/L	100	70.0	130	----
		Iron, dissolved	7439-89-6	E421	0.050 mg/L	0.05 mg/L	100	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0253 mg/L	0.025 mg/L	101	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0131 mg/L	0.0125 mg/L	105	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	0.0126 mg/L	0.0125 mg/L	101	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0132 mg/L	0.0125 mg/L	106	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0248 mg/L	0.025 mg/L	99.3	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	0.565 mg/L	0.5 mg/L	113	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	2.56 mg/L	2.5 mg/L	102	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.00520 mg/L	0.005 mg/L	104	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0587 mg/L	0.05 mg/L	117	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	ND mg/L	0.5 mg/L	ND	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00509 mg/L	0.005 mg/L	102	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	2.48 mg/L	2.5 mg/L	99.1	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	2.48 mg/L	2.5 mg/L	99.1	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.00555 mg/L	0.005 mg/L	111	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.0511 mg/L	0.05 mg/L	102	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.00466 mg/L	0.005 mg/L	93.2	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0254 mg/L	0.025 mg/L	102	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0125 mg/L	0.0125 mg/L	100	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.00525 mg/L	0.005 mg/L	105	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1048976) - continued										
WT2322070-003	NDR-SUTLK	Uranium, dissolved	7440-61-1	E421	0.000260 mg/L	0.00025 mg/L	104	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0262 mg/L	0.025 mg/L	105	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.0270 mg/L	0.025 mg/L	108	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.00531 mg/L	0.005 mg/L	106	70.0	130	----
Dissolved Metals (QCLot: 1049626)										
WT2322070-008	WBR-S-04	Aluminum, dissolved	7429-90-5	E421	ND mg/L	0.1 mg/L	ND	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0484 mg/L	0.05 mg/L	96.9	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0521 mg/L	0.05 mg/L	104	70.0	130	----
		Barium, dissolved	7440-39-3	E421	0.0123 mg/L	0.0125 mg/L	98.7	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.00485 mg/L	0.005 mg/L	97.0	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.0434 mg/L	0.05 mg/L	86.8	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.044 mg/L	0.05 mg/L	87.2	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00504 mg/L	0.005 mg/L	101	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00248 mg/L	0.0025 mg/L	99.3	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0119 mg/L	0.0125 mg/L	95.5	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0121 mg/L	0.0125 mg/L	96.8	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0119 mg/L	0.0125 mg/L	94.9	70.0	130	----
		Iron, dissolved	7439-89-6	E421	ND mg/L	0.05 mg/L	ND	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0246 mg/L	0.025 mg/L	98.4	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0118 mg/L	0.0125 mg/L	94.6	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0122 mg/L	0.0125 mg/L	97.8	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0235 mg/L	0.025 mg/L	94.1	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	0.521 mg/L	0.5 mg/L	104	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	2.43 mg/L	2.5 mg/L	97.1	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.00492 mg/L	0.005 mg/L	98.4	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0548 mg/L	0.05 mg/L	110	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	ND mg/L	0.5 mg/L	ND	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00416 mg/L	0.005 mg/L	83.3	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	2.42 mg/L	2.5 mg/L	96.7	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	2.48 mg/L	2.5 mg/L	99.3	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.00536 mg/L	0.005 mg/L	107	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1049626) - continued										
WT2322070-008	WBR-S-04	Thallium, dissolved	7440-28-0	E421	0.0492 mg/L	0.05 mg/L	98.5	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.00411 mg/L	0.005 mg/L	82.2	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0232 mg/L	0.025 mg/L	92.7	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0114 mg/L	0.0125 mg/L	91.5	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.00475 mg/L	0.005 mg/L	94.9	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.000248 mg/L	0.00025 mg/L	99.0	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0245 mg/L	0.025 mg/L	97.9	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.0254 mg/L	0.025 mg/L	101	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.00450 mg/L	0.005 mg/L	89.9	70.0	130	----
Speciated Metals (QCLot: 1061736)										
VA23B6274-002	Anonymous	Methylmercury (as MeHg), total	22967-92-6	E536	0.00187 µg/L	0.0025 µg/L	74.8	60.0	140	----
Speciated Metals (QCLot: 1068572)										
CG2309927-002	Anonymous	Methylmercury (as MeHg), total	22967-92-6	E536	0.00231 µg/L	0.0025 µg/L	92.6	60.0	140	----

GC-544
N-036
CN-214
MM-296

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

COC Number: 20 -

Page of

Environmental Division Waterloo

Work Order Reference WT2322070

Telephone : +1 519 886 6910

Report To	Contact and company name below will appear on the final report
Company:	WSP E&I Canada Ltd.
Contact:	Dale Klodnicki
Phone:	647-993-4243
	Company address below will appear on the final report
Street:	6925 Century Avenue, Sutie #100
City/Province:	Mississauga, Ontario
Postal Code:	L5N 5K2
Invoice To	Same as Report To ☑ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	
Contact:	

Project Information	
ALS Account # / Quote #:	WT2023WOOD1000009
Job #:	OMEMA2304S
PO / AFE:	OMEMA2304S.8000.8200.1142.573000
LSD:	Crawford

ALS Lab Work Order # (ALS use only): WT2322070

Reports / Recipients

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Merge QC/QCI Reports with COA ☐ YES ☐ NO ☐ N/A

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1: Dale.Klodnicki@wsp.com

Email 2: cassandra.martino@wsp.com

Email 3: alexandra.stankiewicz@wsp.com

Invoice Recipients

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1: apinvoice.canada@woodplc.com

Email 2: dale.klodnicki@wsp.com

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Contact: Gayle Braun Sampler: CM/MB/KW/AD

Turnaround Time (TAT) Requested

☑ Routine [R] if received by 3pm M-F - no surcharges apply

☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge mi

☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge mi

☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge mi

☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge mi

☐ Same day [E2] if received by 10am M-S - 200% rush surcha

Additional fees may apply to rush requests on weeken

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Dissolved Metals	Total Metals	General	Low T Hg	NH3/TP	Total Methyl Hg	Total/Free/WAD Cn				FIELD PH	FIELD TEMPERATURE	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	WBR-P-04	14-07-23	11:00	SW	7	X	X	X	X	X	X	X				5.41	21.9			
	NDR-DvsLk	13-07-23	14:30	SW	7	X	X	X	X	X	X	X				8.46	23.4			
	NDR-SutLk	14-07-23	14:00	SW	7	X	X	X	X	X	X	X				8.1	22.8			
	NDR-GerLk	12-07-23	12:40	SW	7	X	X	X	X	X	X	X				8.13	21.2			
	NDR-MarLk	12-07-23	17:40	SW	7	X	X	X	X	X	X	X				Not availabl	Not availabl			
	Trip Blank	7-Jul-23	N/A	W	7	X	X	X	X	X	X	X				N/A	N/A			
	Field Blank	17-Jul-23	15:00	W	7	X	X	X	X	X	X	X				N/A	N/A			
	WBR-S-04	17-Jul-23	15:00	SW	7	X	X	X	X	X	X	X				6.37	20.8			
	SW-DUP	17-Jul-23	N/A	SW	7	X	X	X	X	X	X	X				6.37	20.8			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☑ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C			
	9°C			14.7	15.7	

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
Cassandra Martino	18-Jul-23	14:00

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:
Riya Pandya	July 18th	3pm

FINAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:
AB	07/20/23	9:00

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

AUG 2020 FRONT

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

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

TESTMARK Laboratories Ltd.
Committed to Quality and Service

CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	491080
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	Adam Gauthier
Date Order Received:	2/17/2023	Analysis Started:	2/21/2023
Arrival Temperature:	7 °C	Analysis Completed:	3/3/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
KC-01	1852149	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	2/16/2023	12:55 PM
SuthLK	1852150	Water	Grab		2/16/2023	2:55 PM
Dup1	1852151	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	2/16/2023	
GerLK	1852152	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	2/17/2023	10:30 AM
MATR-02	1852153	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	2/17/2023	11:50 AM
UWC-01	1852154	Water	Grab		2/17/2023	12:20 PM
NDR-S-04b	1852155	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	2/17/2023	12:50 PM
NDR-S-02	1852156	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	2/17/2023	2:20 PM
Dup.2	1852157	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	2/17/2023	

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water, Low Level (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179

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Canada Nickel Company Inc.

Work Order Number: 491080

Method	Lab	Description	Reference
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 491080

WORK ORDER RESULTS

Sample Description	KC - 01		SuthLK		Dup1		GerLK			
Sample Date	2/16/2023 12:55 PM		2/16/2023 2:55 PM		2/16/2023		2/17/2023 10:30 AM			
Lab ID	1852149		1852150		1852151		1852152			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	30.0	0.2	0.5	0.2	29.7	0.2	0.5	0.2	mg/L	~
Fluoride	0.16	0.05	<0.05	0.05	0.15	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	0.6 [0.6]	0.1	0.1	0.1	0.7	0.1	0.3	0.1	mg/L	~
Nitrite (as N)	<0.01 [<0.01]	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	201.0	0.5	3.4	0.5	199.0	0.5	1.6	0.5	mg/L	~

Sample Description	MATR - 02		UWC - 01		NDR - S - 04b		NDR - S - 02			
Sample Date	2/17/2023 11:50 AM		2/17/2023 12:20 PM		2/17/2023 12:50 PM		2/17/2023 2:20 PM			
Lab ID	1852153		1852154		1852155		1852156			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	1.6	0.2	0.3	0.2	3.9	0.2	3.9	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	0.1	0.1	0.4	0.1	0.2	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	3.7	0.5	1.0	0.5	0.7	0.5	0.9	0.5	mg/L	~

Sample Description	Dup.2			
Sample Date	2/17/2023			
Lab ID	1852157			
Anions	Result	MDL	Units	Criteria: PWQO
Chloride	0.7	0.2	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 491080

Sample Description	Dup.2
Sample Date	2/17/2023
Lab ID	1852157

Anions	Result	MDL	Units	Criteria: PWQO
Fluoride	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	0.3	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	mg/L	~
Sulphate	1.5	0.5	mg/L	~

Sample Description	KC - 01		SuthLK		GerLK		MATR - 02			
Sample Date	2/16/2023 12:55 PM		2/16/2023 2:55 PM		2/17/2023 10:30 AM		2/17/2023 11:50 AM			
Lab ID	1852149		1852150		1852152		1852153			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	6.43	N/A	7.1	N/A	6.22	N/A	6.39	N/A	pH	~
Field Temp	0	N/A	0	N/A	2.33	N/A	0	N/A	°C	~

Sample Description	UWC - 01		NDR - S - 04b		NDR - S - 02			
Sample Date	2/17/2023 12:20 PM		2/17/2023 12:50 PM		2/17/2023 2:20 PM			
Lab ID	1852154		1852155		1852156			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	5.43	N/A	6.4	N/A	6.8	N/A	pH	~
Field Temp	0	N/A	0	N/A	0	N/A	°C	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 491080

Sample Description	KC - 01		SuthLK		Dup1		GerLK			
Sample Date	2/16/2023 12:55 PM		2/16/2023 2:55 PM		2/16/2023		2/17/2023 10:30 AM			
Lab ID	1852149		1852150		1852151		1852152			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	15	5	17	5	18	5	10	5	mg/L as CaCO3	~
Ammonia (as N)	0.131	0.005	0.070 [0.070]	0.005	0.127	0.005	0.145	0.005	mg/L	~
Conductivity	575	1	256	1	533	1	138	1	µS/cm	~
Dissolved Organic Carbon	18.5 [18.6]	0.4	8.4	0.4	18.6	0.4	13.9	0.4	mg/L	~
Free Cyanide	0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	48	2	148	2	51	2	73	2	mg/L as CaCO3	~
pH	7.29	N/A	7.55	N/A	6.96	N/A	7.54	N/A	pH	~
Strong Acid Dissociable Cyanide	<0.002 [<0.002]	0.002	<0.002	0.002	<0.002	0.002	<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	189.0	0.1	115.0	0.1	186.0	0.1	56.1	0.1	mg/L	~
Total Phosphorus (as P)	0.049	0.002	0.022	0.002	0.031	0.002	0.019	0.002	mg/L	~
Weak Acid Dissociable Cyanide	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

Sample Description	MATR - 02		UWC - 01		NDR - S - 04b		NDR - S - 02			
Sample Date	2/17/2023 11:50 AM		2/17/2023 12:20 PM		2/17/2023 12:50 PM		2/17/2023 2:20 PM			
Lab ID	1852153		1852154		1852155		1852156			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	8	5	13	5	14	5	12	5	mg/L as CaCO3	~
Ammonia (as N)	0.026	0.005	0.280	0.005	0.084	0.005	0.123	0.005	mg/L	~
Conductivity	101	1	15	1	135	1	136	1	µS/cm	~
Dissolved Organic Carbon	13.0	0.4	7.1	0.4	27.1	0.4	29.6	0.4	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 491080

Sample Description	MATR - 02		UWC - 01		NDR - S - 04b		NDR - S - 02			
Sample Date	2/17/2023 11:50 AM		2/17/2023 12:20 PM		2/17/2023 12:50 PM		2/17/2023 2:20 PM			
Lab ID	1852153		1852154		1852155		1852156			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Free Cyanide	<0.001	0.001	<0.001	0.001	0.002	0.001	0.002	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	49	2	5	2	65	2	66	2	mg/L as CaCO3	~
pH	7.43	N/A	5.54	N/A	7.16	N/A	7.01	N/A	pH	~
Strong Acid Dissociable Cyanide	<0.002	0.002	0.003	0.002	<0.002	0.002	<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	40.7	0.1	6.0	0.1	54.8	0.1	57.5	0.1	mg/L	~
Total Phosphorus (as P)	0.016	0.002	0.013	0.002	0.036	0.002	0.033	0.002	mg/L	~
Weak Acid Dissociable Cyanide	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

Sample Description	Dup.2			
Sample Date	2/17/2023			
Lab ID	1852157			
General Chemistry	Result	MDL	Units	Criteria: PWQO
Acidity	15	5	mg/L as CaCO3	~
Ammonia (as N)	0.177	0.005	mg/L	~
Conductivity	125	1	µS/cm	~
Dissolved Organic Carbon	13.6	0.4	mg/L	~
Free Cyanide	<0.001	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	67	2	mg/L as CaCO3	~
pH	7.22	N/A	pH	~
Strong Acid Dissociable Cyanide	<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	55.6	0.1	mg/L	~
Total Phosphorus (as P)	0.017	0.002	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 491080

Sample Description	Dup.2			
Sample Date	2/17/2023			
Lab ID	1852157			
General Chemistry	Result	MDL	Units	Criteria: PWQO
Weak Acid Dissociable Cyanide	<0.001	0.001	mg/L	~

Sample Description	KC - 01		SuthLK		Dup1		GerLK			
Sample Date	2/16/2023 12:55 PM		2/16/2023 2:55 PM		2/16/2023		2/17/2023 10:30 AM			
Lab ID	1852149		1852150		1852151		1852152			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	2.94	0.01	0.58	0.01	1.68	0.01	5.00	0.01	ng/L	200

Sample Description	MATR - 02		UWC - 01		NDR - S - 04b		NDR - S - 02			
Sample Date	2/17/2023 11:50 AM		2/17/2023 12:20 PM		2/17/2023 12:50 PM		2/17/2023 2:20 PM			
Lab ID	1852153		1852154		1852155		1852156			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	2.74	0.01	4.72	0.01	2.60	0.01	3.43	0.01	ng/L	200

Sample Description	Dup.2			
Sample Date	2/17/2023			
Lab ID	1852157			
Mercury (Trace)	Result	MDL	Units	Criteria: PWQO
Total Mercury	5.82	0.01	ng/L	200

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Canada Nickel Company Inc.

Work Order Number: 491080

Sample Description	KC - 01		SuthLK		Dup1		GerLK			
Sample Date	2/16/2023 12:55 PM		2/16/2023 2:55 PM		2/16/2023		2/17/2023 10:30 AM			
Lab ID	1852149		1852150		1852151		1852152			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	120	1	3	1	70	1	23	1	ug/L	~
Dissolved Antimony	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	~
Dissolved Arsenic	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Barium	12	1	15	1	12	1	10	1	ug/L	~
Dissolved Beryllium	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	~
Dissolved Bismuth	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Boron	24	2	<2	2	25	2	<2	2	ug/L	~
Dissolved Cadmium	0.2	0.1	<0.1	0.1	0.2	0.1	<0.1	0.1	ug/L	~
Dissolved Calcium	57000	500	29800	500	42100	500	16300	50	ug/L	~
Dissolved Cerium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Cesium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Chromium	2	1	4	1	2	1	2	1	ug/L	~
Dissolved Cobalt	0.4	0.1	0.1	0.1	0.4	0.1	0.1	0.1	ug/L	~
Dissolved Copper	3	1	<1	1	3	1	<1	1	ug/L	~
Dissolved Europium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Gallium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Iron	635	20	150	20	563	20	290	20	ug/L	~
Dissolved Lanthanum	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Lead	0.2	0.1	<0.1	0.1	0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Lithium	9	5	<5	5	10	5	<5	5	ug/L	~
Dissolved Magnesium	9240	4	8180	4	9400	4	4030	4	ug/L	~
Dissolved Manganese	50	1	38	1	50	1	28	1	ug/L	~
Dissolved Mercury	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.2
Dissolved Molybdenum	<1	1	<1	1	<1	1	<1	1	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 491080

Sample Description	KC - 01		SuthLK		Dup1		GerLK			
Sample Date	2/16/2023 12:55 PM		2/16/2023 2:55 PM		2/16/2023		2/17/2023 10:30 AM			
Lab ID	1852149		1852150		1852151		1852152			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Nickel	1	1	<1	1	1	1	<1	1	ug/L	~
Dissolved Niobium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Phosphorus	<50	50	<50	50	<50	50	<50	50	ug/L	~
Dissolved Potassium	2250	100	980	100	2300	100	490	100	ug/L	~
Dissolved Rhodium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Rubidium	4	1	2	1	4	1	<1	1	ug/L	~
Dissolved Scandium	<1	1	1	1	<1	1	<1	1	ug/L	~
Dissolved Selenium	2.6	0.2	<0.2	0.2	2.5	0.2	<0.2	0.2	ug/L	~
Dissolved Silicon	1600	600	3200	600	1600	600	1400	600	ug/L	~
Dissolved Silver	0.2	0.1	0.1	0.1	0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Sodium	20800	100	1310	100	21400	100	1400	100	ug/L	~
Dissolved Strontium	204	1	43	1	211	1	31	1	ug/L	~
Dissolved Sulfur	51900	800	1300	800	53700	800	<800	800	ug/L	~
Dissolved Tellurium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Thallium	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Thorium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Tin	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Titanium	4	1	<1	1	2	1	<1	1	ug/L	~
Dissolved Tungsten	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Uranium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Vanadium	1	1	1	1	<1	1	<1	1	ug/L	~
Dissolved Yttrium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Zinc	28	1	3	1	27	1	6	1	ug/L	~
Dissolved Zirconium	<1	1	<1	1	<1	1	<1	1	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 491080

Sample Description	MATR - 02		UWC - 01		NDR - S - 04b		NDR - S - 02			
Sample Date	2/17/2023 11:50 AM		2/17/2023 12:20 PM		2/17/2023 12:50 PM		2/17/2023 2:20 PM			
Lab ID	1852153		1852154		1852155		1852156			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	47	1	11	1	82	1	90	1	ug/L	~
Dissolved Antimony	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	~
Dissolved Arsenic	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Barium	6	1	1	1	6	1	7	1	ug/L	~
Dissolved Beryllium	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	~
Dissolved Bismuth	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Boron	<2	2	<2	2	<2	2	<2	2	ug/L	~
Dissolved Cadmium	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Calcium	11800	50	783	50	15000	50	15600	50	ug/L	~
Dissolved Cerium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Cesium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Chromium	1	1	<1	1	2	1	2	1	ug/L	~
Dissolved Cobalt	0.1	0.1	<0.1	0.1	0.3	0.1	0.4	0.1	ug/L	~
Dissolved Copper	<1	1	<1	1	<1	1	3	1	ug/L	~
Dissolved Europium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Gallium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Iron	160	20	71	20	567	20	635	20	ug/L	~
Dissolved Lanthanum	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Lead	<0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.1	ug/L	~
Dissolved Lithium	<5	5	<5	5	<5	5	<5	5	ug/L	~
Dissolved Magnesium	2740	4	189	4	4020	4	3970	4	ug/L	~
Dissolved Manganese	7	1	13	1	78	1	171	1	ug/L	~
Dissolved Mercury	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.2
Dissolved Molybdenum	<1	1	<1	1	<1	1	1	1	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 491080

Sample Description	MATR - 02		UWC - 01		NDR - S - 04b		NDR - S - 02			
Sample Date	2/17/2023 11:50 AM		2/17/2023 12:20 PM		2/17/2023 12:50 PM		2/17/2023 2:20 PM			
Lab ID	1852153		1852154		1852155		1852156			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Nickel	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Niobium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Phosphorus	<50	50	<50	50	<50	50	<50	50	ug/L	~
Dissolved Potassium	310	100	<100	100	350	100	380	100	ug/L	~
Dissolved Rhodium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Rubidium	<1	1	<1	1	<1	1	1	1	ug/L	~
Dissolved Scandium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Selenium	<0.2	0.2	0.2	0.2	<0.2	0.2	<0.2	0.2	ug/L	~
Dissolved Silicon	2300	600	<600	600	2200	600	2300	600	ug/L	~
Dissolved Silver	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Sodium	1590	100	110	100	3110	100	2860	100	ug/L	~
Dissolved Strontium	21	1	2	1	28	1	26	1	ug/L	~
Dissolved Sulfur	870	800	<800	800	<800	800	<800	800	ug/L	~
Dissolved Tellurium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Thallium	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Thorium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Tin	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Titanium	<1	1	<1	1	2	1	2	1	ug/L	~
Dissolved Tungsten	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Uranium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Vanadium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Yttrium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Zinc	1	1	3	1	3	1	12	1	ug/L	~
Dissolved Zirconium	<1	1	<1	1	<1	1	<1	1	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 491080

Sample Description	Dup.2
Sample Date	2/17/2023
Lab ID	1852157

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	22 [22]	1	ug/L	~
Dissolved Antimony	<0.5 [<0.5]	0.5	ug/L	~
Dissolved Arsenic	<1 [<1]	1	ug/L	~
Dissolved Barium	10 [9]	1	ug/L	~
Dissolved Beryllium	<0.5 [<0.5]	0.5	ug/L	~
Dissolved Bismuth	<1 [<1]	1	ug/L	~
Dissolved Boron	<2 [<2]	2	ug/L	~
Dissolved Cadmium	<0.1 [<0.1]	0.1	ug/L	~
Dissolved Calcium	15400 [15100]	50	ug/L	~
Dissolved Cerium	<1 [<1]	1	ug/L	~
Dissolved Cesium	<1 [<1]	1	ug/L	~
Dissolved Chromium	2 [1]	1	ug/L	~
Dissolved Cobalt	0.1 [<0.1]	0.1	ug/L	~
Dissolved Copper	<1 [<1]	1	ug/L	~
Dissolved Europium	<1 [<1]	1	ug/L	~
Dissolved Gallium	<1 [<1]	1	ug/L	~
Dissolved Iron	262 [250]	20	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 491080

Sample Description	Dup.2
Sample Date	2/17/2023
Lab ID	1852157

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Lanthanum	<1 [<1]	1	ug/L	~
Dissolved Lead	<0.1 [<0.1]	0.1	ug/L	~
Dissolved Lithium	<5 [<5]	5	ug/L	~
Dissolved Magnesium	3750 [3650]	4	ug/L	~
Dissolved Manganese	26 [26]	1	ug/L	~
Dissolved Mercury	<0.1 [<0.1]	0.1	ug/L	0.2
Dissolved Molybdenum	<1 [1]	1	ug/L	~
Dissolved Nickel	<1 [<1]	1	ug/L	~
Dissolved Niobium	<1 [<1]	1	ug/L	~
Dissolved Phosphorus	<50 [<50]	50	ug/L	~
Dissolved Potassium	460 [450]	100	ug/L	~
Dissolved Rhodium	<1 [<1]	1	ug/L	~
Dissolved Rubidium	<1 [<1]	1	ug/L	~
Dissolved Scandium	<1 [<1]	1	ug/L	~
Dissolved Selenium	<0.2 [<0.2]	0.2	ug/L	~
Dissolved Silicon	1300 [1200]	600	ug/L	~
Dissolved Silver	<0.1 [<0.1]	0.1	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 491080

Sample Description	Dup.2
Sample Date	2/17/2023
Lab ID	1852157

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Sodium	1290 [1280]	100	ug/L	~
Dissolved Strontium	28 [29]	1	ug/L	~
Dissolved Sulfur	<800 [<800]	800	ug/L	~
Dissolved Tellurium	<1 [<1]	1	ug/L	~
Dissolved Thallium	<0.1 [<0.1]	0.1	ug/L	~
Dissolved Thorium	<1 [<1]	1	ug/L	~
Dissolved Tin	<1 [<1]	1	ug/L	~
Dissolved Titanium	<1 [<1]	1	ug/L	~
Dissolved Tungsten	<1 [<1]	1	ug/L	~
Dissolved Uranium	<1 [<1]	1	ug/L	~
Dissolved Vanadium	<1 [<1]	1	ug/L	~
Dissolved Yttrium	<1 [<1]	1	ug/L	~
Dissolved Zinc	5 [5]	1	ug/L	~
Dissolved Zirconium	<1 [<1]	1	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 491080

Sample Description	KC - 01		SuthLK		Dup1		GerLK			
Sample Date	2/16/2023 12:55 PM		2/16/2023 2:55 PM		2/16/2023		2/17/2023 10:30 AM			
Lab ID	1852149		1852150		1852151		1852152			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	319	1	12	1	268	1	30	1	ug/L	75
Total Antimony	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	20
Total Arsenic	<1	1	<1	1	<1	1	<1	1	ug/L	5
Total Barium	14	1	14	1	13	1	10	1	ug/L	~
Total Beryllium	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	11
Total Bismuth	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Boron	25	2	<2	2	24	2	<2	2	ug/L	200
Total Cadmium	0.23	0.02	<0.02	0.02	0.23	0.02	0.03	0.02	ug/L	0.1
Total Calcium	59700	500	32300	500	54100	500	15400	50	ug/L	~
Total Cerium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Cesium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Chromium	2	1	<1	1	1	1	<1	1	ug/L	~
Total Cobalt	0.5	0.1	0.1	0.1	0.5	0.1	0.1	0.1	ug/L	0.9
Total Copper	4	1	1	1	5	1	3	1	ug/L	1
Total Europium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Gallium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Iron	1100	200	160	20	740	200	296	20	ug/L	300
Total Lanthanum	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Lead	0.4	0.1	<0.1	0.1	0.4	0.1	0.1	0.1	ug/L	1
Total Lithium	10	5	<5	5	10	5	<5	5	ug/L	~
Total Magnesium	9450	4	7900	4	9490	4	3750	4	ug/L	~
Total Manganese	58	1	52	1	55	1	28	1	ug/L	~
Total Mercury	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.2
Total Molybdenum	<1	1	<1	1	<1	1	<1	1	ug/L	40

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 491080

Sample Description	KC - 01		SuthLK		Dup1		GerLK			
Sample Date	2/16/2023 12:55 PM		2/16/2023 2:55 PM		2/16/2023		2/17/2023 10:30 AM			
Lab ID	1852149		1852150		1852151		1852152			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Nickel	2	1	<1	1	1	1	<1	1	ug/L	25
Total Niobium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Potassium	2230	100	950	100	2260	100	450	100	ug/L	~
Total Rhodium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Rubidium	4	1	2	1	4	1	<1	1	ug/L	~
Total Scandium	<1	1	1	1	<1	1	<1	1	ug/L	~
Total Selenium	2.1	0.2	<0.2	0.2	2.3	0.2	0.3	0.2	ug/L	100
Total Silicon	1800	600	2900	600	1800	600	1300	600	ug/L	~
Total Silver	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.1
Total Sodium	21100	100	1280	100	21200	100	1320	100	ug/L	~
Total Strontium	211	1	42	1	213	1	31	1	ug/L	~
Total Sulphur	52500	800	1300	800	52400	800	<800	800	ug/L	~
Total Tellurium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Thallium	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.3
Total Thorium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Tin	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Titanium	12	1	<1	1	9	1	<1	1	ug/L	~
Total Tungsten	<1	1	<1	1	<1	1	<1	1	ug/L	30
Total Uranium	<1	1	<1	1	<1	1	<1	1	ug/L	5
Total Vanadium	1	1	<1	1	1	1	<1	1	ug/L	6
Total Yttrium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Zinc	30	1	4	1	31	1	6	1	ug/L	20
Total Zirconium	<1	1	<1	1	<1	1	<1	1	ug/L	4

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 491080

Sample Description	MATR - 02		UWC - 01		NDR - S - 04b		NDR - S - 02			
Sample Date	2/17/2023 11:50 AM		2/17/2023 12:20 PM		2/17/2023 12:50 PM		2/17/2023 2:20 PM			
Lab ID	1852153		1852154		1852155		1852156			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	79	1	26	1	223	1	222	1	ug/L	75
Total Antimony	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	20
Total Arsenic	<1	1	<1	1	<1	1	<1	1	ug/L	5
Total Barium	6	1	2	1	7	1	8	1	ug/L	~
Total Beryllium	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	11
Total Bismuth	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Boron	<2	2	<2	2	<2	2	<2	2	ug/L	200
Total Cadmium	<0.02	0.02	0.05	0.02	0.03	0.02	0.03	0.02	ug/L	0.1
Total Calcium	11700	50	1720	50	14900	50	16000	50	ug/L	~
Total Cerium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Cesium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Chromium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Cobalt	0.1	0.1	0.1	0.1	0.3	0.1	0.4	0.1	ug/L	0.9
Total Copper	2	1	<1	1	2	1	2	1	ug/L	1
Total Europium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Gallium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Iron	231	20	150	20	740	200	800	200	ug/L	300
Total Lanthanum	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Lead	<0.1	0.1	0.3	0.1	0.3	0.1	0.3	0.1	ug/L	1
Total Lithium	<5	5	<5	5	<5	5	<5	5	ug/L	~
Total Magnesium	2710	4	425	4	3980	4	4000	4	ug/L	~
Total Manganese	12	1	27	1	94	1	177	1	ug/L	~
Total Mercury	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.2
Total Molybdenum	<1	1	<1	1	<1	1	<1	1	ug/L	40

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 491080

Sample Description	MATR - 02		UWC - 01		NDR - S - 04b		NDR - S - 02			
Sample Date	2/17/2023 11:50 AM		2/17/2023 12:20 PM		2/17/2023 12:50 PM		2/17/2023 2:20 PM			
Lab ID	1852153		1852154		1852155		1852156			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Nickel	<1	1	<1	1	<1	1	1	1	ug/L	25
Total Niobium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Potassium	300	100	<100	100	360	100	410	100	ug/L	~
Total Rhodium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Rubidium	<1	1	<1	1	1	1	1	1	ug/L	~
Total Scandium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Selenium	0.2	0.2	<0.2	0.2	0.3	0.2	<0.2	0.2	ug/L	100
Total Silicon	2400	600	<600	600	2300	600	2400	600	ug/L	~
Total Silver	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.1
Total Sodium	1510	100	150	100	2950	100	2860	100	ug/L	~
Total Strontium	21	1	4	1	28	1	29	1	ug/L	~
Total Sulphur	1000	800	<800	800	<800	800	<800	800	ug/L	~
Total Tellurium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Thallium	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.3
Total Thorium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Tin	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Titanium	2	1	<1	1	7	1	7	1	ug/L	~
Total Tungsten	<1	1	<1	1	<1	1	<1	1	ug/L	30
Total Uranium	<1	1	<1	1	<1	1	<1	1	ug/L	5
Total Vanadium	<1	1	<1	1	<1	1	<1	1	ug/L	6
Total Yttrium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Zinc	2	1	5	1	4	1	12	1	ug/L	20
Total Zirconium	<1	1	<1	1	<1	1	<1	1	ug/L	4

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 491080

Sample Description	Dup.2
Sample Date	2/17/2023
Lab ID	1852157

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Aluminum	27 [28]	1	ug/L	75
Total Antimony	<0.5 [<0.5]	0.5	ug/L	20
Total Arsenic	<1 [<1]	1	ug/L	5
Total Barium	10 [10]	1	ug/L	~
Total Beryllium	<0.5 [<0.5]	0.5	ug/L	11
Total Bismuth	<1 [<1]	1	ug/L	~
Total Boron	<2 [<2]	2	ug/L	200
Total Cadmium	0.03 [0.03]	0.02	ug/L	0.1
Total Calcium	15300 [15700]	50	ug/L	~
Total Cerium	<1 [<1]	1	ug/L	~
Total Cesium	<1 [<1]	1	ug/L	~
Total Chromium	<1 [<1]	1	ug/L	~
Total Cobalt	<0.1 [0.1]	0.1	ug/L	0.9
Total Copper	2 [1]	1	ug/L	1
Total Europium	<1 [<1]	1	ug/L	~
Total Gallium	<1 [<1]	1	ug/L	~
Total Iron	286 [291]	20	ug/L	300

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 491080

Sample Description	Dup.2
Sample Date	2/17/2023
Lab ID	1852157

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Lanthanum	<1 [<1]	1	ug/L	~
Total Lead	0.1 [0.1]	0.1	ug/L	1
Total Lithium	<5 [<5]	5	ug/L	~
Total Magnesium	3750 [3810]	4	ug/L	~
Total Manganese	28 [28]	1	ug/L	~
Total Mercury	<0.1 [<0.1]	0.1	ug/L	0.2
Total Molybdenum	<1 [<1]	1	ug/L	40
Total Nickel	<1 [<1]	1	ug/L	25
Total Niobium	<1 [<1]	1	ug/L	~
Total Potassium	450 [460]	100	ug/L	~
Total Rhodium	<1 [<1]	1	ug/L	~
Total Rubidium	<1 [<1]	1	ug/L	~
Total Scandium	<1 [<1]	1	ug/L	~
Total Selenium	0.3 [<0.2]	0.2	ug/L	100
Total Silicon	1300 [1300]	600	ug/L	~
Total Silver	<0.1 [<0.1]	0.1	ug/L	0.1
Total Sodium	1300 [1300]	100	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 491080

Sample Description	Dup.2
Sample Date	2/17/2023
Lab ID	1852157

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Strontium	30 [30]	1	ug/L	~
Total Sulphur	<800 [<800]	800	ug/L	~
Total Tellurium	<1 [<1]	1	ug/L	~
Total Thallium	<0.1 [<0.1]	0.1	ug/L	0.3
Total Thorium	<1 [<1]	1	ug/L	~
Total Tin	<1 [<1]	1	ug/L	~
Total Titanium	<1 [<1]	1	ug/L	~
Total Tungsten	<1 [<1]	1	ug/L	30
Total Uranium	<1 [<1]	1	ug/L	5
Total Vanadium	<1 [<1]	1	ug/L	6
Total Yttrium	<1 [<1]	1	ug/L	~
Total Zinc	6 [6]	1	ug/L	20
Total Zirconium	<1 [<1]	1	ug/L	4

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 491080

Sample Description	KC - 01		SuthLK		Dup1		GerLK			
Sample Date	2/16/2023 12:55 PM		2/16/2023 2:55 PM		2/16/2023		2/17/2023 10:30 AM			
Lab ID	1852149		1852150		1852151		1852152			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	435	10	200	10	440	10	105	10	mg/L	~
Total Suspended Solids	7.67	0.67	1.70	0.67	8.00	0.67	1.00	0.67	mg/L	~

Sample Description	MATR - 02		UWC - 01		NDR - S - 04b		NDR - S - 02			
Sample Date	2/17/2023 11:50 AM		2/17/2023 12:20 PM		2/17/2023 12:50 PM		2/17/2023 2:20 PM			
Lab ID	1852153		1852154		1852155		1852156			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	110	10	35	10	155 [155]	10	150	10	mg/L	~
Total Suspended Solids	2.70	0.67	<0.67	0.67	7.5 [7.5]	1	4.00	0.67	mg/L	~

Sample Description	Dup.2			
Sample Date	2/17/2023			
Lab ID	1852157			
Solids	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	130	10	mg/L	~
Total Suspended Solids	1.00	0.67	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 491080

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	492012
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	Information not provided Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	Adam Gauthier
Date Order Received:	3/2/2023	Analysis Started:	3/2/2023
Arrival Temperature:	8 °C	Analysis Completed:	3/10/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
PRSLk	1855427	Water	Grab		2/22/2023	10:45 AM
WBR-S-04	1855428	Water	Grab		2/22/2023	12:50 PM
WBR-P-03	1855429	Water	Grab		2/22/2023	1:45 PM
WBR-S-06	1855430	Water	Grab		2/22/2023	3:10 PM
JCRK-02	1855431	Water	Grab		2/23/2023	3:00 PM
JCRK-03	1855432	Water	Grab		2/27/2023	12:25 PM
MARLk	1855433	Water	Grab		2/27/2023	1:15 PM
JC-S-01	1855434	Water	Grab		2/27/2023	4:10 PM
WBR-S-07	1855435	Water	Grab		2/28/2023	11:10 AM
NDR-S-06	1855436	Water	Grab		2/28/2023	1:55 PM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 492012

Method	Lab	Description	Reference
Ammonia Water, Low Level (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (0.2um) (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 492012

WORK ORDER RESULTS

Sample Description	PRSLk		WBR - S - 04		WBR - P - 03		WBR - S - 06		
Sample Date	2/22/2023 10:45 AM		2/22/2023 12:50 PM		2/22/2023 1:45 PM		2/22/2023 3:10 PM		
Lab ID	1855427		1855428		1855429		1855430		
	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Dissolved Aluminum	194	1	138	1	168	1	136	1	ug/L

Sample Description	JCRK - 02		JCRK - 03		MARLk		JC - S - 01		
Sample Date	2/23/2023 3:00 PM		2/27/2023 12:25 PM		2/27/2023 1:15 PM		2/27/2023 4:10 PM		
Lab ID	1855431		1855432		1855433		1855434		
	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Dissolved Aluminum	153	1	47	1	65	1	108	1	ug/L

Sample Description	WBR - S - 07		NDR - S - 06		
Sample Date	2/28/2023 11:10 AM		2/28/2023 1:55 PM		
Lab ID	1855435		1855436		
	Result	MDL	Result	MDL	Units
Dissolved Aluminum	122	1	73 [69]	1	ug/L

Sample Description	PRSLk		WBR - S - 04		WBR - P - 03		WBR - S - 06		
Sample Date	2/22/2023 10:45 AM		2/22/2023 12:50 PM		2/22/2023 1:45 PM		2/22/2023 3:10 PM		
Lab ID	1855427		1855428		1855429		1855430		
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Chloride	0.3 [0.4]	0.2	0.7	0.2	0.5	0.2	1.1	0.2	mg/L
Fluoride	<0.05 [<0.05]	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 492012

Sample Description	PRSLk		WBR - S - 04		WBR - P - 03		WBR - S - 06		
Sample Date	2/22/2023 10:45 AM		2/22/2023 12:50 PM		2/22/2023 1:45 PM		2/22/2023 3:10 PM		
Lab ID	1855427		1855428		1855429		1855430		
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	<0.1	0.1	0.1	0.1	mg/L
Nitrite (as N)	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L
Sulphate	0.8 [1.1]	0.5	2.6	0.5	<0.5	0.5	3.3	0.5	mg/L

Sample Description	JCRK - 02		JCRK - 03		MARLk		JC - S - 01		
Sample Date	2/23/2023 3:00 PM		2/27/2023 12:25 PM		2/27/2023 1:15 PM		2/27/2023 4:10 PM		
Lab ID	1855431		1855432		1855433		1855434		
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Chloride	0.4	0.2	6.6	0.2	<0.2	0.2	40.9	0.2	mg/L
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L
Nitrate (as N) (Calc.)	<0.1	0.1	0.1	0.1	<0.1	0.1	<0.1	0.1	mg/L
Nitrite (as N)	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L
Sulphate	2.5	0.5	2.9	0.5	<0.5	0.5	<0.5	0.5	mg/L

Sample Description	WBR - S - 07		NDR - S - 06		
Sample Date	2/28/2023 11:10 AM		2/28/2023 1:55 PM		
Lab ID	1855435		1855436		
Anions	Result	MDL	Result	MDL	Units
Chloride	0.7	0.2	2.7	0.2	mg/L
Fluoride	<0.05	0.05	0.10	0.05	mg/L
Nitrate (as N) (Calc.)	0.1	0.1	0.1	0.1	mg/L
Nitrite (as N)	<0.01	0.01	<0.01	0.01	mg/L
Sulphate	2.1	0.5	0.6	0.5	mg/L

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Canada Nickel Company Inc.

Work Order Number: 492012

Sample Description	PRSLk		WBR - S - 04		WBR - P - 03		WBR - S - 06		
Sample Date	2/22/2023 10:45 AM		2/22/2023 12:50 PM		2/22/2023 1:45 PM		2/22/2023 3:10 PM		
Lab ID	1855427		1855428		1855429		1855430		
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Field pH	6.88	N/A	6.83	N/A	7.6	N/A	7.17	N/A	pH
Field Temp	1.02	N/A	0	N/A	0	N/A	0	N/A	°C

Sample Description	JCRK - 02		JCRK - 03		MARLk		JC - S - 01		
Sample Date	2/23/2023 3:00 PM		2/27/2023 12:25 PM		2/27/2023 1:15 PM		2/27/2023 4:10 PM		
Lab ID	1855431		1855432		1855433		1855434		
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Field pH	5.9	N/A	6.07	N/A	5.95	N/A	5.93	N/A	pH
Field Temp	0	N/A	0.86	N/A	0.11	N/A	0	N/A	°C

Sample Description	WBR - S - 07		NDR - S - 06		
Sample Date	2/28/2023 11:10 AM		2/28/2023 1:55 PM		
Lab ID	1855435		1855436		
Field Parameters	Result	MDL	Result	MDL	Units
Field pH	7.24	N/A	7.5	N/A	pH
Field Temp	0	N/A	0	N/A	°C

Sample Description	PRSLk		WBR - S - 04		WBR - P - 03		WBR - S - 06		
Sample Date	2/22/2023 10:45 AM		2/22/2023 12:50 PM		2/22/2023 1:45 PM		2/22/2023 3:10 PM		
Lab ID	1855427		1855428		1855429		1855430		
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Acidity	12	5	12	5	11	5	10	5	mg/L as CaCO3

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 492012

Sample Description	PRSLk		WBR - S - 04		WBR - P - 03		WBR - S - 06		
Sample Date	2/22/2023 10:45 AM		2/22/2023 12:50 PM		2/22/2023 1:45 PM		2/22/2023 3:10 PM		
Lab ID	1855427		1855428		1855429		1855430		
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Ammonia (as N)	0.055 [0.056]	0.005	0.141	0.005	0.312	0.005	0.098	0.005	mg/L
Conductivity	103	1	109	1	44	1	151	1	µS/cm
Dissolved Organic Carbon	39	2	32.2	0.4	43	2	38	2	mg/L
Free Cyanide	0.003 [0.003]	0.001	0.004	0.001	<0.001	0.001	0.004	0.001	mg/L
M-Alkalinity (pH 4.5)	52	2	56	2	19	2	76	2	mg/L as CaCO3
pH	7.3	N/A	7.02	N/A	6.22	N/A	7.36	N/A	pH
Strong Acid Dissociable Cyanide	<0.002	0.002	0.003	0.002	0.003 [0.003]	0.002	<0.002	0.002	mg/L
Total Hardness (as CaCO3) (Calc.)	55.2	0.1	58.3	0.1	23.7	0.1	72.4	0.1	mg/L
Total Phosphorus (as P)	0.024	0.002	0.041	0.002	0.043	0.002	0.059	0.002	mg/L
Weak Acid Dissociable Cyanide	<0.001	0.001	0.002	0.001	0.002	0.001	0.001	0.001	mg/L

Sample Description	JCRK - 02		JCRK - 03		MARLk		JC - S - 01		
Sample Date	2/23/2023 3:00 PM		2/27/2023 12:25 PM		2/27/2023 1:15 PM		2/27/2023 4:10 PM		
Lab ID	1855431		1855432		1855433		1855434		
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Acidity	14	5	8	5	11	5	15	5	mg/L as CaCO3
Ammonia (as N)	0.141	0.005	0.086	0.005	0.104	0.005	0.244	0.005	mg/L
Conductivity	48	1	257	1	59	1	170	1	µS/cm
Dissolved Organic Carbon	30.1	0.4	18.3	0.4	22.6	0.4	36.6	0.4	mg/L
Free Cyanide	0.004	0.001	0.004	0.001	0.004	0.001	0.006	0.001	mg/L
M-Alkalinity (pH 4.5)	20	2	129	2	31	2	15	2	mg/L as CaCO3

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Canada Nickel Company Inc.

Work Order Number: 492012

Sample Description	JCRK - 02		JCRK - 03		MARLk		JC - S - 01		
Sample Date	2/23/2023 3:00 PM		2/27/2023 12:25 PM		2/27/2023 1:15 PM		2/27/2023 4:10 PM		
Lab ID	1855431		1855432		1855433		1855434		
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
pH	6.44	N/A	7.71	N/A	6.94	N/A	6.01	N/A	pH
Strong Acid Dissociable Cyanide	<0.002	0.002	<0.002	0.002	<0.002	0.002	0.002	0.002	mg/L
Total Hardness (as CaCO3) (Calc.)	24.6	0.1	111.0	0.1	31.3	0.1	33.0	0.1	mg/L
Total Phosphorus (as P)	0.046	0.002	0.035	0.002	0.034	0.002	0.068	0.002	mg/L
Weak Acid Dissociable Cyanide	0.002	0.001	0.001	0.001	0.002	0.001	<0.001	0.001	mg/L

Sample Description	WBR - S - 07		NDR - S - 06		
Sample Date	2/28/2023 11:10 AM		2/28/2023 1:55 PM		
Lab ID	1855435		1855436		
General Chemistry	Result	MDL	Result	MDL	Units
Acidity	9	5	<5	5	mg/L as CaCO3
Ammonia (as N)	0.111	0.005	0.089	0.005	mg/L
Conductivity	145	1	138	1	µS/cm
Dissolved Organic Carbon	31.8	0.4	30.6	0.4	mg/L
Free Cyanide	0.004	0.001	0.004	0.001	mg/L
M-Alkalinity (pH 4.5)	73	2	66	2	mg/L as CaCO3
pH	7.45	N/A	7.38	N/A	pH
Strong Acid Dissociable Cyanide	<0.002	0.002	<0.002	0.002	mg/L
Total Hardness (as CaCO3) (Calc.)	63.7	0.1	64.6	0.1	mg/L
Total Phosphorus (as P)	0.056	0.002	0.037	0.002	mg/L
Weak Acid Dissociable Cyanide	<0.001	0.001	<0.001	0.001	mg/L

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Canada Nickel Company Inc.

Work Order Number: 492012

Sample Description	PRSLk		WBR - S - 04		WBR - P - 03		WBR - S - 06		
Sample Date	2/22/2023 10:45 AM		2/22/2023 12:50 PM		2/22/2023 1:45 PM		2/22/2023 3:10 PM		
Lab ID	1855427		1855428		1855429		1855430		
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Total Mercury	7.53	0.01	5.18	0.01	4.68	0.01	6.26	0.01	ng/L

Sample Description	JCRK - 02		JCRK - 03		MARLk		JC - S - 01		
Sample Date	2/23/2023 3:00 PM		2/27/2023 12:25 PM		2/27/2023 1:15 PM		2/27/2023 4:10 PM		
Lab ID	1855431		1855432		1855433		1855434		
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Total Mercury	5.54	0.01	3.08	0.01	0.84	0.01	6.43	0.01	ng/L

Sample Description	WBR - S - 07		NDR - S - 06		
Sample Date	2/28/2023 11:10 AM		2/28/2023 1:55 PM		
Lab ID	1855435		1855436		
Mercury (Trace)	Result	MDL	Result	MDL	Units
Total Mercury	5.70	0.01	3.57	0.01	ng/L

Sample Description	PRSLk		WBR - S - 04		WBR - P - 03		WBR - S - 06		
Sample Date	2/22/2023 10:45 AM		2/22/2023 12:50 PM		2/22/2023 1:45 PM		2/22/2023 3:10 PM		
Lab ID	1855427		1855428		1855429		1855430		
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Dissolved Aluminum	206	1	156	1	189	1	180	1	ug/L
Dissolved Antimony	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L
Dissolved Arsenic	<1	1	<1	1	<1	1	1	1	ug/L
Dissolved Barium	9	1	7	1	5	1	9	1	ug/L

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Canada Nickel Company Inc.

Work Order Number: 492012

Sample Description	PRSLk		WBR - S - 04		WBR - P - 03		WBR - S - 06		
Sample Date	2/22/2023 10:45 AM		2/22/2023 12:50 PM		2/22/2023 1:45 PM		2/22/2023 3:10 PM		
Lab ID	1855427		1855428		1855429		1855430		
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Dissolved Beryllium	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L
Dissolved Bismuth	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Boron	<2	2	<2	2	<2	2	<2	2	ug/L
Dissolved Cadmium	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L
Dissolved Calcium	15800	50	16200	50	6480	50	20400	500	ug/L
Dissolved Cerium	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Cesium	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Chromium	2	1	3	1	2	1	3	1	ug/L
Dissolved Cobalt	0.4	0.1	0.6	0.1	1.0	0.1	0.4	0.1	ug/L
Dissolved Copper	1	1	1	1	<1	1	2	1	ug/L
Dissolved Europium	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Gallium	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Iron	552	20	740	200	900	200	760	200	ug/L
Dissolved Lanthanum	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Lead	0.1	0.1	0.3	0.1	0.5	0.1	0.3	0.1	ug/L
Dissolved Lithium	<5	5	<5	5	<5	5	<5	5	ug/L
Dissolved Magnesium	3770	4	3920	4	1750	4	5140	4	ug/L
Dissolved Manganese	42	1	86	1	263	1	23	1	ug/L
Dissolved Mercury	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L
Dissolved Molybdenum	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Nickel	<1	1	<1	1	<1	1	1	1	ug/L
Dissolved Niobium	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Phosphorus	<50	50	<50	50	<50	50	<50	50	ug/L
Dissolved Potassium	370	100	360	100	220	100	530	100	ug/L

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 492012

Sample Description	PRSLk	WBR - S - 04	WBR - P - 03	WBR - S - 06
Sample Date	2/22/2023 10:45 AM	2/22/2023 12:50 PM	2/22/2023 1:45 PM	2/22/2023 3:10 PM
Lab ID	1855427	1855428	1855429	1855430

Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Dissolved Rhodium	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Rubidium	<1	1	<1	1	<1	1	1	1	ug/L
Dissolved Scandium	<1	1	1	1	1	1	1	1	ug/L
Dissolved Selenium	0.2	0.2	<0.2	0.2	<0.2	0.2	<0.2	0.2	ug/L
Dissolved Silicon	2000	600	2800	600	3000	600	3200	600	ug/L
Dissolved Silver	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L
Dissolved Sodium	1640	100	1810	100	570	100	2510	100	ug/L
Dissolved Strontium	29	1	28	1	11	1	38	1	ug/L
Dissolved Sulfur	860	800	1100	800	<800	800	1400	800	ug/L
Dissolved Tellurium	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Thallium	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L
Dissolved Thorium	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Tin	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Titanium	4	1	6	1	6	1	8	1	ug/L
Dissolved Tungsten	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Uranium	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Vanadium	<1	1	<1	1	<1	1	1	1	ug/L
Dissolved Yttrium	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Zinc	4	1	5	1	10	1	3	1	ug/L
Dissolved Zirconium	1	1	2	1	<1	1	2	1	ug/L

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 492012

Sample Description	JCRK - 02		JCRK - 03		MARLk		JC - S - 01		
Sample Date	2/23/2023 3:00 PM		2/27/2023 12:25 PM		2/27/2023 1:15 PM		2/27/2023 4:10 PM		
Lab ID	1855431		1855432		1855433		1855434		
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Dissolved Aluminum	211	1	125	1	80	1	103	1	ug/L
Dissolved Antimony	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L
Dissolved Arsenic	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Barium	4	1	13	1	4	1	6	1	ug/L
Dissolved Beryllium	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L
Dissolved Bismuth	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Boron	<2	2	<2	2	<2	2	<2	2	ug/L
Dissolved Cadmium	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L
Dissolved Calcium	7270	50	33100	500	9270	50	9440	50	ug/L
Dissolved Cerium	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Cesium	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Chromium	2	1	3	1	1	1	1	1	ug/L
Dissolved Cobalt	0.3	0.1	0.4	0.1	0.3	0.1	0.8	0.1	ug/L
Dissolved Copper	2	1	<1	1	<1	1	<1	1	ug/L
Dissolved Europium	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Gallium	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Iron	660	200	607	20	454	20	480	20	ug/L
Dissolved Lanthanum	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Lead	0.4	0.1	0.2	0.1	0.3	0.1	0.7	0.1	ug/L
Dissolved Lithium	<5	5	<5	5	<5	5	<5	5	ug/L
Dissolved Magnesium	1730	4	7880	4	1730	4	2160	4	ug/L
Dissolved Manganese	21	1	57	1	91	1	98	1	ug/L
Dissolved Mercury	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L
Dissolved Molybdenum	<1	1	<1	1	<1	1	<1	1	ug/L

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 492012

Sample Description	JCRK - 02		JCRK - 03		MARLk		JC - S - 01		
Sample Date	2/23/2023 3:00 PM		2/27/2023 12:25 PM		2/27/2023 1:15 PM		2/27/2023 4:10 PM		
Lab ID	1855431		1855432		1855433		1855434		
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Dissolved Nickel	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Niobium	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Phosphorus	<50	50	<50	50	<50	50	<50	50	ug/L
Dissolved Potassium	300	100	1040	100	180	100	190	100	ug/L
Dissolved Rhodium	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Rubidium	1	1	2	1	<1	1	<1	1	ug/L
Dissolved Scandium	<1	1	2	1	<1	1	1	1	ug/L
Dissolved Selenium	<0.2	0.2	<0.2	0.2	<0.2	0.2	0.2	0.2	ug/L
Dissolved Silicon	2500	600	4100	600	1600	600	2900	600	ug/L
Dissolved Silver	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L
Dissolved Sodium	900	100	5900	100	520	100	19100	100	ug/L
Dissolved Strontium	14	1	59	1	12	1	16	1	ug/L
Dissolved Sulfur	<800	800	880	800	<800	800	<800	800	ug/L
Dissolved Tellurium	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Thallium	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L
Dissolved Thorium	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Tin	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Titanium	9	1	6	1	4	1	3	1	ug/L
Dissolved Tungsten	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Uranium	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Vanadium	<1	1	1	1	<1	1	<1	1	ug/L
Dissolved Yttrium	<1	1	<1	1	<1	1	<1	1	ug/L
Dissolved Zinc	7	1	12	1	4	1	10	1	ug/L
Dissolved Zirconium	2	1	2	1	<1	1	<1	1	ug/L

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 492012

Sample Description	WBR - S - 07		NDR - S - 06		
Sample Date	2/28/2023 11:10 AM		2/28/2023 1:55 PM		
Lab ID	1855435		1855436		
Metals (Dissolved)	Result	MDL	Result	MDL	Units
Dissolved Aluminum	158	1	87 [87]	1	ug/L
Dissolved Antimony	<0.5	0.5	<0.5 [<0.5]	0.5	ug/L
Dissolved Arsenic	<1	1	<1 [<1]	1	ug/L
Dissolved Barium	7	1	5 [5]	1	ug/L
Dissolved Beryllium	<0.5	0.5	<0.5 [<0.5]	0.5	ug/L
Dissolved Bismuth	<1	1	<1 [<1]	1	ug/L
Dissolved Boron	<2	2	<2 [<2]	2	ug/L
Dissolved Cadmium	<0.1	0.1	<0.1 [<0.1]	0.1	ug/L
Dissolved Calcium	19900	50	18000 [17500]	50	ug/L
Dissolved Cerium	<1	1	<1 [<1]	1	ug/L
Dissolved Cesium	<1	1	<1 [<1]	1	ug/L
Dissolved Chromium	2	1	<1 [2]	1	ug/L
Dissolved Cobalt	0.3	0.1	0.2 [0.2]	0.1	ug/L
Dissolved Copper	1	1	<1 [<1]	1	ug/L
Dissolved Europium	<1	1	<1 [<1]	1	ug/L
Dissolved Gallium	<1	1	<1 [<1]	1	ug/L
Dissolved Iron	720	200	584 [572]	20	ug/L

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 492012

Sample Description	WBR - S - 07		NDR - S - 06		
Sample Date	2/28/2023 11:10 AM		2/28/2023 1:55 PM		
Lab ID	1855435		1855436		
Metals (Dissolved)	Result	MDL	Result	MDL	Units
Dissolved Lanthanum	<1	1	<1 [<1]	1	ug/L
Dissolved Lead	0.2	0.1	0.1 [0.1]	0.1	ug/L
Dissolved Lithium	<5	5	<5 [<5]	5	ug/L
Dissolved Magnesium	4800	4	4860 [4700]	4	ug/L
Dissolved Manganese	20	1	28 [28]	1	ug/L
Dissolved Mercury	<0.1	0.1	<0.1 [<0.1]	0.1	ug/L
Dissolved Molybdenum	<1	1	<1 [<1]	1	ug/L
Dissolved Nickel	<1	1	<1 [<1]	1	ug/L
Dissolved Niobium	<1	1	<1 [<1]	1	ug/L
Dissolved Phosphorus	<50	50	<50 [<50]	50	ug/L
Dissolved Potassium	450	100	390 [380]	100	ug/L
Dissolved Rhodium	<1	1	<1 [<1]	1	ug/L
Dissolved Rubidium	1	1	<1 [<1]	1	ug/L
Dissolved Scandium	1	1	1 [1]	1	ug/L
Dissolved Selenium	0.2	0.2	<0.2 [<0.2]	0.2	ug/L
Dissolved Silicon	3100	600	2700 [2800]	600	ug/L
Dissolved Silver	<0.1	0.1	<0.1 [<0.1]	0.1	ug/L

CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 492012

Sample Description	WBR - S - 07		NDR - S - 06		
Sample Date	2/28/2023 11:10 AM		2/28/2023 1:55 PM		
Lab ID	1855435		1855436		
Metals (Dissolved)	Result	MDL	Result	MDL	Units
Dissolved Sodium	2340	100	2990 [2880]	100	ug/L
Dissolved Strontium	35	1	27 [26]	1	ug/L
Dissolved Sulfur	860	800	<800 [<800]	800	ug/L
Dissolved Tellurium	<1	1	<1 [<1]	1	ug/L
Dissolved Thallium	<0.1	0.1	<0.1 [<0.1]	0.1	ug/L
Dissolved Thorium	<1	1	<1 [<1]	1	ug/L
Dissolved Tin	<1	1	<1 [<1]	1	ug/L
Dissolved Titanium	7	1	4 [3]	1	ug/L
Dissolved Tungsten	<1	1	<1 [<1]	1	ug/L
Dissolved Uranium	<1	1	<1 [<1]	1	ug/L
Dissolved Vanadium	<1	1	<1 [<1]	1	ug/L
Dissolved Yttrium	<1	1	<1 [<1]	1	ug/L
Dissolved Zinc	4	1	6 [5]	1	ug/L
Dissolved Zirconium	2	1	<1 [1]	1	ug/L

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 492012

Sample Description	PRSLk	WBR - S - 04	WBR - P - 03	WBR - S - 06
Sample Date	2/22/2023 10:45 AM	2/22/2023 12:50 PM	2/22/2023 1:45 PM	2/22/2023 3:10 PM
Lab ID	1855427	1855428	1855429	1855430

Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Total Aluminum	221	1	691	10	281	1	711	10	ug/L
Total Antimony	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L
Total Arsenic	<1	1	1	1	<1	1	2	1	ug/L
Total Barium	9	1	10	1	6	1	13	1	ug/L
Total Beryllium	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L
Total Bismuth	<1	1	<1	1	<1	1	<1	1	ug/L
Total Boron	<2	2	<2	2	<2	2	<2	2	ug/L
Total Cadmium	0.03	0.02	0.03	0.02	0.03	0.02	0.04	0.02	ug/L
Total Calcium	15900	50	16500	50	6630	50	20800	500	ug/L
Total Cerium	<1	1	1	1	<1	1	2	1	ug/L
Total Cesium	<1	1	<1	1	<1	1	<1	1	ug/L
Total Chromium	<1	1	2	1	1	1	2	1	ug/L
Total Cobalt	0.3	0.1	0.7	0.1	1.1	0.1	0.5	0.1	ug/L
Total Copper	2	1	2	1	1	1	3	1	ug/L
Total Europium	<1	1	<1	1	<1	1	<1	1	ug/L
Total Gallium	<1	1	<1	1	<1	1	<1	1	ug/L
Total Iron	571	20	1400	200	1100	200	1400	200	ug/L
Total Lanthanum	<1	1	<1	1	<1	1	<1	1	ug/L
Total Lead	0.2	0.1	0.6	0.1	0.7	0.1	0.6	0.1	ug/L
Total Lithium	<5	5	<5	5	<5	5	<5	5	ug/L
Total Magnesium	3860	4	4060	4	1760	4	5340	4	ug/L
Total Manganese	44	1	101	1	295	1	34	1	ug/L
Total Mercury	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L
Total Molybdenum	<1	1	<1	1	<1	1	<1	1	ug/L

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 492012

Sample Description	PRSLk	WBR - S - 04	WBR - P - 03	WBR - S - 06	
Sample Date	2/22/2023 10:45 AM	2/22/2023 12:50 PM	2/22/2023 1:45 PM	2/22/2023 3:10 PM	
Lab ID	1855427	1855428	1855429	1855430	

Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Total Nickel	<1	1	1	1	<1	1	2	1	ug/L
Total Niobium	<1	1	<1	1	<1	1	<1	1	ug/L
Total Potassium	370	100	490	100	290	100	720	100	ug/L
Total Rhodium	<1	1	<1	1	<1	1	<1	1	ug/L
Total Rubidium	<1	1	2	1	1	1	2	1	ug/L
Total Scandium	<1	1	2	1	1	1	2	1	ug/L
Total Selenium	<0.2	0.2	<0.2	0.2	<0.2	0.2	<0.2	0.2	ug/L
Total Silicon	2100	600	4000	600	3200	600	4300	600	ug/L
Total Silver	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L
Total Sodium	1680	100	1890	100	860	100	2770	100	ug/L
Total Strontium	30	1	31	1	13	1	41	1	ug/L
Total Sulphur	930	800	1000	800	<800	800	1300	800	ug/L
Total Tellurium	<1	1	<1	1	<1	1	<1	1	ug/L
Total Thallium	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L
Total Thorium	<1	1	<1	1	<1	1	<1	1	ug/L
Total Tin	<1	1	<1	1	<1	1	<1	1	ug/L
Total Titanium	5	1	28	1	9	1	30	1	ug/L
Total Tungsten	<1	1	<1	1	<1	1	<1	1	ug/L
Total Uranium	<1	1	<1	1	<1	1	<1	1	ug/L
Total Vanadium	<1	1	2	1	<1	1	2	1	ug/L
Total Yttrium	<1	1	<1	1	<1	1	<1	1	ug/L
Total Zinc	5	1	9	1	11	1	7	1	ug/L
Total Zirconium	1	1	2	1	<1	1	3	1	ug/L

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 492012

Sample Description	JCRK - 02		JCRK - 03		MARLk		JC - S - 01		
Sample Date	2/23/2023 3:00 PM		2/27/2023 12:25 PM		2/27/2023 1:15 PM		2/27/2023 4:10 PM		
Lab ID	1855431		1855432		1855433		1855434		
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Total Aluminum	1020	10	522	1	378	1	208	1	ug/L
Total Antimony	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L
Total Arsenic	<1	1	<1	1	<1	1	<1	1	ug/L
Total Barium	12	1	16	1	6	1	7	1	ug/L
Total Beryllium	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L
Total Bismuth	<1	1	<1	1	<1	1	<1	1	ug/L
Total Boron	<2	2	<2	2	<2	2	<2	2	ug/L
Total Cadmium	0.04	0.02	0.03	0.02	0.03	0.02	0.05	0.02	ug/L
Total Calcium	6910	50	33400	500	9180	50	9730	50	ug/L
Total Cerium	1	1	<1	1	<1	1	<1	1	ug/L
Total Cesium	<1	1	<1	1	<1	1	<1	1	ug/L
Total Chromium	3	1	2	1	<1	1	1	1	ug/L
Total Cobalt	0.6	0.1	0.5	0.1	0.5	0.1	0.6	0.1	ug/L
Total Copper	2	1	1	1	1	1	1	1	ug/L
Total Europium	<1	1	<1	1	<1	1	<1	1	ug/L
Total Gallium	<1	1	<1	1	<1	1	<1	1	ug/L
Total Iron	1500	200	1100	200	760	200	648	20	ug/L
Total Lanthanum	<1	1	<1	1	<1	1	<1	1	ug/L
Total Lead	0.8	0.1	0.4	0.1	0.6	0.1	0.9	0.1	ug/L
Total Lithium	<5	5	<5	5	<5	5	<5	5	ug/L
Total Magnesium	1870	4	7990	4	1780	4	2170	4	ug/L
Total Manganese	39	1	64	1	116	1	126	1	ug/L
Total Mercury	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L
Total Molybdenum	<1	1	<1	1	<1	1	<1	1	ug/L

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 492012

Sample Description	JCRK - 02		JCRK - 03		MARLk		JC - S - 01		
Sample Date	2/23/2023 3:00 PM		2/27/2023 12:25 PM		2/27/2023 1:15 PM		2/27/2023 4:10 PM		
Lab ID	1855431		1855432		1855433		1855434		
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Total Nickel	2	1	1	1	<1	1	<1	1	ug/L
Total Niobium	<1	1	<1	1	<1	1	<1	1	ug/L
Total Potassium	500	100	1110	100	290	100	220	100	ug/L
Total Rhodium	<1	1	<1	1	<1	1	<1	1	ug/L
Total Rubidium	3	1	2	1	1	1	<1	1	ug/L
Total Scandium	2	1	2	1	<1	1	1	1	ug/L
Total Selenium	<0.2	0.2	<0.2	0.2	<0.2	0.2	<0.2	0.2	ug/L
Total Silicon	3800	600	4600	600	2000	600	3100	600	ug/L
Total Silver	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L
Total Sodium	1070	100	5790	100	600	100	19500	100	ug/L
Total Strontium	16	1	60	1	13	1	17	1	ug/L
Total Sulphur	<800	800	910	800	<800	800	<800	800	ug/L
Total Tellurium	<1	1	<1	1	<1	1	<1	1	ug/L
Total Thallium	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L
Total Thorium	<1	1	<1	1	<1	1	<1	1	ug/L
Total Tin	<1	1	<1	1	<1	1	<1	1	ug/L
Total Titanium	42	1	23	1	16	1	7	1	ug/L
Total Tungsten	<1	1	<1	1	<1	1	<1	1	ug/L
Total Uranium	<1	1	<1	1	<1	1	<1	1	ug/L
Total Vanadium	2	1	1	1	<1	1	<1	1	ug/L
Total Yttrium	<1	1	<1	1	<1	1	<1	1	ug/L
Total Zinc	10	1	18	1	7	1	11	1	ug/L
Total Zirconium	2	1	1	1	<1	1	<1	1	ug/L

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 492012

Sample Description	WBR - S - 07		NDR - S - 06		
Sample Date	2/28/2023 11:10 AM		2/28/2023 1:55 PM		
Lab ID	1855435		1855436		
Metals (Total)	Result	MDL	Result	MDL	Units
Total Aluminum	904	10	364 [361]	1	ug/L
Total Antimony	<0.5	0.5	<0.5 [<0.5]	0.5	ug/L
Total Arsenic	1	1	<1 [<1]	1	ug/L
Total Barium	12	1	6 [6]	1	ug/L
Total Beryllium	<0.5	0.5	<0.5 [<0.5]	0.5	ug/L
Total Bismuth	<1	1	<1 [<1]	1	ug/L
Total Boron	<2	2	<2 [<2]	2	ug/L
Total Cadmium	0.04	0.02	<0.02 [0.03]	0.02	ug/L
Total Calcium	20700	500	17500 [17500]	50	ug/L
Total Cerium	2	1	<1 [<1]	1	ug/L
Total Cesium	<1	1	<1 [<1]	1	ug/L
Total Chromium	2	1	1 [1]	1	ug/L
Total Cobalt	0.6	0.1	0.3 [0.3]	0.1	ug/L
Total Copper	2	1	<1 [<1]	1	ug/L
Total Europium	<1	1	<1 [<1]	1	ug/L
Total Gallium	<1	1	<1 [<1]	1	ug/L
Total Iron	1700	200	940 [935]	20	ug/L

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 492012

Sample Description	WBR - S - 07		NDR - S - 06		
Sample Date	2/28/2023 11:10 AM		2/28/2023 1:55 PM		
Lab ID	1855435		1855436		
Metals (Total)	Result	MDL	Result	MDL	Units
Total Lanthanum	<1	1	<1 [<1]	1	ug/L
Total Lead	0.7	0.1	0.3 [0.3]	0.1	ug/L
Total Lithium	<5	5	<5 [<5]	5	ug/L
Total Magnesium	5030	4	4790 [4830]	4	ug/L
Total Manganese	47	1	38 [37]	1	ug/L
Total Mercury	<0.1	0.1	<0.1 [<0.1]	0.1	ug/L
Total Molybdenum	<1	1	<1 [<1]	1	ug/L
Total Nickel	2	1	<1 [1]	1	ug/L
Total Niobium	<1	1	<1 [<1]	1	ug/L
Total Potassium	640	100	450 [460]	100	ug/L
Total Rhodium	<1	1	<1 [<1]	1	ug/L
Total Rubidium	3	1	1 [1]	1	ug/L
Total Scandium	2	1	1 [1]	1	ug/L
Total Selenium	<0.2	0.2	<0.2 [<0.2]	0.2	ug/L
Total Silicon	4600	600	3200 [3100]	600	ug/L
Total Silver	<0.1	0.1	<0.1 [<0.1]	0.1	ug/L
Total Sodium	2410	100	2900 [2940]	100	ug/L

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 492012

Sample Description	WBR - S - 07		NDR - S - 06		
Sample Date	2/28/2023 11:10 AM		2/28/2023 1:55 PM		
Lab ID	1855435		1855436		
Metals (Total)	Result	MDL	Result	MDL	Units
Total Strontium	39	1	27 [27]	1	ug/L
Total Sulphur	<800	800	<800 [<800]	800	ug/L
Total Tellurium	<1	1	<1 [<1]	1	ug/L
Total Thallium	<0.1	0.1	<0.1 [<0.1]	0.1	ug/L
Total Thorium	<1	1	<1 [<1]	1	ug/L
Total Tin	<1	1	<1 [<1]	1	ug/L
Total Titanium	38	1	15 [15]	1	ug/L
Total Tungsten	<1	1	<1 [<1]	1	ug/L
Total Uranium	<1	1	<1 [<1]	1	ug/L
Total Vanadium	2	1	<1 [<1]	1	ug/L
Total Yttrium	<1	1	<1 [<1]	1	ug/L
Total Zinc	8	1	5 [6]	1	ug/L
Total Zirconium	3	1	1 [1]	1	ug/L

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 492012

Sample Description	PRSLk		WBR - S - 04		WBR - P - 03		WBR - S - 06		
Sample Date	2/22/2023 10:45 AM		2/22/2023 12:50 PM		2/22/2023 1:45 PM		2/22/2023 3:10 PM		
Lab ID	1855427		1855428		1855429		1855430		
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Total Dissolved Solids	120	10	140	10	100	10	155	10	mg/L
Total Suspended Solids	<0.67	0.67	6.70	0.67	3.30	0.67	5.70	0.67	mg/L

Sample Description	JCRK - 02		JCRK - 03		MARLk		JC - S - 01		
Sample Date	2/23/2023 3:00 PM		2/27/2023 12:25 PM		2/27/2023 1:15 PM		2/27/2023 4:10 PM		
Lab ID	1855431		1855432		1855433		1855434		
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units
Total Dissolved Solids	100 [100]	10	180	10	65	10	165	10	mg/L
Total Suspended Solids	7.5 [7.5]	1	7.00	0.67	6.70	0.67	9.33	0.67	mg/L

Sample Description	WBR - S - 07		NDR - S - 06		
Sample Date	2/28/2023 11:10 AM		2/28/2023 1:55 PM		
Lab ID	1855435		1855436		
Solids	Result	MDL	Result	MDL	Units
Total Dissolved Solids	140	10	130	10	mg/L
Total Suspended Solids	9.33	0.67	3.30	0.67	mg/L

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 492012

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

Quality Control: All associated Quality Control data is available on request.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	492826
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	Adam Gauthier & Jacques Picotte
Date Order Received:	3/13/2023	Analysis Started:	3/13/2023
Arrival Temperature:	6 °C	Analysis Completed:	3/27/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
PC-01	1858178	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	3/10/2023	10:25 AM
WBR-S-Ref	1858179	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	3/10/2023	9:50 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 492826

Method	Lab	Description	Reference
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (0.2um) (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 492826

WORK ORDER RESULTS

Sample Description	PC - 01		WBR - S - Ref			
Sample Date	3/10/2023 10:25 AM		3/10/2023 9:50 AM			
Lab ID	1858178		1858179			
	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	192	1	143 [136]	1	ug/L	~
Dissolved Antimony	<0.5	0.5	<0.5 [<0.5]	0.5	ug/L	~
Dissolved Arsenic	<1	1	1 [1]	1	ug/L	~
Dissolved Barium	8	1	6 [6]	1	ug/L	~
Dissolved Beryllium	<0.5	0.5	<0.5 [<0.5]	0.5	ug/L	~
Dissolved Bismuth	<1	1	<1 [<1]	1	ug/L	~
Dissolved Boron	3	2	9 [9]	2	ug/L	~
Dissolved Cadmium	<0.1	0.1	<0.1 [<0.1]	0.1	ug/L	~
Dissolved Calcium	17400	50	20000 [20300]	500	ug/L	~
Dissolved Cerium	<1	1	<1 [<1]	1	ug/L	~
Dissolved Cesium	<1	1	<1 [<1]	1	ug/L	~
Dissolved Chromium	2	1	2 [2]	1	ug/L	~
Dissolved Cobalt	<0.1	0.1	0.1 [0.1]	0.1	ug/L	~
Dissolved Copper	1	1	2 [2]	1	ug/L	~
Dissolved Europium	<1	1	<1 [<1]	1	ug/L	~
Dissolved Gallium	<1	1	<1 [<1]	1	ug/L	~

CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 492826

Sample Description	PC - 01		WBR - S - Ref			
Sample Date	3/10/2023 10:25 AM		3/10/2023 9:50 AM			
Lab ID	1858178		1858179			
	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Iron	516	20	590 [647]	200	ug/L	~
Dissolved Lanthanum	<1	1	<1 [<1]	1	ug/L	~
Dissolved Lead	0.1	0.1	0.2 [0.2]	0.1	ug/L	~
Dissolved Lithium	<5	5	<5 [<5]	5	ug/L	~
Dissolved Magnesium	4350	4	4660 [4590]	4	ug/L	~
Dissolved Manganese	15	1	13 [13]	1	ug/L	~
Dissolved Mercury	<0.1	0.1	<0.1 [<0.1]	0.1	ug/L	0.2
Dissolved Molybdenum	<1	1	<1 [<1]	1	ug/L	~
Dissolved Nickel	<1	1	<1 [<1]	1	ug/L	~
Dissolved Niobium	<1	1	<1 [<1]	1	ug/L	~
Dissolved Phosphorus	<50	50	<50 [<50]	50	ug/L	~
Dissolved Potassium	390	100	430 [420]	100	ug/L	~
Dissolved Rhodium	<1	1	<1 [<1]	1	ug/L	~
Dissolved Rubidium	<1	1	1 [1]	1	ug/L	~
Dissolved Scandium	<1	1	1 [1]	1	ug/L	~
Dissolved Selenium	<0.2	0.2	<0.2 [<0.2]	0.2	ug/L	~
Dissolved Silicon	2500	600	3300 [3200]	600	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 492826

Sample Description	PC - 01		WBR - S - Ref			
Sample Date	3/10/2023 10:25 AM		3/10/2023 9:50 AM			
Lab ID	1858178		1858179			
	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Silver	<0.1	0.1	<0.1 [<0.1]	0.1	ug/L	~
Dissolved Sodium	1850	100	2590 [2570]	100	ug/L	~
Dissolved Strontium	31	1	34 [34]	1	ug/L	~
Dissolved Sulfur	<800	800	1900 [1900]	800	ug/L	~
Dissolved Tellurium	<1	1	<1 [<1]	1	ug/L	~
Dissolved Thallium	<0.1	0.1	<0.1 [<0.1]	0.1	ug/L	~
Dissolved Thorium	<1	1	<1 [<1]	1	ug/L	~
Dissolved Tin	<1	1	<1 [<1]	1	ug/L	~
Dissolved Titanium	4	1	7 [7]	1	ug/L	~
Dissolved Tungsten	<1	1	<1 [<1]	1	ug/L	~
Dissolved Uranium	<1	1	<1 [<1]	1	ug/L	~
Dissolved Vanadium	<1	1	1 [1]	1	ug/L	~
Dissolved Yttrium	<1	1	<1 [<1]	1	ug/L	~
Dissolved Zinc	3	1	4 [5]	1	ug/L	~
Dissolved Zirconium	1	1	2 [2]	1	ug/L	~

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Canada Nickel Company Inc.

Work Order Number: 492826

Sample Description	PC - 01		WBR - S - Ref			
Sample Date	3/10/2023 10:25 AM		3/10/2023 9:50 AM			
Lab ID	1858178		1858179			
Anions	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	0.4 [0.4]	0.2	1.1 [1.1]	0.2	mg/L	~
Fluoride	<0.05 [<0.05]	0.05	<0.05 [<0.05]	0.05	mg/L	~
Nitrate (as N) (Calc.)	0.2	0.1	0.3	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	1.1 [1.1]	0.5	5.2 [5.2]	0.5	mg/L	~

Sample Description	PC - 01		WBR - S - Ref			
Sample Date	3/10/2023 10:25 AM		3/10/2023 9:50 AM			
Lab ID	1858178		1858179			
Field Parameters	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	6.99	N/A	6.7	N/A	pH	~
Field Temp	0	N/A	0.05	N/A	°C	~

Sample Description	PC - 01		WBR - S - Ref			
Sample Date	3/10/2023 10:25 AM		3/10/2023 9:50 AM			
Lab ID	1858178		1858179			
General Chemistry	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	9	5	11	5	mg/L as CaCO3	~
Ammonia (as N)	0.053	0.005	0.060	0.005	mg/L	~
Conductivity	111	1	140	1	µS/cm	~
Dissolved Organic Carbon	36.6	0.8	30	2	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 492826

Sample Description	PC - 01		WBR - S - Ref			
Sample Date	3/10/2023 10:25 AM		3/10/2023 9:50 AM			
Lab ID	1858178		1858179			
General Chemistry	Result	MDL	Result	MDL	Units	Criteria: PWQO
Free Cyanide	0.003	0.001	0.002	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	56	2	66	2	mg/L as CaCO3	~
pH	7.65	N/A	7.25	N/A	pH	~
Strong Acid Dissociable Cyanide	<0.002	0.002	<0.002 [<0.002]	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	61.7	0.1	72.2	0.1	mg/L	~
Total Phosphorus (as P)	0.028	0.002	0.069	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.003	0.001	0.002	0.001	mg/L	~

Sample Description	PC - 01		WBR - S - Ref			
Sample Date	3/10/2023 10:25 AM		3/10/2023 9:50 AM			
Lab ID	1858178		1858179			
Mercury (Trace)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	6.02	0.01	4.61	0.01	ng/L	200

Sample Description	PC - 01		WBR - S - Ref			
Sample Date	3/10/2023 10:25 AM		3/10/2023 9:50 AM			
Lab ID	1858178		1858179			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	387	1	1870 [1830]	1	ug/L	75
Total Antimony	<0.5	0.5	<0.5 [<0.5]	0.5	ug/L	20

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Canada Nickel Company Inc.

Work Order Number: 492826

Sample Description	PC - 01		WBR - S - Ref			
Sample Date	3/10/2023 10:25 AM		3/10/2023 9:50 AM			
Lab ID	1858178		1858179			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Arsenic	<1	1	2 [2]	1	ug/L	5
Total Barium	9	1	17 [17]	1	ug/L	~
Total Beryllium	<0.5	0.5	<0.5 [<0.5]	0.5	ug/L	11
Total Bismuth	<1	1	<1 [<1]	1	ug/L	~
Total Boron	2	2	9 [9]	2	ug/L	200
Total Cadmium	0.02	0.02	0.06 [0.07]	0.02	ug/L	0.1
Total Calcium	16800	50	21000 [20200]	500	ug/L	~
Total Cerium	<1	1	3 [3]	1	ug/L	~
Total Cesium	<1	1	<1 [<1]	1	ug/L	~
Total Chromium	1	1	4 [5]	1	ug/L	~
Total Cobalt	0.1	0.1	1.0 [1.0]	0.1	ug/L	0.9
Total Copper	2	1	3 [4]	1	ug/L	1
Total Europium	<1	1	<1 [<1]	1	ug/L	~
Total Gallium	<1	1	1 [1]	1	ug/L	~
Total Iron	690	200	2450 [2490]	200	ug/L	300
Total Lanthanum	<1	1	2 [2]	1	ug/L	~
Total Lead	0.3	0.1	1.3 [1.3]	0.1	ug/L	1

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Work Order Number: 492826

Sample Description	PC - 01		WBR - S - Ref			
Sample Date	3/10/2023 10:25 AM		3/10/2023 9:50 AM			
Lab ID	1858178		1858179			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Lithium	<5	5	<5 [<5]	5	ug/L	~
Total Magnesium	4270	4	5230 [5180]	4	ug/L	~
Total Manganese	27	1	107 [106]	1	ug/L	~
Total Mercury	<0.1	0.1	<0.1 [<0.1]	0.1	ug/L	0.2
Total Molybdenum	<1	1	<1 [<1]	1	ug/L	40
Total Nickel	<1	1	2 [2]	1	ug/L	25
Total Niobium	<1	1	<1 [<1]	1	ug/L	~
Total Potassium	440	100	870 [860]	100	ug/L	~
Total Rhodium	<1	1	<1 [<1]	1	ug/L	~
Total Rubidium	1	1	4 [4]	1	ug/L	~
Total Scandium	1	1	3 [3]	1	ug/L	~
Total Selenium	<0.2	0.2	<0.2 [<0.2]	0.2	ug/L	100
Total Silicon	2700	600	6550 [6460]	600	ug/L	~
Total Silver	<0.1	0.1	<0.1 [<0.1]	0.1	ug/L	0.1
Total Sodium	1810	100	2700 [2700]	100	ug/L	~
Total Strontium	32	1	42 [41]	1	ug/L	~
Total Sulphur	<800	800	1700 [1700]	800	ug/L	~

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Canada Nickel Company Inc.

Work Order Number: 492826

Sample Description	PC - 01		WBR - S - Ref			
Sample Date	3/10/2023 10:25 AM		3/10/2023 9:50 AM			
Lab ID	1858178		1858179			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Tellurium	<1	1	<1 [<1]	1	ug/L	~
Total Thallium	<0.1	0.1	<0.1 [<0.1]	0.1	ug/L	0.3
Total Thorium	<1	1	<1 [<1]	1	ug/L	~
Total Tin	<1	1	<1 [<1]	1	ug/L	~
Total Titanium	12	1	78 [80]	1	ug/L	~
Total Tungsten	<1	1	<1 [<1]	1	ug/L	30
Total Uranium	<1	1	<1 [<1]	1	ug/L	5
Total Vanadium	<1	1	4 [4]	1	ug/L	6
Total Yttrium	<1	1	<1 [<1]	1	ug/L	~
Total Zinc	4	1	11 [12]	1	ug/L	20
Total Zirconium	1	1	5 [5]	1	ug/L	4

Sample Description	PC - 01		WBR - S - Ref			
Sample Date	3/10/2023 10:25 AM		3/10/2023 9:50 AM			
Lab ID	1858178		1858179			
Solids	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	140	10	155 [155]	10	mg/L	~
Total Suspended Solids	4.30	0.67	14 [14]	1	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 492826

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	493768
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	Adam Gauthier & Michael Hoven
Date Order Received:	3/22/2023	Analysis Started:	3/23/2023
Arrival Temperature:	5 °C	Analysis Completed:	3/31/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
KC-01	1861616	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	3/22/2023	11:30 AM
JCRK-03	1861617	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	3/22/2023	12:10 PM
JC-S-01	1861618	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	3/22/2023	12:50 PM
MARLk	1861619	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	3/22/2023	1:35 PM
NDR-S-02	1861620	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	3/22/2023	2:25 PM
SW-Dup	1861621	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	3/22/2023	

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493768

Method	Lab	Description	Reference
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (0.2um) (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493768

WORK ORDER RESULTS

Sample Description	KC - 01		JCRK - 03		JC - S - 01		MARLk			
Sample Date	3/22/2023 11:30 AM		3/22/2023 12:10 PM		3/22/2023 12:50 PM		3/22/2023 1:35 PM			
Lab ID	1861616		1861617		1861618		1861619			
	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	59	1	59	1	128	1	84	1	ug/L	~

Sample Description	NDR - S - 02		SW - Dup			
Sample Date	3/22/2023 2:25 PM		3/22/2023			
Lab ID	1861620		1861621			
	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	57	1	57	1	ug/L	~

Sample Description	KC - 01		JCRK - 03		JC - S - 01		MARLk			
Sample Date	3/22/2023 11:30 AM		3/22/2023 12:10 PM		3/22/2023 12:50 PM		3/22/2023 1:35 PM			
Lab ID	1861616		1861617		1861618		1861619			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	33.6	0.2	5.8	0.2	56.9	0.2	0.2	0.2	mg/L	~
Fluoride	0.12	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	0.8	0.1	0.1	0.1	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	158.0	0.5	2.3	0.5	<0.5	0.5	<0.5	0.5	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493768

Sample Description	NDR - S - 02		SW - Dup			
Sample Date	3/22/2023 2:25 PM		3/22/2023			
Lab ID	1861620		1861621			
Anions	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	1.4	0.2	1.5	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	0.1	0.1	0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	1.0	0.5	1.0	0.5	mg/L	~

Sample Description	KC - 01		JCRK - 03		JC - S - 01		MARLk			
Sample Date	3/22/2023 11:30 AM		3/22/2023 12:10 PM		3/22/2023 12:50 PM		3/22/2023 1:35 PM			
Lab ID	1861616		1861617		1861618		1861619			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	7.35	N/A	7.42	N/A	6.17	N/A	6.8	N/A	pH	~
Field Temp	0.91	N/A	0.35	N/A	0.07	N/A	0.52	N/A	°C	~

Sample Description	NDR - S - 02			
Sample Date	3/22/2023 2:25 PM			
Lab ID	1861620			
Field Parameters	Result	MDL	Units	Criteria: PWQO
Field pH	7.02	N/A	pH	~
Field Temp	0.06	N/A	°C	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493768

Sample Description	KC - 01		JCRK - 03		JC - S - 01		MARLk			
Sample Date	3/22/2023 11:30 AM		3/22/2023 12:10 PM		3/22/2023 12:50 PM		3/22/2023 1:35 PM			
Lab ID	1861616		1861617		1861618		1861619			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	8	5	8	5	14	5	15	5	mg/L as CaCO3	~
Ammonia (as N)	0.079	0.005	0.062	0.005	0.299	0.005	0.117	0.005	mg/L	~
Conductivity	542	1	266	1	224	1	65	1	µS/cm	~
Dissolved Organic Carbon	19.0	0.4	18.7	0.4	36.3	0.4	23.7	0.4	mg/L	~
Free Cyanide	0.003	0.001	0.003	0.001	0.007	0.001	0.003	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	63	2	134	2	22	2	34	2	mg/L as CaCO3	~
pH	7.49	N/A	7.76	N/A	6.33	N/A	6.69	N/A	pH	~
Strong Acid Dissociable Cyanide	0.003	0.002	0.002	0.002	0.006	0.002	0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	180.0	0.1	115.0	0.1	40.0	0.1	32.2	0.1	mg/L	~
Total Phosphorus (as P)	0.043	0.002	0.039	0.002	0.119	0.002	0.027	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.003	0.001	0.003	0.001	0.005	0.001	0.003	0.001	mg/L	~

Sample Description	NDR - S - 02		SW - Dup			
Sample Date	3/22/2023 2:25 PM		3/22/2023			
Lab ID	1861620		1861621			
General Chemistry	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	15	5	9	5	mg/L as CaCO3	~
Ammonia (as N)	0.072	0.005	0.073	0.005	mg/L	~
Conductivity	155	1	160	1	µS/cm	~
Dissolved Organic Carbon	25.8	0.4	25.9	0.4	mg/L	~
Free Cyanide	0.005	0.001	0.005	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	82	2	85	2	mg/L as CaCO3	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493768

Sample Description	NDR - S - 02		SW - Dup			
Sample Date	3/22/2023 2:25 PM		3/22/2023			
Lab ID	1861620		1861621			
General Chemistry	Result	MDL	Result	MDL	Units	Criteria: PWQO
pH	7.14	N/A	7.33	N/A	pH	~
Strong Acid Dissociable Cyanide	0.002	0.002	0.003	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	73.7	0.1	71.0	0.1	mg/L	~
Total Phosphorus (as P)	0.043	0.002	0.043	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.003	0.001	0.003	0.001	mg/L	~

Sample Description	KC - 01		JCRK - 03		JC - S - 01		MARLk			
Sample Date	3/22/2023 11:30 AM		3/22/2023 12:10 PM		3/22/2023 12:50 PM		3/22/2023 1:35 PM			
Lab ID	1861616		1861617		1861618		1861619			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	3.09	0.01	2.32	0.01	9.13	0.01	3.03	0.01	ng/L	200

Sample Description	NDR - S - 02		SW - Dup			
Sample Date	3/22/2023 2:25 PM		3/22/2023			
Lab ID	1861620		1861621			
Mercury (Trace)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	3.57	0.01	3.15	0.01	ng/L	200

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493768

Sample Description	KC - 01		JCRK - 03		JC - S - 01		MARLk			
Sample Date	3/22/2023 11:30 AM		3/22/2023 12:10 PM		3/22/2023 12:50 PM		3/22/2023 1:35 PM			
Lab ID	1861616		1861617		1861618		1861619			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	60	1	50	1	92	1	85	1	ug/L	~
Dissolved Antimony	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	~
Dissolved Arsenic	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Barium	12	1	15	1	8	1	5	1	ug/L	~
Dissolved Beryllium	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	~
Dissolved Bismuth	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Boron	29	2	5	2	<2	2	<2	2	ug/L	~
Dissolved Cadmium	0.2	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Calcium	53600	500	32400	500	9980	50	9000	50	ug/L	~
Dissolved Cerium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Cesium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Chromium	2	1	2	1	1	1	1	1	ug/L	~
Dissolved Cobalt	0.3	0.1	0.1	0.1	0.2	0.1	0.2	0.1	ug/L	~
Dissolved Copper	3	1	<1	1	1	1	<1	1	ug/L	~
Dissolved Europium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Gallium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Iron	650	200	594	20	514	20	425	20	ug/L	~
Dissolved Lanthanum	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Lead	0.1	0.1	<0.1	0.1	0.6	0.1	0.2	0.1	ug/L	~
Dissolved Lithium	7	5	<5	5	<5	5	<5	5	ug/L	~
Dissolved Magnesium	9520	4	7660	4	2340	4	1850	4	ug/L	~
Dissolved Manganese	39	1	3	1	86	1	109	1	ug/L	~
Dissolved Mercury	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.2
Dissolved Molybdenum	<1	1	<1	1	<1	1	<1	1	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493768

Sample Description	KC - 01		JCRK - 03		JC - S - 01		MARLk			
Sample Date	3/22/2023 11:30 AM		3/22/2023 12:10 PM		3/22/2023 12:50 PM		3/22/2023 1:35 PM			
Lab ID	1861616		1861617		1861618		1861619			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Nickel	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Niobium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Phosphorus	<50	50	<50	50	<50	50	<50	50	ug/L	~
Dissolved Potassium	2470	100	980	100	260	100	350	100	ug/L	~
Dissolved Rhodium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Rubidium	4	1	2	1	<1	1	2	1	ug/L	~
Dissolved Scandium	1	1	2	1	1	1	<1	1	ug/L	~
Dissolved Selenium	2.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	~
Dissolved Silicon	3000	600	4300	600	3300	600	2100	600	ug/L	~
Dissolved Silver	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Sodium	24500	1000	5170	100	24200	1000	540	100	ug/L	~
Dissolved Strontium	153	1	56	1	18	1	13	1	ug/L	~
Dissolved Sulfur	46800	800	1200	800	<800	800	<800	800	ug/L	~
Dissolved Tellurium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Thallium	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Thorium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Tin	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Titanium	4	1	4	1	3	1	4	1	ug/L	~
Dissolved Tungsten	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Uranium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Vanadium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Yttrium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Zinc	38	1	1	1	12	1	4	1	ug/L	~
Dissolved Zirconium	<1	1	1	1	<1	1	<1	1	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493768

Sample Description	NDR - S - 02		SW - Dup			
Sample Date	3/22/2023 2:25 PM		3/22/2023			
Lab ID	1861620		1861621			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	45	1	45	1	ug/L	~
Dissolved Antimony	<0.5	0.5	<0.5	0.5	ug/L	~
Dissolved Arsenic	<1	1	<1	1	ug/L	~
Dissolved Barium	7	1	7	1	ug/L	~
Dissolved Beryllium	<0.5	0.5	<0.5	0.5	ug/L	~
Dissolved Bismuth	<1	1	<1	1	ug/L	~
Dissolved Boron	<2	2	2	2	ug/L	~
Dissolved Cadmium	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Calcium	19200	50	19500	50	ug/L	~
Dissolved Cerium	<1	1	<1	1	ug/L	~
Dissolved Cesium	<1	1	<1	1	ug/L	~
Dissolved Chromium	1	1	<1	1	ug/L	~
Dissolved Cobalt	0.1	0.1	0.1	0.1	ug/L	~
Dissolved Copper	<1	1	<1	1	ug/L	~
Dissolved Europium	<1	1	<1	1	ug/L	~
Dissolved Gallium	<1	1	<1	1	ug/L	~
Dissolved Iron	519	20	528	20	ug/L	~
Dissolved Lanthanum	<1	1	<1	1	ug/L	~
Dissolved Lead	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Lithium	<5	5	<5	5	ug/L	~
Dissolved Magnesium	4910	4	4970	4	ug/L	~
Dissolved Manganese	29	1	18	1	ug/L	~
Dissolved Mercury	<0.1	0.1	<0.1	0.1	ug/L	0.2
Dissolved Molybdenum	<1	1	<1	1	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493768

Sample Description	NDR - S - 02		SW - Dup			
Sample Date	3/22/2023 2:25 PM		3/22/2023			
Lab ID	1861620		1861621			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Nickel	<1	1	<1	1	ug/L	~
Dissolved Niobium	<1	1	<1	1	ug/L	~
Dissolved Phosphorus	<50	50	<50	50	ug/L	~
Dissolved Potassium	500	100	590	100	ug/L	~
Dissolved Rhodium	<1	1	<1	1	ug/L	~
Dissolved Rubidium	<1	1	1	1	ug/L	~
Dissolved Scandium	1	1	1	1	ug/L	~
Dissolved Selenium	<0.5	0.5	<0.5	0.5	ug/L	~
Dissolved Silicon	2800	600	2900	600	ug/L	~
Dissolved Silver	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Sodium	1880	100	1950	100	ug/L	~
Dissolved Strontium	27	1	27	1	ug/L	~
Dissolved Sulfur	<800	800	<800	800	ug/L	~
Dissolved Tellurium	<1	1	<1	1	ug/L	~
Dissolved Thallium	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Thorium	<1	1	<1	1	ug/L	~
Dissolved Tin	<1	1	<1	1	ug/L	~
Dissolved Titanium	2	1	2	1	ug/L	~
Dissolved Tungsten	<1	1	<1	1	ug/L	~
Dissolved Uranium	<1	1	<1	1	ug/L	~
Dissolved Vanadium	<1	1	<1	1	ug/L	~
Dissolved Yttrium	<1	1	<1	1	ug/L	~
Dissolved Zinc	7	1	7	1	ug/L	~
Dissolved Zirconium	<1	1	<1	1	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493768

Sample Description	KC - 01		JCRK - 03		JC - S - 01		MARLk			
Sample Date	3/22/2023 11:30 AM		3/22/2023 12:10 PM		3/22/2023 12:50 PM		3/22/2023 1:35 PM			
Lab ID	1861616		1861617		1861618		1861619			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	673	10	581	1	713	10	352	1	ug/L	75
Total Antimony	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	20
Total Arsenic	<1	1	<1	1	<1	1	<1	1	ug/L	5
Total Barium	17	1	21	1	19	1	7	1	ug/L	~
Total Beryllium	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	11
Total Bismuth	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Boron	25	2	4	2	<2	2	<2	2	ug/L	200
Total Cadmium	0.33	0.02	0.05	0.02	0.19	0.02	0.04	0.02	ug/L	0.1
Total Calcium	50300	500	29900	500	11200	50	8970	50	ug/L	~
Total Cerium	2	1	1	1	1	1	<1	1	ug/L	~
Total Cesium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Chromium	2	1	2	1	3	1	1	1	ug/L	~
Total Cobalt	0.7	0.1	0.4	0.1	0.9	0.1	0.4	0.1	ug/L	0.9
Total Copper	4	1	2	1	3	1	<1	1	ug/L	1
Total Europium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Gallium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Iron	1700	200	1200	200	1400	200	820	200	ug/L	300
Total Lanthanum	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Lead	0.5	0.1	0.4	0.1	3.5	0.1	0.5	0.1	ug/L	1
Total Lithium	7	5	<5	5	<5	5	<5	5	ug/L	~
Total Magnesium	9290	4	7280	4	2590	4	1840	4	ug/L	~
Total Manganese	73	1	81	1	175	1	128	1	ug/L	~
Total Mercury	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.2

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493768

Sample Description	KC - 01		JCRK - 03		JC - S - 01		MARLk			
Sample Date	3/22/2023 11:30 AM		3/22/2023 12:10 PM		3/22/2023 12:50 PM		3/22/2023 1:35 PM			
Lab ID	1861616		1861617		1861618		1861619			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Molybdenum	<1	1	<1	1	<1	1	<1	1	ug/L	40
Total Nickel	3	1	<1	1	4	1	<1	1	ug/L	25
Total Niobium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Potassium	2520	100	1040	100	450	100	400	100	ug/L	~
Total Rhodium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Rubidium	5	1	2	1	2	1	2	1	ug/L	~
Total Scandium	2	1	2	1	2	1	1	1	ug/L	~
Total Selenium	2.2	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	100
Total Silicon	3800	600	4700	600	4200	600	2500	600	ug/L	~
Total Silver	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.1
Total Sodium	23800	100	4870	100	21800	100	530	100	ug/L	~
Total Strontium	151	1	57	1	24	1	14	1	ug/L	~
Total Sulphur	41900	800	<800	800	<800	800	<800	800	ug/L	~
Total Tellurium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Thallium	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.3
Total Thorium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Tin	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Titanium	35	1	26	1	28	1	15	1	ug/L	~
Total Tungsten	<1	1	<1	1	<1	1	<1	1	ug/L	30
Total Uranium	<1	1	<1	1	<1	1	<1	1	ug/L	5
Total Vanadium	2	1	1	1	1	1	<1	1	ug/L	6
Total Yttrium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Zinc	54	1	5	1	31	1	5	1	ug/L	20
Total Zirconium	2	1	2	1	1	1	<1	1	ug/L	4

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493768

Sample Description	NDR - S - 02		SW - Dup			
Sample Date	3/22/2023 2:25 PM		3/22/2023			
Lab ID	1861620		1861621			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	543	1	518	1	ug/L	75
Total Antimony	<0.5	0.5	<0.5	0.5	ug/L	20
Total Arsenic	<1	1	<1	1	ug/L	5
Total Barium	13	1	12	1	ug/L	~
Total Beryllium	<0.5	0.5	<0.5	0.5	ug/L	11
Total Bismuth	<1	1	<1	1	ug/L	~
Total Boron	<2	2	<2	2	ug/L	200
Total Cadmium	0.05	0.02	0.05	0.02	ug/L	0.1
Total Calcium	19200	50	19600	50	ug/L	~
Total Cerium	1	1	1	1	ug/L	~
Total Cesium	<1	1	<1	1	ug/L	~
Total Chromium	2	1	2	1	ug/L	~
Total Cobalt	0.5	0.1	0.5	0.1	ug/L	0.9
Total Copper	1	1	1	1	ug/L	1
Total Europium	<1	1	<1	1	ug/L	~
Total Gallium	<1	1	<1	1	ug/L	~
Total Iron	1300	200	1200	200	ug/L	300
Total Lanthanum	<1	1	<1	1	ug/L	~
Total Lead	0.5	0.1	0.5	0.1	ug/L	1
Total Lithium	<5	5	<5	5	ug/L	~
Total Magnesium	4830	4	4920	4	ug/L	~
Total Manganese	162	1	155	1	ug/L	~
Total Mercury	<0.1	0.1	<0.1	0.1	ug/L	0.2
Total Molybdenum	<1	1	<1	1	ug/L	40

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493768

Sample Description	NDR - S - 02		SW - Dup			
Sample Date	3/22/2023 2:25 PM		3/22/2023			
Lab ID	1861620		1861621			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Nickel	<1	1	<1	1	ug/L	25
Total Niobium	<1	1	<1	1	ug/L	~
Total Potassium	620	100	610	100	ug/L	~
Total Rhodium	<1	1	<1	1	ug/L	~
Total Rubidium	2	1	2	1	ug/L	~
Total Scandium	2	1	2	1	ug/L	~
Total Selenium	<0.5	0.5	<0.5	0.5	ug/L	100
Total Silicon	3400	600	3400	600	ug/L	~
Total Silver	<0.1	0.1	<0.1	0.1	ug/L	0.1
Total Sodium	1850	100	1910	100	ug/L	~
Total Strontium	29	1	29	1	ug/L	~
Total Sulphur	<800	800	<800	800	ug/L	~
Total Tellurium	<1	1	<1	1	ug/L	~
Total Thallium	<0.1	0.1	<0.1	0.1	ug/L	0.3
Total Thorium	<1	1	<1	1	ug/L	~
Total Tin	<1	1	<1	1	ug/L	~
Total Titanium	23	1	22	1	ug/L	~
Total Tungsten	<1	1	<1	1	ug/L	30
Total Uranium	<1	1	<1	1	ug/L	5
Total Vanadium	1	1	1	1	ug/L	6
Total Yttrium	<1	1	<1	1	ug/L	~
Total Zinc	14	1	13	1	ug/L	20
Total Zirconium	<1	1	1	1	ug/L	4

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493768

Sample Description	KC - 01		JCRK - 03		JC - S - 01		MARLk			
Sample Date	3/22/2023 11:30 AM		3/22/2023 12:10 PM		3/22/2023 12:50 PM		3/22/2023 1:35 PM			
Lab ID	1861616		1861617		1861618		1861619			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	375	10	170	10	180	10	85	10	mg/L	~
Total Suspended Solids	14.70	0.67	9.00	0.67	62.70	0.67	3.70	0.67	mg/L	~

Sample Description	NDR - S - 02		SW - Dup			
Sample Date	3/22/2023 2:25 PM		3/22/2023			
Lab ID	1861620		1861621			
Solids	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	140	10	150 [145]	10	mg/L	~
Total Suspended Solids	22.70	0.67	18.5 [18]	1	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493768

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	493844
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	Adam Gauthier & Michael Hoven
Date Order Received:	3/24/2023	Analysis Started:	3/24/2023
Arrival Temperature:	2 °C	Analysis Completed:	3/31/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
MATR-02	1861884	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	3/23/2023	11:00 AM
NDR-S-04b	1861885	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	3/23/2023	11:35 AM
NDR-S-06	1861886	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	3/23/2023	11:55 AM
WBR-P-03	1861887	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	3/23/2023	12:55 PM
WBR-S-04	1861888	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	3/23/2023	1:15 PM
WBR-S-06	1861889	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	3/23/2023	1:55 PM
JCRK-02	1861890	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	3/23/2023	3:40 PM
Field Blank	1861891	Surface Water	Grab		3/23/2023	
Travel Blank	1861892	Surface Water	Grab		3/23/2023	

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179

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Canada Nickel Company Inc.

Work Order Number: 493844

Method	Lab	Description	Reference
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (0.2um) (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493844

WORK ORDER RESULTS

Sample Description	MATR - 02		NDR - S - 04b		NDR - S - 06		WBR - P - 03			
Sample Date	3/23/2023 11:00 AM		3/23/2023 11:35 AM		3/23/2023 11:55 AM		3/23/2023 12:55 PM			
Lab ID	1861884		1861885		1861886		1861887			
	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	37	1	46	1	60	1	183	1	ug/L	~

Sample Description	WBR - S - 04		WBR - S - 06		JCRK - 02		Field Blank			
Sample Date	3/23/2023 1:15 PM		3/23/2023 1:55 PM		3/23/2023 3:40 PM		3/23/2023			
Lab ID	1861888		1861889		1861890		1861891			
	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	120	1	102	1	169	1	<1	1	ug/L	~

Sample Description	Travel Blank			
Sample Date	3/23/2023			
Lab ID	1861892			
	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	<1 [<1]	1	ug/L	~

Sample Description	MATR - 02		NDR - S - 04b		NDR - S - 06		WBR - P - 03			
Sample Date	3/23/2023 11:00 AM		3/23/2023 11:35 AM		3/23/2023 11:55 AM		3/23/2023 12:55 PM			
Lab ID	1861884		1861885		1861886		1861887			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	2.4	0.2	3.1	0.2	3.3	0.2	0.6	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	0.2	0.1	0.2	0.1	0.3	0.1	<0.1	0.1	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493844

Sample Description	MATR - 02		NDR - S - 04b		NDR - S - 06		WBR - P - 03			
Sample Date	3/23/2023 11:00 AM		3/23/2023 11:35 AM		3/23/2023 11:55 AM		3/23/2023 12:55 PM			
Lab ID	1861884		1861885		1861886		1861887			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Nitrite (as N)	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	4.3	0.5	0.9	0.5	0.8	0.5	<0.5	0.5	mg/L	~

Sample Description	WBR - S - 04		WBR - S - 06		JCRK - 02		Field Blank			
Sample Date	3/23/2023 1:15 PM		3/23/2023 1:55 PM		3/23/2023 3:40 PM		3/23/2023			
Lab ID	1861888		1861889		1861890		1861891			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	0.9	0.2	1.2	0.2	16.8	0.2	0.6 [0.5]	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05 [<0.05]	0.05	mg/L	~
Nitrate (as N) (Calc.)	0.3	0.1	0.3	0.1	0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	3.9	0.5	4.8	0.5	1.4	0.5	<0.5 [<0.5]	0.5	mg/L	~

Sample Description	Travel Blank			
Sample Date	3/23/2023			
Lab ID	1861892			
Anions	Result	MDL	Units	Criteria: PWQO
Chloride	<0.2	0.2	mg/L	~
Fluoride	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	mg/L	~
Nitrite (as N)	0.01	0.01	mg/L	~
Sulphate	<0.5	0.5	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493844

Sample Description	MATR - 02		NDR - S - 04b		NDR - S - 06		WBR - P - 03			
Sample Date	3/23/2023 11:00 AM		3/23/2023 11:35 AM		3/23/2023 11:55 AM		3/23/2023 12:55 PM			
Lab ID	1861884		1861885		1861886		1861887			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	7.74	N/A	7.03	N/A	6.98	N/A	6.19	N/A	pH	~
Field Temp	0.08	N/A	0.62	N/A	0.07	N/A	0.05	N/A	°C	~

Sample Description	WBR - S - 04		WBR - S - 06		JCRK - 02			
Sample Date	3/23/2023 1:15 PM		3/23/2023 1:55 PM		3/23/2023 3:40 PM			
Lab ID	1861888		1861889		1861890			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	6.73	N/A	7.12	N/A	6.19	N/A	pH	~
Field Temp	0.02	N/A	0.01	N/A	0	N/A	°C	~

Sample Description	MATR - 02		NDR - S - 04b		NDR - S - 06		WBR - P - 03			
Sample Date	3/23/2023 11:00 AM		3/23/2023 11:35 AM		3/23/2023 11:55 AM		3/23/2023 12:55 PM			
Lab ID	1861884		1861885		1861886		1861887			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	8	5	14	5	10	5	15	5	mg/L as CaCO3	~
Ammonia (as N)	0.026	0.005	0.066	0.005	0.086	0.005	0.408	0.005	mg/L	~
Conductivity	112	1	160	1	160	1	50	1	µS/cm	~
Dissolved Organic Carbon	12.0	0.4	25.2 [25.1]	0.4	31.2	0.8	46	2	mg/L	~
Free Cyanide	0.003	0.001	0.004 [0.004]	0.001	0.004	0.001	0.004	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	52	2	81	2	81	2	20	2	mg/L as CaCO3	~
pH	7.6	N/A	7.13	N/A	7.28	N/A	6.26	N/A	pH	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493844

Sample Description	MATR - 02		NDR - S - 04b		NDR - S - 06		WBR - P - 03			
Sample Date	3/23/2023 11:00 AM		3/23/2023 11:35 AM		3/23/2023 11:55 AM		3/23/2023 12:55 PM			
Lab ID	1861884		1861885		1861886		1861887			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Strong Acid Dissociable Cyanide	0.002	0.002	0.002 [0.002]	0.002	0.002	0.002	0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	50.4	0.1	80.8	0.1	77.2	0.1	25.6	0.1	mg/L	~
Total Phosphorus (as P)	0.017	0.002	0.067	0.002	0.044	0.002	0.079	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.002 [0.002]	0.001	0.003	0.001	0.004	0.001	0.005	0.001	mg/L	~

Sample Description	WBR - S - 04		WBR - S - 06		JCRK - 02		Field Blank			
Sample Date	3/23/2023 1:15 PM		3/23/2023 1:55 PM		3/23/2023 3:40 PM		3/23/2023			
Lab ID	1861888		1861889		1861890		1861891			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	14	5	11	5	12	5	12	5	mg/L as CaCO3	~
Ammonia (as N)	0.112	0.005	0.072	0.005	0.120	0.005	<0.005	0.005	mg/L	~
Conductivity	156	1	176	1	117	1	5	1	µS/cm	~
Dissolved Organic Carbon	32.3	0.8	31.7	0.8	34.9	0.8	0.5	0.4	mg/L	~
Free Cyanide	0.002	0.001	0.004	0.001	0.004	0.001	0.001	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	81	2	92	2	26	2	3	2	mg/L as CaCO3	~
pH	7.17	N/A	7.43	N/A	6.81	N/A	4.96	N/A	pH	~
Strong Acid Dissociable Cyanide	0.004	0.002	0.003	0.002	0.004	0.002	<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	79.7	0.1	92.2	0.1	31.1	0.1	<0.1	0.1	mg/L	~
Total Phosphorus (as P)	0.052	0.002	0.112	0.002	0.077	0.002	0.009	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.003	0.001	0.004	0.001	0.004	0.001	0.002	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493844

Sample Description	Travel Blank
Sample Date	3/23/2023
Lab ID	1861892

General Chemistry	Result	MDL	Units	Criteria: PWQO
Acidity	11	5	mg/L as CaCO3	~
Ammonia (as N)	<0.005 [<0.005]	0.005	mg/L	~
Conductivity	<1	1	µS/cm	~
Dissolved Organic Carbon	0.5	0.4	mg/L	~
Free Cyanide	<0.001	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	3	2	mg/L as CaCO3	~
pH	5.82	N/A	pH	~
Strong Acid Dissociable Cyanide	<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	<0.1	0.1	mg/L	~
Total Phosphorus (as P)	0.006	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.002	0.001	mg/L	~

Sample Description	MATR - 02		NDR - S - 04b		NDR - S - 06		WBR - P - 03			
Sample Date	3/23/2023 11:00 AM		3/23/2023 11:35 AM		3/23/2023 11:55 AM		3/23/2023 12:55 PM			
Lab ID	1861884		1861885		1861886		1861887			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	2.00	0.01	3.96	0.01	3.15	0.01	4.45	0.01	ng/L	200

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493844

Sample Description	WBR - S - 04		WBR - S - 06		JCRK - 02		Field Blank			
Sample Date	3/23/2023 1:15 PM		3/23/2023 1:55 PM		3/23/2023 3:40 PM		3/23/2023			
Lab ID	1861888		1861889		1861890		1861891			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	4.55	0.01	7.87	0.01	4.33	0.01	0.07	0.01	ng/L	200

Sample Description	Travel Blank			
Sample Date	3/23/2023			
Lab ID	1861892			
Mercury (Trace)	Result	MDL	Units	Criteria: PWQO
Total Mercury	0.09	0.01	ng/L	200

Sample Description	MATR - 02		NDR - S - 04b		NDR - S - 06		WBR - P - 03			
Sample Date	3/23/2023 11:00 AM		3/23/2023 11:35 AM		3/23/2023 11:55 AM		3/23/2023 12:55 PM			
Lab ID	1861884		1861885		1861886		1861887			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	38	1	50	1	70	1	202	1	ug/L	~
Dissolved Antimony	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	~
Dissolved Arsenic	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Barium	6	1	7	1	6	1	6	1	ug/L	~
Dissolved Beryllium	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	~
Dissolved Bismuth	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Boron	5	2	<2	2	<2	2	<2	2	ug/L	~
Dissolved Cadmium	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Calcium	14100	50	21000	500	20400	500	6790	50	ug/L	~
Dissolved Cerium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Cesium	<1	1	<1	1	<1	1	<1	1	ug/L	~

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Canada Nickel Company Inc.

Work Order Number: 493844

Sample Description	MATR - 02		NDR - S - 04b		NDR - S - 06		WBR - P - 03			
Sample Date	3/23/2023 11:00 AM		3/23/2023 11:35 AM		3/23/2023 11:55 AM		3/23/2023 12:55 PM			
Lab ID	1861884		1861885		1861886		1861887			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Chromium	<1	1	2	1	2	1	1	1	ug/L	~
Dissolved Cobalt	<0.1	0.1	0.1	0.1	0.2	0.1	0.9	0.1	ug/L	~
Dissolved Copper	<1	1	1	1	1	1	<1	1	ug/L	~
Dissolved Europium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Gallium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Iron	180	20	542	20	561	20	1100	200	ug/L	~
Dissolved Lanthanum	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Lead	<0.1	0.1	<0.1	0.1	<0.1	0.1	0.5	0.1	ug/L	~
Dissolved Lithium	<5	5	<5	5	<5	5	<5	5	ug/L	~
Dissolved Magnesium	3190	4	5670	4	5580	4	1860	4	ug/L	~
Dissolved Manganese	5	1	18	1	18	1	343	10	ug/L	~
Dissolved Mercury	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.2
Dissolved Molybdenum	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Nickel	<1	1	<1	1	3	1	<1	1	ug/L	~
Dissolved Niobium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Phosphorus	<50	50	<50	50	<50	50	<50	50	ug/L	~
Dissolved Potassium	370	100	570	100	540	100	280	100	ug/L	~
Dissolved Rhodium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Rubidium	<1	1	1	1	1	1	1	1	ug/L	~
Dissolved Scandium	1	1	1	1	2	1	2	1	ug/L	~
Dissolved Selenium	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	~
Dissolved Silicon	3000	600	3300	600	3400	600	3900	600	ug/L	~
Dissolved Silver	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Sodium	2200	100	3670	100	3650	100	690	100	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493844

Sample Description	MATR - 02		NDR - S - 04b		NDR - S - 06		WBR - P - 03			
Sample Date	3/23/2023 11:00 AM		3/23/2023 11:35 AM		3/23/2023 11:55 AM		3/23/2023 12:55 PM			
Lab ID	1861884		1861885		1861886		1861887			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Strontium	18	1	28	1	28	1	10	1	ug/L	~
Dissolved Sulfur	<800	800	<800	800	<800	800	<800	800	ug/L	~
Dissolved Tellurium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Thallium	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Thorium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Tin	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Titanium	1	1	3	1	3	1	7	1	ug/L	~
Dissolved Tungsten	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Uranium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Vanadium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Yttrium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Zinc	1	1	5	1	7	1	9	1	ug/L	~
Dissolved Zirconium	<1	1	<1	1	<1	1	1	1	ug/L	~

Sample Description	WBR - S - 04		WBR - S - 06		JCRK - 02		Field Blank			
Sample Date	3/23/2023 1:15 PM		3/23/2023 1:55 PM		3/23/2023 3:40 PM		3/23/2023			
Lab ID	1861888		1861889		1861890		1861891			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	143	1	124	1	233	1	<1	1	ug/L	~
Dissolved Antimony	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	~
Dissolved Arsenic	1	1	1	1	<1	1	<1	1	ug/L	~
Dissolved Barium	9	1	10	1	6	1	<1	1	ug/L	~
Dissolved Beryllium	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	~

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Canada Nickel Company Inc.

Work Order Number: 493844

Sample Description	WBR - S - 04		WBR - S - 06		JCRK - 02		Field Blank			
Sample Date	3/23/2023 1:15 PM		3/23/2023 1:55 PM		3/23/2023 3:40 PM		3/23/2023			
Lab ID	1861888		1861889		1861890		1861891			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Bismuth	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Boron	6	2	7	2	<2	2	<2	2	ug/L	~
Dissolved Cadmium	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Calcium	21900	500	24300	500	8520	50	<50	50	ug/L	~
Dissolved Cerium	<1	1	<1	1	1	1	<1	1	ug/L	~
Dissolved Cesium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Chromium	2	1	2	1	1	1	<1	1	ug/L	~
Dissolved Cobalt	0.3	0.1	0.1	0.1	0.2	0.1	<0.1	0.1	ug/L	~
Dissolved Copper	1	1	2	1	2	1	<1	1	ug/L	~
Dissolved Europium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Gallium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Iron	710	200	590	200	700	200	<20	20	ug/L	~
Dissolved Lanthanum	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Lead	0.2	0.1	0.1	0.1	0.4	0.1	<0.1	0.1	ug/L	~
Dissolved Lithium	<5	5	<5	5	<5	5	<5	5	ug/L	~
Dissolved Magnesium	5340	4	5820	4	2010	4	<4	4	ug/L	~
Dissolved Manganese	91	1	7	1	23	1	<1	1	ug/L	~
Dissolved Mercury	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.2
Dissolved Molybdenum	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Nickel	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Niobium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Phosphorus	<50	50	<50	50	<50	50	<50	50	ug/L	~
Dissolved Potassium	510	100	580	100	460	100	<100	100	ug/L	~
Dissolved Rhodium	<1	1	<1	1	<1	1	<1	1	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493844

Sample Description	WBR - S - 04		WBR - S - 06		JCRK - 02		Field Blank			
Sample Date	3/23/2023 1:15 PM		3/23/2023 1:55 PM		3/23/2023 3:40 PM		3/23/2023			
Lab ID	1861888		1861889		1861890		1861891			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Rubidium	1	1	1	1	1	1	<1	1	ug/L	~
Dissolved Scandium	2	1	2	1	2	1	<1	1	ug/L	~
Dissolved Selenium	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	~
Dissolved Silicon	3600	600	3600	600	3500	600	<600	600	ug/L	~
Dissolved Silver	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Sodium	2970	100	3310	100	9350	100	<100	100	ug/L	~
Dissolved Strontium	37	1	40	1	17	1	<1	1	ug/L	~
Dissolved Sulfur	<800	800	<800	800	<800	800	<800	800	ug/L	~
Dissolved Tellurium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Thallium	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Thorium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Tin	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Titanium	6	1	6	1	10	1	<1	1	ug/L	~
Dissolved Tungsten	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Uranium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Vanadium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Yttrium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Zinc	2	1	3	1	9	1	<1	1	ug/L	~
Dissolved Zirconium	2	1	2	1	2	1	<1	1	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493844

Sample Description	Travel Blank
Sample Date	3/23/2023
Lab ID	1861892

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	<1	1	ug/L	~
Dissolved Antimony	<0.5	0.5	ug/L	~
Dissolved Arsenic	<1	1	ug/L	~
Dissolved Barium	<1	1	ug/L	~
Dissolved Beryllium	<0.5	0.5	ug/L	~
Dissolved Bismuth	<1	1	ug/L	~
Dissolved Boron	<2	2	ug/L	~
Dissolved Cadmium	<0.1	0.1	ug/L	~
Dissolved Calcium	<50	50	ug/L	~
Dissolved Cerium	<1	1	ug/L	~
Dissolved Cesium	<1	1	ug/L	~
Dissolved Chromium	<1	1	ug/L	~
Dissolved Cobalt	<0.1	0.1	ug/L	~
Dissolved Copper	<1	1	ug/L	~
Dissolved Europium	<1	1	ug/L	~
Dissolved Gallium	<1	1	ug/L	~
Dissolved Iron	<20	20	ug/L	~
Dissolved Lanthanum	<1	1	ug/L	~
Dissolved Lead	<0.1	0.1	ug/L	~
Dissolved Lithium	<5	5	ug/L	~
Dissolved Magnesium	<4	4	ug/L	~
Dissolved Manganese	<1	1	ug/L	~
Dissolved Mercury	<0.1	0.1	ug/L	0.2
Dissolved Molybdenum	<1	1	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493844

Sample Description	Travel Blank
Sample Date	3/23/2023
Lab ID	1861892

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Nickel	<1	1	ug/L	~
Dissolved Niobium	<1	1	ug/L	~
Dissolved Phosphorus	<50	50	ug/L	~
Dissolved Potassium	<100	100	ug/L	~
Dissolved Rhodium	<1	1	ug/L	~
Dissolved Rubidium	<1	1	ug/L	~
Dissolved Scandium	<1	1	ug/L	~
Dissolved Selenium	<0.5	0.5	ug/L	~
Dissolved Silicon	<600	600	ug/L	~
Dissolved Silver	<0.1	0.1	ug/L	~
Dissolved Sodium	<100	100	ug/L	~
Dissolved Strontium	<1	1	ug/L	~
Dissolved Sulfur	<800	800	ug/L	~
Dissolved Tellurium	<1	1	ug/L	~
Dissolved Thallium	<0.1	0.1	ug/L	~
Dissolved Thorium	<1	1	ug/L	~
Dissolved Tin	<1	1	ug/L	~
Dissolved Titanium	<1	1	ug/L	~
Dissolved Tungsten	<1	1	ug/L	~
Dissolved Uranium	<1	1	ug/L	~
Dissolved Vanadium	<1	1	ug/L	~
Dissolved Yttrium	<1	1	ug/L	~
Dissolved Zinc	<1	1	ug/L	~
Dissolved Zirconium	<1	1	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493844

Sample Description	MATR - 02		NDR - S - 04b		NDR - S - 06		WBR - P - 03			
Sample Date	3/23/2023 11:00 AM		3/23/2023 11:35 AM		3/23/2023 11:55 AM		3/23/2023 12:55 PM			
Lab ID	1861884		1861885		1861886		1861887			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	82	1	1300	10	350	1	433	1	ug/L	75
Total Antimony	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	20
Total Arsenic	<1	1	<1	1	<1	1	<1	1	ug/L	5
Total Barium	6	1	16	1	8	1	8	1	ug/L	~
Total Beryllium	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	11
Total Bismuth	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Boron	4	2	<2	2	<2	2	<2	2	ug/L	200
Total Cadmium	<0.02	0.02	0.05	0.02	0.03	0.02	0.04	0.02	ug/L	0.1
Total Calcium	14200	50	21300	500	20600	500	6820	50	ug/L	~
Total Cerium	<1	1	2	1	<1	1	<1	1	ug/L	~
Total Cesium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Chromium	<1	1	3	1	1	1	1	1	ug/L	~
Total Cobalt	0.1	0.1	0.8	0.1	0.4	0.1	1.5	0.1	ug/L	0.9
Total Copper	<1	1	1	1	2	1	<1	1	ug/L	1
Total Europium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Gallium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Iron	268	20	2060	200	910	200	1600	200	ug/L	300
Total Lanthanum	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Lead	<0.1	0.1	0.8	0.1	0.3	0.1	0.9	0.1	ug/L	1
Total Lithium	<5	5	<5	5	<5	5	<5	5	ug/L	~
Total Magnesium	3240	4	6110	4	5730	4	1930	4	ug/L	~
Total Manganese	11	1	157	1	35	1	455	10	ug/L	~
Total Mercury	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.2
Total Molybdenum	<1	1	<1	1	<1	1	<1	1	ug/L	40

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493844

Sample Description	MATR - 02		NDR - S - 04b		NDR - S - 06		WBR - P - 03			
Sample Date	3/23/2023 11:00 AM		3/23/2023 11:35 AM		3/23/2023 11:55 AM		3/23/2023 12:55 PM			
Lab ID	1861884		1861885		1861886		1861887			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Nickel	<1	1	<1	1	4	1	<1	1	ug/L	25
Total Niobium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Potassium	370	100	750	100	620	100	320	100	ug/L	~
Total Rhodium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Rubidium	1	1	3	1	2	1	2	1	ug/L	~
Total Scandium	1	1	2	1	2	1	2	1	ug/L	~
Total Selenium	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	100
Total Silicon	3100	600	4900	600	3800	600	4300	600	ug/L	~
Total Silver	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.1
Total Sodium	2220	100	3540	100	3720	100	680	100	ug/L	~
Total Strontium	18	1	32	1	29	1	11	1	ug/L	~
Total Sulphur	<800	800	<800	800	<800	800	<800	800	ug/L	~
Total Tellurium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Thallium	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.3
Total Thorium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Tin	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Titanium	2	1	49	1	14	1	15	1	ug/L	~
Total Tungsten	<1	1	<1	1	<1	1	<1	1	ug/L	30
Total Uranium	<1	1	<1	1	<1	1	<1	1	ug/L	5
Total Vanadium	<1	1	2	1	<1	1	<1	1	ug/L	6
Total Yttrium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Zinc	2	1	11	1	11	1	10	1	ug/L	20
Total Zirconium	<1	1	2	1	1	1	<1	1	ug/L	4

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493844

Sample Description	WBR - S - 04		WBR - S - 06		JCRK - 02		Field Blank			
Sample Date	3/23/2023 1:15 PM		3/23/2023 1:55 PM		3/23/2023 3:40 PM		3/23/2023			
Lab ID	1861888		1861889		1861890		1861891			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	1020	10	2770	10	1700	10	3	1	ug/L	75
Total Antimony	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	20
Total Arsenic	1	1	2	1	<1	1	<1	1	ug/L	5
Total Barium	14	1	30	1	14	1	<1	1	ug/L	~
Total Beryllium	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	11
Total Bismuth	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Boron	5	2	8	2	<2	2	<2	2	ug/L	200
Total Cadmium	0.04	0.02	0.13	0.02	0.07	0.02	<0.02	0.02	ug/L	0.1
Total Calcium	22200	500	26000	500	8560	50	<50	50	ug/L	~
Total Cerium	2	1	5	1	2	1	<1	1	ug/L	~
Total Cesium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Chromium	2	1	5	1	3	1	<1	1	ug/L	~
Total Cobalt	0.7	0.1	1.8	0.1	0.8	0.1	<0.1	0.1	ug/L	0.9
Total Copper	2	1	3	1	3	1	<1	1	ug/L	1
Total Europium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Gallium	<1	1	1	1	<1	1	<1	1	ug/L	~
Total Iron	1600	200	3640	200	2030	200	<20	20	ug/L	300
Total Lanthanum	<1	1	2	1	1	1	<1	1	ug/L	~
Total Lead	0.6	0.1	1.8	0.1	1.1	0.1	<0.1	0.1	ug/L	1
Total Lithium	<5	5	<5	5	<5	5	<5	5	ug/L	~
Total Magnesium	5530	4	6720	4	2320	4	<4	4	ug/L	~
Total Manganese	130	1	278	10	64	1	<1	1	ug/L	~
Total Mercury	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.2
Total Molybdenum	<1	1	<1	1	<1	1	<1	1	ug/L	40

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493844

Sample Description	WBR - S - 04		WBR - S - 06		JCRK - 02		Field Blank			
Sample Date	3/23/2023 1:15 PM		3/23/2023 1:55 PM		3/23/2023 3:40 PM		3/23/2023			
Lab ID	1861888		1861889		1861890		1861891			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Nickel	<1	1	4	1	<1	1	<1	1	ug/L	25
Total Niobium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Potassium	670	100	1110	100	710	100	<100	100	ug/L	~
Total Rhodium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Rubidium	2	1	6	1	4	1	<1	1	ug/L	~
Total Scandium	2	1	4	1	2	1	<1	1	ug/L	~
Total Selenium	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	100
Total Silicon	4700	600	7100	600	5400	600	<600	600	ug/L	~
Total Silver	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.1
Total Sodium	2960	100	3430	100	9050	100	<100	100	ug/L	~
Total Strontium	38	1	50	1	21	1	<1	1	ug/L	~
Total Sulphur	<800	800	<800	800	<800	800	<800	800	ug/L	~
Total Tellurium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Thallium	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.3
Total Thorium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Tin	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Titanium	34	1	103	1	54	1	<1	1	ug/L	~
Total Tungsten	<1	1	<1	1	<1	1	<1	1	ug/L	30
Total Uranium	<1	1	<1	1	<1	1	<1	1	ug/L	5
Total Vanadium	2	1	4	1	2	1	<1	1	ug/L	6
Total Yttrium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Zinc	6	1	20	1	15	1	<1	1	ug/L	20
Total Zirconium	3	1	5	1	3	1	<1	1	ug/L	4

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493844

Sample Description	Travel Blank
Sample Date	3/23/2023
Lab ID	1861892

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Aluminum	2	1	ug/L	75
Total Antimony	<0.5	0.5	ug/L	20
Total Arsenic	<1	1	ug/L	5
Total Barium	<1	1	ug/L	~
Total Beryllium	<0.5	0.5	ug/L	11
Total Bismuth	<1	1	ug/L	~
Total Boron	<2	2	ug/L	200
Total Cadmium	<0.02	0.02	ug/L	0.1
Total Calcium	<50	50	ug/L	~
Total Cerium	<1	1	ug/L	~
Total Cesium	<1	1	ug/L	~
Total Chromium	<1	1	ug/L	~
Total Cobalt	<0.1	0.1	ug/L	0.9
Total Copper	<1	1	ug/L	1
Total Europium	<1	1	ug/L	~
Total Gallium	<1	1	ug/L	~
Total Iron	<20	20	ug/L	300
Total Lanthanum	<1	1	ug/L	~
Total Lead	<0.1	0.1	ug/L	1
Total Lithium	<5	5	ug/L	~
Total Magnesium	<4	4	ug/L	~
Total Manganese	<1	1	ug/L	~
Total Mercury	<0.1	0.1	ug/L	0.2
Total Molybdenum	<1	1	ug/L	40

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493844

Sample Description	Travel Blank
Sample Date	3/23/2023
Lab ID	1861892

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Nickel	<1	1	ug/L	25
Total Niobium	<1	1	ug/L	~
Total Potassium	<100	100	ug/L	~
Total Rhodium	<1	1	ug/L	~
Total Rubidium	<1	1	ug/L	~
Total Scandium	<1	1	ug/L	~
Total Selenium	<0.5	0.5	ug/L	100
Total Silicon	<600	600	ug/L	~
Total Silver	<0.1	0.1	ug/L	0.1
Total Sodium	160	100	ug/L	~
Total Strontium	<1	1	ug/L	~
Total Sulphur	<800	800	ug/L	~
Total Tellurium	<1	1	ug/L	~
Total Thallium	<0.1	0.1	ug/L	0.3
Total Thorium	<1	1	ug/L	~
Total Tin	<1	1	ug/L	~
Total Titanium	<1	1	ug/L	~
Total Tungsten	<1	1	ug/L	30
Total Uranium	<1	1	ug/L	5
Total Vanadium	<1	1	ug/L	6
Total Yttrium	<1	1	ug/L	~
Total Zinc	<1	1	ug/L	20
Total Zirconium	<1	1	ug/L	4

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493844

Sample Description	MATR - 02		NDR - S - 04b		NDR - S - 06		WBR - P - 03			
Sample Date	3/23/2023 11:00 AM		3/23/2023 11:35 AM		3/23/2023 11:55 AM		3/23/2023 12:55 PM			
Lab ID	1861884		1861885		1861886		1861887			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	75	10	135	10	140	10	90	10	mg/L	~
Total Suspended Solids	1.00	0.67	32.70	0.67	32.00	0.67	6.70	0.67	mg/L	~

Sample Description	WBR - S - 04		WBR - S - 06		JCRK - 02		Field Blank			
Sample Date	3/23/2023 1:15 PM		3/23/2023 1:55 PM		3/23/2023 3:40 PM		3/23/2023			
Lab ID	1861888		1861889		1861890		1861891			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	155	10	160	10	135	10	<10	10	mg/L	~
Total Suspended Solids	9.00	0.67	78.0	1.3	22	1	<0.67	0.67	mg/L	~

Sample Description	Travel Blank			
Sample Date	3/23/2023			
Lab ID	1861892			
Solids	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	<10	10	mg/L	~
Total Suspended Solids	<0.67	0.67	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 493844

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	494524
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	Adam Gauthier & Jacques Picotte
Date Order Received:	4/3/2023	Analysis Started:	4/3/2023
Arrival Temperature:	15 °C	Analysis Completed:	4/21/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
SW-BS-01	1864167	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	3/27/2023	11:50 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237

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Canada Nickel Company Inc.

Work Order Number: 494524

Method	Lab	Description	Reference
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (0.2um) (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 494524

WORK ORDER RESULTS

Sample Description	SW - BS - 01
Sample Date	3/27/2023 11:50 AM
Lab ID	1864167

Anions	Result	MDL	Units	Criteria: PWQO
Chloride	0.5	0.2	mg/L	~
Fluoride	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	mg/L	~
Sulphate	<0.5	0.5	mg/L	~

Sample Description	SW - BS - 01
Sample Date	3/27/2023 11:50 AM
Lab ID	1864167

Field Parameters	Result	MDL	Units	Criteria: PWQO
Field pH	4.41	N/A	pH	~
Field Temp	0.88	N/A	°C	~

Sample Description	SW - BS - 01
Sample Date	3/27/2023 11:50 AM
Lab ID	1864167

General Chemistry	Result	MDL	Units	Criteria: PWQO
Acidity	22	5	mg/L as CaCO3	~
Ammonia (as N)	0.308 [0.312]	0.005	mg/L	~
Conductivity	40	1	µS/cm	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 494524

Sample Description	SW - BS - 01
Sample Date	3/27/2023 11:50 AM
Lab ID	1864167

General Chemistry	Result	MDL	Units	Criteria: PWQO
Dissolved Organic Carbon	44.1	0.8	mg/L	~
Free Cyanide	0.003	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	12	2	mg/L as CaCO3	~
pH	5.55	N/A	pH	~
Strong Acid Dissociable Cyanide	0.002 [0.002]	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	19.5	0.1	mg/L	~
Total Phosphorus (as P)	0.052	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.005	0.001	mg/L	~

Sample Description	SW - BS - 01
Sample Date	3/27/2023 11:50 AM
Lab ID	1864167

Mercury (Trace)	Result	MDL	Units	Criteria: PWQO
Total Mercury	2.34	0.01	ng/L	200

Sample Description	SW - BS - 01
Sample Date	3/27/2023 11:50 AM
Lab ID	1864167

Metals (Dissolved - 0.2um)	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	88 [92]	1	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 494524

Sample Description	SW - BS - 01
Sample Date	3/27/2023 11:50 AM
Lab ID	1864167

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	93	1	ug/L	~
Dissolved Antimony	<0.5	0.5	ug/L	~
Dissolved Arsenic	<1	1	ug/L	~
Dissolved Barium	4	1	ug/L	~
Dissolved Beryllium	<0.5	0.5	ug/L	~
Dissolved Bismuth	<1	1	ug/L	~
Dissolved Boron	<2	2	ug/L	~
Dissolved Cadmium	<0.1	0.1	ug/L	~
Dissolved Calcium	5430	50	ug/L	~
Dissolved Cerium	<1	1	ug/L	~
Dissolved Cesium	<1	1	ug/L	~
Dissolved Chromium	2	1	ug/L	~
Dissolved Cobalt	0.3	0.1	ug/L	~
Dissolved Copper	<1	1	ug/L	~
Dissolved Europium	<1	1	ug/L	~
Dissolved Gallium	<1	1	ug/L	~
Dissolved Iron	625	20	ug/L	~
Dissolved Lanthanum	<1	1	ug/L	~
Dissolved Lead	0.3	0.1	ug/L	~
Dissolved Lithium	<5	5	ug/L	~
Dissolved Magnesium	1360	4	ug/L	~
Dissolved Manganese	80	1	ug/L	~
Dissolved Mercury	<0.1	0.1	ug/L	0.2
Dissolved Molybdenum	<1	1	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 494524

Sample Description	SW - BS - 01
Sample Date	3/27/2023 11:50 AM
Lab ID	1864167

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Nickel	<1	1	ug/L	~
Dissolved Niobium	<1	1	ug/L	~
Dissolved Phosphorus	<50	50	ug/L	~
Dissolved Potassium	330	100	ug/L	~
Dissolved Rhodium	<1	1	ug/L	~
Dissolved Rubidium	1	1	ug/L	~
Dissolved Scandium	1	1	ug/L	~
Dissolved Selenium	<0.5	0.5	ug/L	~
Dissolved Silicon	2500	600	ug/L	~
Dissolved Silver	<0.1	0.1	ug/L	~
Dissolved Sodium	440	100	ug/L	~
Dissolved Strontium	11	1	ug/L	~
Dissolved Sulfur	<800	800	ug/L	~
Dissolved Tellurium	<1	1	ug/L	~
Dissolved Thallium	<0.1	0.1	ug/L	~
Dissolved Thorium	<1	1	ug/L	~
Dissolved Tin	<1	1	ug/L	~
Dissolved Titanium	2	1	ug/L	~
Dissolved Tungsten	<1	1	ug/L	~
Dissolved Uranium	<1	1	ug/L	~
Dissolved Vanadium	<1	1	ug/L	~
Dissolved Yttrium	<1	1	ug/L	~
Dissolved Zinc	20	1	ug/L	~
Dissolved Zirconium	<1	1	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 494524

Sample Description	SW - BS - 01
Sample Date	3/27/2023 11:50 AM
Lab ID	1864167

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Aluminum	131	1	ug/L	75
Total Antimony	<0.5	0.5	ug/L	20
Total Arsenic	<1	1	ug/L	5
Total Barium	5	1	ug/L	~
Total Beryllium	<0.5	0.5	ug/L	11
Total Bismuth	<1	1	ug/L	~
Total Boron	<2	2	ug/L	200
Total Cadmium	0.03	0.02	ug/L	0.1
Total Calcium	5480	50	ug/L	~
Total Cerium	<1	1	ug/L	~
Total Cesium	<1	1	ug/L	~
Total Chromium	<1	1	ug/L	~
Total Cobalt	0.3	0.1	ug/L	0.9
Total Copper	<1	1	ug/L	1
Total Europium	<1	1	ug/L	~
Total Gallium	<1	1	ug/L	~
Total Iron	650	200	ug/L	300
Total Lanthanum	<1	1	ug/L	~
Total Lead	0.3	0.1	ug/L	1
Total Lithium	<5	5	ug/L	~
Total Magnesium	1340	4	ug/L	~
Total Manganese	81	1	ug/L	~
Total Mercury	<0.1	0.1	ug/L	0.2

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 494524

Sample Description	SW - BS - 01
Sample Date	3/27/2023 11:50 AM
Lab ID	1864167

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Molybdenum	<1	1	ug/L	40
Total Nickel	<1	1	ug/L	25
Total Niobium	<1	1	ug/L	~
Total Potassium	360	100	ug/L	~
Total Rhodium	<1	1	ug/L	~
Total Rubidium	1	1	ug/L	~
Total Scandium	1	1	ug/L	~
Total Selenium	<0.5	0.5	ug/L	100
Total Silicon	2400	600	ug/L	~
Total Silver	<0.1	0.1	ug/L	0.1
Total Sodium	460	100	ug/L	~
Total Strontium	11	1	ug/L	~
Total Sulphur	<800	800	ug/L	~
Total Tellurium	<1	1	ug/L	~
Total Thallium	<0.1	0.1	ug/L	0.3
Total Thorium	<1	1	ug/L	~
Total Tin	<1	1	ug/L	~
Total Titanium	4	1	ug/L	~
Total Tungsten	<1	1	ug/L	30
Total Uranium	<1	1	ug/L	5
Total Vanadium	<1	1	ug/L	6
Total Yttrium	<1	1	ug/L	~
Total Zinc	19	1	ug/L	20
Total Zirconium	<1	1	ug/L	4

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 494524

Sample Description	SW - BS - 01
Sample Date	3/27/2023 11:50 AM
Lab ID	1864167

Solids	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	135 [135]	10	mg/L	~
Total Suspended Solids	5 [5]	1	mg/L	~

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	496175
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	Adam Gauthier & Jacques Picotte
Date Order Received:	4/18/2023	Analysis Started:	4/19/2023
Arrival Temperature:	5 °C	Analysis Completed:	5/1/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
JCRK-03	1869712	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	4/17/2023	10:35 AM
KC-01	1869713	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	4/17/2023	11:30 AM
JC-S-01	1869714	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	4/17/2023	1:30 PM
NDR-S-02	1869715	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	4/17/2023	2:50 PM
Dup1	1869716	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	4/17/2023	
MATR-02	1869717	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	4/18/2023	11:30 AM
NDR-S-04b	1869718	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	4/18/2023	1:10 PM
NDR-S-06	1869719	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	4/18/2023	3:40 PM
MARLk	1869720	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	4/18/2023	2:35 PM
Field Blank	1869721	Surface Water	Grab		4/18/2023	

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B

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Canada Nickel Company Inc.

Work Order Number: 496175

Method	Lab	Description	Reference
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (0.2um) (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496175

WORK ORDER RESULTS

Sample Description	JCRK - 03		KC - 01		JC - S - 01		NDR - S - 02			
Sample Date	4/17/2023 10:35 AM		4/17/2023 11:30 AM		4/17/2023 1:30 PM		4/17/2023 2:50 PM			
Lab ID	1869712		1869713		1869714		1869715			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	3.1	0.2	4.1	0.2	21.1 [19.8]	0.2	4.8	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05 [<0.05]	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1 [0.2]	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01 [<0.01]	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	0.6	0.5	6.9	0.5	0.7 [0.7]	0.5	0.8	0.5	mg/L	~

Sample Description	Dup1		MATR - 02		NDR - S - 04b		NDR - S - 06			
Sample Date	4/17/2023		4/18/2023 11:30 AM		4/18/2023 1:10 PM		4/18/2023 3:40 PM			
Lab ID	1869716		1869717		1869718		1869719			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	4.1	0.2	1.5	0.2	3.6	0.2	3.4	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	0.2	0.1	<0.1	0.1	0.2	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	6.9	0.5	2.0	0.5	0.5	0.5	<0.5	0.5	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496175

Sample Description	MARLk		Field Blank			
Sample Date	4/18/2023 2:35 PM		4/18/2023			
Lab ID	1869720		1869721			
Anions	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	<0.2	0.2	<0.2	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	<0.5	0.5	<0.5	0.5	mg/L	~

Sample Description	JCRK - 03		KC - 01		JC - S - 01		NDR - S - 02			
Sample Date	4/17/2023 10:35 AM		4/17/2023 11:30 AM		4/17/2023 1:30 PM		4/17/2023 2:50 PM			
Lab ID	1869712		1869713		1869714		1869715			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	6.52	N/A	7.08	N/A	6.67	N/A	6.5	N/A	pH	~
Field Temp	0.43	N/A	0.41	N/A	1.55	N/A	0.82	N/A	°C	~

Sample Description	MATR - 02		NDR - S - 04b		NDR - S - 06		MARLk			
Sample Date	4/18/2023 11:30 AM		4/18/2023 1:10 PM		4/18/2023 3:40 PM		4/18/2023 2:35 PM			
Lab ID	1869717		1869718		1869719		1869720			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	7.31	N/A	6.65	N/A	6.51	N/A	6.11	N/A	pH	~
Field Temp	0.67	N/A	0.27	N/A	0.17	N/A	0.52	N/A	°C	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496175

Sample Description	JCRK - 03		KC - 01		JC - S - 01		NDR - S - 02			
Sample Date	4/17/2023 10:35 AM		4/17/2023 11:30 AM		4/17/2023 1:30 PM		4/17/2023 2:50 PM			
Lab ID	1869712		1869713		1869714		1869715			
General Chemistry	**Result**	**MDL**	**Result**	**MDL**	**Result**	**MDL**	**Result**	**MDL**	**Units**	**Criteria: PWQO**
Acidity	10	5	15	5	11	5	10	5	mg/L as CaCO3	~
Ammonia (as N)	0.046 [0.047]	0.005	0.059	0.005	0.019	0.005	0.048	0.005	mg/L	~
Conductivity	46	1	97	1	104	1	59	1	µS/cm	~
Dissolved Organic Carbon	18.2	0.4	17.8	0.4	15.1	0.4	19.1 [19.1]	0.4	mg/L	~
Free Cyanide	0.004	0.001	0.004	0.001	0.006	0.001	0.005	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	16	2	41	2	18	2	22	2	mg/L as CaCO3	~
pH	6.65	N/A	7.35	N/A	6.62	N/A	6.58	N/A	pH	~
Strong Acid Dissociable Cyanide	0.005 [0.004]	0.002	0.004	0.002	0.008	0.002	0.004	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	20.0	0.1	52.9	0.1	14.1	0.1	23.4	0.1	mg/L	~
Total Phosphorus (as P)	0.039	0.002	0.096	0.002	0.034	0.002	0.030	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.002	0.001	0.002	0.001	0.001	0.001	0.002	0.001	mg/L	~

Sample Description	Dup1		MATR - 02		NDR - S - 04b		NDR - S - 06			
Sample Date	4/17/2023		4/18/2023 11:30 AM		4/18/2023 1:10 PM		4/18/2023 3:40 PM			
Lab ID	1869716		1869717		1869718		1869719			
General Chemistry	**Result**	**MDL**	**Result**	**MDL**	**Result**	**MDL**	**Result**	**MDL**	**Units**	**Criteria: PWQO**
Acidity	<5	5	<5	5	12	5	12	5	mg/L as CaCO3	~
Ammonia (as N)	0.058	0.005	0.035	0.005	0.037	0.005	0.038	0.005	mg/L	~
Conductivity	98	1	77	1	56	1	53	1	µS/cm	~
Dissolved Organic Carbon	18.1	0.4	15.8	0.4	20.4	0.4	20.4	0.4	mg/L	~
Free Cyanide	0.006	0.001	0.004	0.001	0.006	0.001	0.006	0.001	mg/L	0.005

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496175

Sample Description	Dup1		MATR - 02		NDR - S - 04b		NDR - S - 06			
Sample Date	4/17/2023		4/18/2023 11:30 AM		4/18/2023 1:10 PM		4/18/2023 3:40 PM			
Lab ID	1869716		1869717		1869718		1869719			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
M-Alkalinity (pH 4.5)	35	2	45	2	21	2	22	2	mg/L as CaCO3	~
pH	7.25	N/A	7.23	N/A	6.65	N/A	6.64	N/A	pH	~
Strong Acid Dissociable Cyanide	0.006	0.002	0.004	0.002	0.006	0.002	0.003	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	54.1	0.1	43.2	0.1	23.4	0.1	22.2	0.1	mg/L	~
Total Phosphorus (as P)	0.088	0.002	0.053	0.002	0.030	0.002	0.033	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.002	0.001	0.002	0.001	0.002	0.001	0.002	0.001	mg/L	~

Sample Description	MARLk		Field Blank			
Sample Date	4/18/2023 2:35 PM		4/18/2023			
Lab ID	1869720		1869721			
General Chemistry	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	11	5	<5	5	mg/L as CaCO3	~
Ammonia (as N)	0.019	0.005	<0.005	0.005	mg/L	~
Conductivity	22	1	1	1	µS/cm	~
Dissolved Organic Carbon	14.9	0.4	1.0	0.4	mg/L	~
Free Cyanide	0.005	0.001	0.004	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	12	2	2	2	mg/L as CaCO3	~
pH	6.32	N/A	5.49	N/A	pH	~
Strong Acid Dissociable Cyanide	0.003	0.002	<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	11.3	0.1	0.2	0.1	mg/L	~
Total Phosphorus (as P)	0.020	0.002	0.003	0.002	mg/L	~
Weak Acid Dissociable Cyanide	<0.001	0.001	<0.001	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496175

Sample Description	JCRK - 03		KC - 01		JC - S - 01		NDR - S - 02			
Sample Date	4/17/2023 10:35 AM		4/17/2023 11:30 AM		4/17/2023 1:30 PM		4/17/2023 2:50 PM			
Lab ID	1869712		1869713		1869714		1869715			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	6.23	0.01	7.57	0.01	5.43	0.01	6.83	0.01	ng/L	200

Sample Description	Dup1		MATR - 02		NDR - S - 04b		NDR - S - 06			
Sample Date	4/17/2023		4/18/2023 11:30 AM		4/18/2023 1:10 PM		4/18/2023 3:40 PM			
Lab ID	1869716		1869717		1869718		1869719			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	7.40	0.01	5.48	0.01	6.46	0.01	6.56	0.01	ng/L	200

Sample Description	MARLk		Field Blank			
Sample Date	4/18/2023 2:35 PM		4/18/2023			
Lab ID	1869720		1869721			
Mercury (Trace)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	4.78	0.01	0.07	0.01	ng/L	200

Sample Description	JCRK - 03		KC - 01		JC - S - 01		NDR - S - 02			
Sample Date	4/17/2023 10:35 AM		4/17/2023 11:30 AM		4/17/2023 1:30 PM		4/17/2023 2:50 PM			
Lab ID	1869712		1869713		1869714		1869715			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	75	1	52	1	29	1	56	1	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496175

Sample Description	Dup1		MATR - 02		NDR - S - 04b		NDR - S - 06			
Sample Date	4/17/2023		4/18/2023 11:30 AM		4/18/2023 1:10 PM		4/18/2023 3:40 PM			
Lab ID	1869716		1869717		1869718		1869719			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	52	1	56	1	55	1	52	1	ug/L	~

Sample Description	MARLk		Field Blank			
Sample Date	4/18/2023 2:35 PM		4/18/2023			
Lab ID	1869720		1869721			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	28	1	<1 [<1]	1	ug/L	~

Sample Description	JCRK - 03		KC - 01		JC - S - 01		NDR - S - 02			
Sample Date	4/17/2023 10:35 AM		4/17/2023 11:30 AM		4/17/2023 1:30 PM		4/17/2023 2:50 PM			
Lab ID	1869712		1869713		1869714		1869715			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	90	1	82	1	49	1	62	1	ug/L	~
Dissolved Antimony	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	~
Dissolved Arsenic	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Barium	4	1	5	1	14	1	3	1	ug/L	~
Dissolved Beryllium	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	~
Dissolved Bismuth	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Boron	<2	2	3	2	<2	2	<2	2	ug/L	~
Dissolved Cadmium	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Calcium	5420	50	12400	50	4240	50	6150	50	ug/L	~
Dissolved Cerium	<1	1	1	1	<1	1	<1	1	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496175

Sample Description	JCRK - 03		KC - 01		JC - S - 01		NDR - S - 02			
Sample Date	4/17/2023 10:35 AM		4/17/2023 11:30 AM		4/17/2023 1:30 PM		4/17/2023 2:50 PM			
Lab ID	1869712		1869713		1869714		1869715			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Cesium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Chromium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Cobalt	0.1	0.1	0.2	0.1	<0.1	0.1	0.1	0.1	ug/L	~
Dissolved Copper	2	1	2	1	2	1	<1	1	ug/L	~
Dissolved Europium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Gallium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Iron	180	20	206	20	100	20	180	20	ug/L	~
Dissolved Lanthanum	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Lead	0.1	0.1	0.1	0.1	0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Lithium	<5	5	<5	5	<5	5	<5	5	ug/L	~
Dissolved Magnesium	1270	4	2190	4	776	4	1660	4	ug/L	~
Dissolved Manganese	49	1	51	1	5	1	51	1	ug/L	~
Dissolved Mercury	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.2
Dissolved Molybdenum	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Nickel	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Niobium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Phosphorus	<50	50	<50	50	<50	50	<50	50	ug/L	~
Dissolved Potassium	430	100	470	100	540	100	380	100	ug/L	~
Dissolved Rhodium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Rubidium	1	1	1	1	1	1	1	1	ug/L	~
Dissolved Scandium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Selenium	<0.2	0.2	<0.2	0.2	<0.2	0.2	<0.2	0.2	ug/L	~
Dissolved Silicon	950	600	1000	600	790	600	950	600	ug/L	~
Dissolved Silver	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496175

Sample Description	JCRK - 03		KC - 01		JC - S - 01		NDR - S - 02			
Sample Date	4/17/2023 10:35 AM		4/17/2023 11:30 AM		4/17/2023 1:30 PM		4/17/2023 2:50 PM			
Lab ID	1869712		1869713		1869714		1869715			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Sodium	2250	100	3230	100	15600	100	3250	100	ug/L	~
Dissolved Strontium	9	1	18	1	8	1	10	1	ug/L	~
Dissolved Sulfur	<800	800	1200	800	<800	800	<800	800	ug/L	~
Dissolved Tellurium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Thallium	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Thorium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Tin	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Titanium	3	1	4	1	2	1	2	1	ug/L	~
Dissolved Tungsten	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Uranium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Vanadium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Yttrium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Zinc	4	1	12	1	4	1	4	1	ug/L	~
Dissolved Zirconium	<1	1	1	1	<1	1	<1	1	ug/L	~

Sample Description	Dup1		MATR - 02		NDR - S - 04b		NDR - S - 06			
Sample Date	4/17/2023		4/18/2023 11:30 AM		4/18/2023 1:10 PM		4/18/2023 3:40 PM			
Lab ID	1869716		1869717		1869718		1869719			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	84	1	80	1	70	1	67	1	ug/L	~
Dissolved Antimony	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	~
Dissolved Arsenic	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Barium	15	1	15	1	14	1	6	1	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496175

Sample Description	Dup1		MATR - 02		NDR - S - 04b		NDR - S - 06			
Sample Date	4/17/2023		4/18/2023 11:30 AM		4/18/2023 1:10 PM		4/18/2023 3:40 PM			
Lab ID	1869716		1869717		1869718		1869719			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Beryllium	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	~
Dissolved Bismuth	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Boron	3	2	5	2	<2	2	<2	2	ug/L	~
Dissolved Cadmium	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Calcium	12600	50	10500	50	6200	50	5870	50	ug/L	~
Dissolved Cerium	1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Cesium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Chromium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Cobalt	0.2	0.1	0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Copper	3	1	10	1	2	1	1	1	ug/L	~
Dissolved Europium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Gallium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Iron	205	20	180	20	180	20	170	20	ug/L	~
Dissolved Lanthanum	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Lead	0.2	0.1	0.1	0.1	0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Lithium	<5	5	<5	5	<5	5	<5	5	ug/L	~
Dissolved Magnesium	2150	4	2290	4	1700	4	1720	4	ug/L	~
Dissolved Manganese	51	1	28	1	32	1	36	1	ug/L	~
Dissolved Mercury	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.2
Dissolved Molybdenum	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Nickel	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Niobium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Phosphorus	<50	50	<50	50	<50	50	<50	50	ug/L	~
Dissolved Potassium	460	100	440	100	350	100	390	100	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496175

Sample Description	Dup1		MATR - 02		NDR - S - 04b		NDR - S - 06			
Sample Date	4/17/2023		4/18/2023 11:30 AM		4/18/2023 1:10 PM		4/18/2023 3:40 PM			
Lab ID	1869716		1869717		1869718		1869719			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Rhodium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Rubidium	1	1	<1	1	<1	1	1	1	ug/L	~
Dissolved Scandium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Selenium	<0.2	0.2	<0.2	0.2	<0.2	0.2	<0.2	0.2	ug/L	~
Dissolved Silicon	1000	600	1500	600	970	600	960	600	ug/L	~
Dissolved Silver	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Sodium	3140	100	1280	100	2920	100	2520	100	ug/L	~
Dissolved Strontium	18	1	13	1	9	1	9	1	ug/L	~
Dissolved Sulfur	1200	800	<800	800	<800	800	<800	800	ug/L	~
Dissolved Tellurium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Thallium	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Thorium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Tin	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Titanium	4	1	3	1	2	1	2	1	ug/L	~
Dissolved Tungsten	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Uranium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Vanadium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Yttrium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Zinc	13	1	5	1	5	1	4	1	ug/L	~
Dissolved Zirconium	1	1	<1	1	<1	1	<1	1	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496175

Sample Description	MARLk	Field Blank			
Sample Date	4/18/2023 2:35 PM	4/18/2023			
Lab ID	1869720	1869721			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	48	1	<1 [<1]	1	ug/L	~
Dissolved Antimony	<0.5	0.5	<0.5 [<0.5]	0.5	ug/L	~
Dissolved Arsenic	<1	1	<1 [<1]	1	ug/L	~
Dissolved Barium	13	1	2 [2]	1	ug/L	~
Dissolved Beryllium	<0.5	0.5	<0.5 [<0.5]	0.5	ug/L	~
Dissolved Bismuth	<1	1	<1 [<1]	1	ug/L	~
Dissolved Boron	<2	2	<2 [<2]	2	ug/L	~
Dissolved Cadmium	<0.1	0.1	<0.1 [<0.1]	0.1	ug/L	~
Dissolved Calcium	3180	50	<50 [<50]	50	ug/L	~
Dissolved Cerium	<1	1	<1 [<1]	1	ug/L	~
Dissolved Cesium	<1	1	<1 [<1]	1	ug/L	~
Dissolved Chromium	<1	1	<1 [<1]	1	ug/L	~
Dissolved Cobalt	<0.1	0.1	<0.1 [<0.1]	0.1	ug/L	~
Dissolved Copper	1	1	<1 [<1]	1	ug/L	~
Dissolved Europium	<1	1	<1 [<1]	1	ug/L	~
Dissolved Gallium	<1	1	<1 [<1]	1	ug/L	~
Dissolved Iron	85	20	<20 [<20]	20	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496175

Sample Description	MARLk	Field Blank			
Sample Date	4/18/2023 2:35 PM	4/18/2023			
Lab ID	1869720	1869721			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Lanthanum	<1	1	<1 [<1]	1	ug/L	~
Dissolved Lead	0.2	0.1	<0.1 [<0.1]	0.1	ug/L	~
Dissolved Lithium	<5	5	<5 [<5]	5	ug/L	~
Dissolved Magnesium	778	4	<4 [<4]	4	ug/L	~
Dissolved Manganese	11	1	<1 [<1]	1	ug/L	~
Dissolved Mercury	<0.1	0.1	<0.1 [<0.1]	0.1	ug/L	0.2
Dissolved Molybdenum	<1	1	<1 [<1]	1	ug/L	~
Dissolved Nickel	<1	1	<1 [<1]	1	ug/L	~
Dissolved Niobium	<1	1	<1 [<1]	1	ug/L	~
Dissolved Phosphorus	<50	50	<50 [<50]	50	ug/L	~
Dissolved Potassium	200	100	<100 [<100]	100	ug/L	~
Dissolved Rhodium	<1	1	<1 [<1]	1	ug/L	~
Dissolved Rubidium	<1	1	<1 [<1]	1	ug/L	~
Dissolved Scandium	<1	1	<1 [<1]	1	ug/L	~
Dissolved Selenium	<0.2	0.2	<0.2 [<0.2]	0.2	ug/L	~
Dissolved Silicon	<600	600	<600 [<600]	600	ug/L	~
Dissolved Silver	<0.1	0.1	<0.1 [<0.1]	0.1	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496175

Sample Description	MARLk	Field Blank			
Sample Date	4/18/2023 2:35 PM	4/18/2023			
Lab ID	1869720	1869721			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Sodium	210	100	<100 [<100]	100	ug/L	~
Dissolved Strontium	5	1	<1 [<1]	1	ug/L	~
Dissolved Sulfur	<800	800	<800 [<800]	800	ug/L	~
Dissolved Tellurium	<1	1	<1 [<1]	1	ug/L	~
Dissolved Thallium	<0.1	0.1	<0.1 [<0.1]	0.1	ug/L	~
Dissolved Thorium	<1	1	<1 [<1]	1	ug/L	~
Dissolved Tin	<1	1	<1 [<1]	1	ug/L	~
Dissolved Titanium	2	1	<1 [<1]	1	ug/L	~
Dissolved Tungsten	<1	1	<1 [<1]	1	ug/L	~
Dissolved Uranium	<1	1	<1 [<1]	1	ug/L	~
Dissolved Vanadium	<1	1	<1 [<1]	1	ug/L	~
Dissolved Yttrium	<1	1	<1 [<1]	1	ug/L	~
Dissolved Zinc	4	1	<1 [<1]	1	ug/L	~
Dissolved Zirconium	<1	1	<1 [<1]	1	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496175

Sample Description	JCRK - 03		KC - 01		JC - S - 01		NDR - S - 02			
Sample Date	4/17/2023 10:35 AM		4/17/2023 11:30 AM		4/17/2023 1:30 PM		4/17/2023 2:50 PM			
Lab ID	1869712		1869713		1869714		1869715			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	386	1	3210	10	89	1	222	1	ug/L	75
Total Antimony	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	20
Total Arsenic	<1	1	<1	1	<1	1	<1	1	ug/L	5
Total Barium	6	1	22	1	2	1	4	1	ug/L	~
Total Beryllium	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	11
Total Bismuth	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Boron	<2	2	3	2	<2	2	<2	2	ug/L	200
Total Cadmium	0.04	0.02	0.28	0.02	<0.02	0.02	0.03	0.02	ug/L	0.1
Total Calcium	5670	50	15200	50	4270	50	6290	50	ug/L	~
Total Cerium	<1	1	6	1	<1	1	<1	1	ug/L	~
Total Cesium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Chromium	<1	1	6	1	<1	1	<1	1	ug/L	~
Total Cobalt	0.3	0.1	1.6	0.1	<0.1	0.1	0.2	0.1	ug/L	0.9
Total Copper	2	1	6	1	1	1	1	1	ug/L	1
Total Europium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Gallium	<1	1	2	1	<1	1	<1	1	ug/L	~
Total Iron	449	20	3330	200	130	20	336	20	ug/L	300
Total Lanthanum	<1	1	3	1	<1	1	<1	1	ug/L	~
Total Lead	0.4	0.1	1.5	0.1	0.2	0.1	0.2	0.1	ug/L	1
Total Lithium	<5	5	<5	5	<5	5	<5	5	ug/L	~
Total Magnesium	1420	4	4200	4	786	4	1750	4	ug/L	~
Total Manganese	59	1	111	1	6	1	57	1	ug/L	~
Total Mercury	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.2
Total Molybdenum	<1	1	<1	1	<1	1	<1	1	ug/L	40

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496175

Sample Description	JCRK - 03		KC - 01		JC - S - 01		NDR - S - 02			
Sample Date	4/17/2023 10:35 AM		4/17/2023 11:30 AM		4/17/2023 1:30 PM		4/17/2023 2:50 PM			
Lab ID	1869712		1869713		1869714		1869715			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Nickel	<1	1	4	1	<1	1	<1	1	ug/L	25
Total Niobium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Potassium	500	100	1160	100	550	100	410	100	ug/L	~
Total Rhodium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Rubidium	2	1	6	1	1	1	1	1	ug/L	~
Total Scandium	<1	1	3	1	<1	1	<1	1	ug/L	~
Total Selenium	<0.2	0.2	<0.2	0.2	<0.2	0.2	<0.2	0.2	ug/L	100
Total Silicon	1500	600	5700	600	900	600	1200	600	ug/L	~
Total Silver	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.1
Total Sodium	2240	100	3400	100	14900	100	3270	100	ug/L	~
Total Strontium	9	1	25	1	8	1	10	1	ug/L	~
Total Sulphur	<800	800	890	800	<800	800	<800	800	ug/L	~
Total Tellurium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Thallium	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.3
Total Thorium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Tin	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Titanium	14	1	123	1	3	1	9	1	ug/L	~
Total Tungsten	<1	1	<1	1	<1	1	<1	1	ug/L	30
Total Uranium	<1	1	<1	1	<1	1	<1	1	ug/L	5
Total Vanadium	<1	1	5	1	<1	1	<1	1	ug/L	6
Total Yttrium	<1	1	1	1	<1	1	<1	1	ug/L	~
Total Zinc	6	1	36	1	4	1	5	1	ug/L	20
Total Zirconium	2	1	8	1	<1	1	<1	1	ug/L	4

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496175

Sample Description	Dup1		MATR - 02		NDR - S - 04b		NDR - S - 06			
Sample Date	4/17/2023		4/18/2023 11:30 AM		4/18/2023 1:10 PM		4/18/2023 3:40 PM			
Lab ID	1869716		1869717		1869718		1869719			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	2790	10	1310	10	226	1	209	1	ug/L	75
Total Antimony	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	20
Total Arsenic	<1	1	<1	1	<1	1	<1	1	ug/L	5
Total Barium	21	1	13	1	4	1	4	1	ug/L	~
Total Beryllium	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	11
Total Bismuth	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Boron	3	2	5	2	<2	2	<2	2	ug/L	200
Total Cadmium	0.28	0.02	0.05	0.02	0.03	0.02	0.02	0.02	ug/L	0.1
Total Calcium	15800	50	12600	50	6340	50	6040	50	ug/L	~
Total Cerium	5	1	3	1	<1	1	<1	1	ug/L	~
Total Cesium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Chromium	6	1	3	1	<1	1	<1	1	ug/L	~
Total Cobalt	1.5	0.1	0.7	0.1	0.2	0.1	0.2	0.1	ug/L	0.9
Total Copper	6	1	3	1	1	1	1	1	ug/L	1
Total Europium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Gallium	2	1	<1	1	<1	1	<1	1	ug/L	~
Total Iron	2910	200	1400	200	334	20	311	20	ug/L	300
Total Lanthanum	3	1	1	1	<1	1	<1	1	ug/L	~
Total Lead	1.5	0.1	0.7	0.1	0.2	0.1	0.2	0.1	ug/L	1
Total Lithium	<5	5	<5	5	<5	5	<5	5	ug/L	~
Total Magnesium	4190	4	3310	4	1790	4	1740	4	ug/L	~
Total Manganese	111	1	58	1	38	1	42	1	ug/L	~
Total Mercury	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.2
Total Molybdenum	<1	1	<1	1	<1	1	<1	1	ug/L	40

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496175

Sample Description	Dup1		MATR - 02		NDR - S - 04b		NDR - S - 06			
Sample Date	4/17/2023		4/18/2023 11:30 AM		4/18/2023 1:10 PM		4/18/2023 3:40 PM			
Lab ID	1869716		1869717		1869718		1869719			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Nickel	4	1	2	1	<1	1	<1	1	ug/L	25
Total Niobium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Potassium	1160	100	780	100	380	100	430	100	ug/L	~
Total Rhodium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Rubidium	6	1	3	1	1	1	1	1	ug/L	~
Total Scandium	3	1	2	1	<1	1	<1	1	ug/L	~
Total Selenium	<0.2	0.2	<0.2	0.2	<0.2	0.2	<0.2	0.2	ug/L	100
Total Silicon	5300	600	3500	600	1200	600	1200	600	ug/L	~
Total Silver	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.1
Total Sodium	3440	100	1420	100	2970	100	2600	100	ug/L	~
Total Strontium	26	1	17	1	10	1	9	1	ug/L	~
Total Sulphur	970	800	<800	800	<800	800	<800	800	ug/L	~
Total Tellurium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Thallium	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.3
Total Thorium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Tin	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Titanium	113	1	56	1	9	1	8	1	ug/L	~
Total Tungsten	<1	1	<1	1	<1	1	<1	1	ug/L	30
Total Uranium	<1	1	<1	1	<1	1	<1	1	ug/L	5
Total Vanadium	5	1	3	1	<1	1	<1	1	ug/L	6
Total Yttrium	1	1	<1	1	<1	1	<1	1	ug/L	~
Total Zinc	38	1	9	1	4	1	4	1	ug/L	20
Total Zirconium	8	1	4	1	<1	1	<1	1	ug/L	4

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496175

Sample Description	MARLk	Field Blank			
Sample Date	4/18/2023 2:35 PM	4/18/2023			
Lab ID	1869720	1869721			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	166	1	2 [1]	1	ug/L	75
Total Antimony	<0.5	0.5	<0.5 [<0.5]	0.5	ug/L	20
Total Arsenic	<1	1	<1 [<1]	1	ug/L	5
Total Barium	3	1	<1 [<1]	1	ug/L	~
Total Beryllium	<0.5	0.5	<0.5 [<0.5]	0.5	ug/L	11
Total Bismuth	<1	1	<1 [<1]	1	ug/L	~
Total Boron	<2	2	<2 [<2]	2	ug/L	200
Total Cadmium	<0.02	0.02	<0.02 [<0.02]	0.02	ug/L	0.1
Total Calcium	3260	50	<50 [<50]	50	ug/L	~
Total Cerium	<1	1	<1 [<1]	1	ug/L	~
Total Cesium	<1	1	<1 [<1]	1	ug/L	~
Total Chromium	<1	1	<1 [<1]	1	ug/L	~
Total Cobalt	<0.1	0.1	<0.1 [<0.1]	0.1	ug/L	0.9
Total Copper	1	1	<1 [<1]	1	ug/L	1
Total Europium	<1	1	<1 [<1]	1	ug/L	~
Total Gallium	<1	1	<1 [<1]	1	ug/L	~
Total Iron	200	20	<20 [<20]	20	ug/L	300

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496175

Sample Description	MARLk	Field Blank			
Sample Date	4/18/2023 2:35 PM	4/18/2023			
Lab ID	1869720	1869721			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Lanthanum	<1	1	<1 [<1]	1	ug/L	~
Total Lead	0.2	0.1	<0.1 [<0.1]	0.1	ug/L	1
Total Lithium	<5	5	<5 [<5]	5	ug/L	~
Total Magnesium	812	4	<4 [<4]	4	ug/L	~
Total Manganese	12	1	<1 [<1]	1	ug/L	~
Total Mercury	<0.1	0.1	<0.1 [<0.1]	0.1	ug/L	0.2
Total Molybdenum	<1	1	<1 [<1]	1	ug/L	40
Total Nickel	<1	1	<1 [<1]	1	ug/L	25
Total Niobium	<1	1	<1 [<1]	1	ug/L	~
Total Potassium	230	100	<100 [<100]	100	ug/L	~
Total Rhodium	<1	1	<1 [<1]	1	ug/L	~
Total Rubidium	<1	1	<1 [<1]	1	ug/L	~
Total Scandium	<1	1	<1 [<1]	1	ug/L	~
Total Selenium	<0.2	0.2	<0.2 [<0.2]	0.2	ug/L	100
Total Silicon	770	600	<600 [<600]	600	ug/L	~
Total Silver	<0.1	0.1	<0.1 [<0.1]	0.1	ug/L	0.1
Total Sodium	210	100	<100 [<100]	100	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496175

Sample Description	MARLk	Field Blank			
Sample Date	4/18/2023 2:35 PM	4/18/2023			
Lab ID	1869720	1869721			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Strontium	5	1	<1 [<1]	1	ug/L	~
Total Sulphur	<800	800	<800 [<800]	800	ug/L	~
Total Tellurium	<1	1	<1 [<1]	1	ug/L	~
Total Thallium	<0.1	0.1	<0.1 [<0.1]	0.1	ug/L	0.3
Total Thorium	<1	1	<1 [<1]	1	ug/L	~
Total Tin	<1	1	<1 [<1]	1	ug/L	~
Total Titanium	7	1	<1 [<1]	1	ug/L	~
Total Tungsten	<1	1	<1 [<1]	1	ug/L	30
Total Uranium	<1	1	<1 [<1]	1	ug/L	5
Total Vanadium	<1	1	<1 [<1]	1	ug/L	6
Total Yttrium	<1	1	<1 [<1]	1	ug/L	~
Total Zinc	3	1	<1 [<1]	1	ug/L	20
Total Zirconium	<1	1	<1 [<1]	1	ug/L	4

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496175

Sample Description	JCRK - 03		KC - 01		JC - S - 01		NDR - S - 02			
Sample Date	4/17/2023 10:35 AM		4/17/2023 11:30 AM		4/17/2023 1:30 PM		4/17/2023 2:50 PM			
Lab ID	1869712		1869713		1869714		1869715			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	45	10	115	10	85	10	85	10	mg/L	~
Total Suspended Solids	14.00	0.67	80	1	1.70	0.67	5.30	0.67	mg/L	~

Sample Description	Dup1		MATR - 02		NDR - S - 04b		NDR - S - 06			
Sample Date	4/17/2023		4/18/2023 11:30 AM		4/18/2023 1:10 PM		4/18/2023 3:40 PM			
Lab ID	1869716		1869717		1869718		1869719			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	105	10	90	10	80	10	70	10	mg/L	~
Total Suspended Solids	75.5	1	43.70	0.67	5.00	0.67	3.30	0.67	mg/L	~

Sample Description	MARLk		Field Blank			
Sample Date	4/18/2023 2:35 PM		4/18/2023			
Lab ID	1869720		1869721			
Solids	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	65	10	<10	10	mg/L	~
Total Suspended Solids	4.70	0.67	<0.67	0.67	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496175

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

Reproduction of Report: Report shall not be reproduced, except in full, without the approval of Testmark Laboratories Ltd.

ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	496342
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	Adam Gauthier & Jacques Picotte
Date Order Received:	4/19/2023	Analysis Started:	4/20/2023
Arrival Temperature:	2 °C	Analysis Completed:	5/1/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
WBR-S-04	1870244	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	4/19/2023	9:40 AM
WBR-P-03	1870245	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	4/19/2023	10:15 AM
WBR-P-04	1870246	Surface Water	Grab		4/19/2023	11:00 AM
PC-01	1870247	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	4/19/2023	12:30 PM
WBR-REF	1870248	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	4/19/2023	12:45 PM
BS-SW-01	1870249	Surface Water	Grab		4/19/2023	2:45 PM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496342

Method	Lab	Description	Reference
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (0.2um) (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496342

WORK ORDER RESULTS

Sample Description	WBR - S - 04		WBR - P - 03		WBR - P - 04		PC - 01			
Sample Date	4/19/2023 9:40 AM		4/19/2023 10:15 AM		4/19/2023 11:00 AM		4/19/2023 12:30 PM			
Lab ID	1870244		1870245		1870246		1870247			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	2.3	0.1	<0.1	0.1	0.4	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	<0.5	0.5	<0.5	0.5	<0.5	0.5	1.2	0.5	mg/L	~

Sample Description	WBR - REF		BS - SW - 01			
Sample Date	4/19/2023 12:45 PM		4/19/2023 2:45 PM			
Lab ID	1870248		1870249			
Anions	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	0.2	0.2	<0.2 [<0.2]	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05 [<0.05]	0.05	mg/L	~
Nitrate (as N) (Calc.)	0.2	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	0.6	0.5	<0.5 [<0.5]	0.5	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496342

Sample Description	WBR - S - 04		WBR - P - 03		WBR - P - 04		PC - 01			
Sample Date	4/19/2023 9:40 AM		4/19/2023 10:15 AM		4/19/2023 11:00 AM		4/19/2023 12:30 PM			
Lab ID	1870244		1870245		1870246		1870247			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	6.12	N/A	5.7	N/A	5.09	N/A	6.3	N/A	pH	~
Field Temp	0.05	N/A	0	N/A	0.04	N/A	0.02	N/A	°C	~

Sample Description	WBR - REF		BS - SW - 01			
Sample Date	4/19/2023 12:45 PM		4/19/2023 2:45 PM			
Lab ID	1870248		1870249			
Field Parameters	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	6.64	N/A	5.21	N/A	pH	~
Field Temp	0.07	N/A	0.27	N/A	°C	~

Sample Description	WBR - S - 04		WBR - P - 03		WBR - P - 04		PC - 01			
Sample Date	4/19/2023 9:40 AM		4/19/2023 10:15 AM		4/19/2023 11:00 AM		4/19/2023 12:30 PM			
Lab ID	1870244		1870245		1870246		1870247			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	12	5	13	5	15	5	6	5	mg/L as CaCO3	~
Ammonia (as N)	0.036	0.005	0.037	0.005	0.032	0.005	0.057	0.005	mg/L	~
Conductivity	26	1	22	1	18	1	52	1	µS/cm	~
Dissolved Organic Carbon	21.5	0.4	22.6	0.4	22.6	0.4	29.4	0.4	mg/L	~
Free Cyanide	0.002	0.001	0.003	0.001	0.003	0.001	0.003	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	10	2	7	2	5	2	25	2	mg/L as CaCO3	~
pH	6.16	N/A	5.76	N/A	4.96	N/A	6.51	N/A	pH	~
Strong Acid Dissociable Cyanide	0.009	0.002	0.007	0.002	0.005	0.002	0.008	0.002	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496342

Sample Description	WBR - S - 04		WBR - P - 03		WBR - P - 04		PC - 01			
Sample Date	4/19/2023 9:40 AM		4/19/2023 10:15 AM		4/19/2023 11:00 AM		4/19/2023 12:30 PM			
Lab ID	1870244		1870245		1870246		1870247			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Hardness (as CaCO3) (Calc.)	17.0	0.1	10.2	0.1	7.3	0.1	30.4	0.1	mg/L	~
Total Phosphorus (as P)	0.038	0.002	0.023	0.002	0.024	0.002	0.030	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.004 [0.003]	0.001	0.003	0.001	0.003	0.001	0.002	0.001	mg/L	~

Sample Description	WBR - REF		BS - SW - 01			
Sample Date	4/19/2023 12:45 PM		4/19/2023 2:45 PM			
Lab ID	1870248		1870249			
General Chemistry	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	13	5	8	5	mg/L as CaCO3	~
Ammonia (as N)	0.035	0.005	0.025	0.005	mg/L	~
Conductivity	33	1	16	1	µS/cm	~
Dissolved Organic Carbon	21.4	0.4	21.0	0.4	mg/L	~
Free Cyanide	0.003	0.001	0.001	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	15	2	3	2	mg/L as CaCO3	~
pH	6.46	N/A	4.99	N/A	pH	~
Strong Acid Dissociable Cyanide	0.005	0.002	0.005	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	19.3	0.1	6.3	0.1	mg/L	~
Total Phosphorus (as P)	0.028	0.002	0.016	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.003	0.001	0.002	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496342

Sample Description	WBR - S - 04		WBR - P - 03		WBR - P - 04		PC - 01			
Sample Date	4/19/2023 9:40 AM		4/19/2023 10:15 AM		4/19/2023 11:00 AM		4/19/2023 12:30 PM			
Lab ID	1870244		1870245		1870246		1870247			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	6.83	0.01	5.50	0.01	6.35	0.01	10.40	0.01	ng/L	200

Sample Description	WBR - REF		BS - SW - 01			
Sample Date	4/19/2023 12:45 PM		4/19/2023 2:45 PM			
Lab ID	1870248		1870249			
Mercury (Trace)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	6.98	0.01	3.98	0.01	ng/L	200

Sample Description	WBR - S - 04		WBR - P - 03		WBR - P - 04		PC - 01			
Sample Date	4/19/2023 9:40 AM		4/19/2023 10:15 AM		4/19/2023 11:00 AM		4/19/2023 12:30 PM			
Lab ID	1870244		1870245		1870246		1870247			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	76	1	61	1	40	1	116	1	ug/L	~

Sample Description	WBR - REF		BS - SW - 01			
Sample Date	4/19/2023 12:45 PM		4/19/2023 2:45 PM			
Lab ID	1870248		1870249			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	89	1	33	1	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496342

Sample Description	WBR - S - 04		WBR - P - 03		WBR - P - 04		PC - 01			
Sample Date	4/19/2023 9:40 AM		4/19/2023 10:15 AM		4/19/2023 11:00 AM		4/19/2023 12:30 PM			
Lab ID	1870244		1870245		1870246		1870247			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	130	1	65	1	42	1	132	1	ug/L	~
Dissolved Antimony	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	~
Dissolved Arsenic	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Barium	12	1	11	1	12	1	15	1	ug/L	~
Dissolved Beryllium	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	~
Dissolved Bismuth	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Boron	2	2	<2	2	<2	2	3	2	ug/L	~
Dissolved Cadmium	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Calcium	4040	50	2770	50	1860	50	8430	50	ug/L	~
Dissolved Cerium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Cesium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Chromium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Cobalt	0.1	0.1	0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Copper	5	1	4	1	2	1	2	1	ug/L	~
Dissolved Europium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Gallium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Iron	238	20	237	20	140	20	180	20	ug/L	~
Dissolved Lanthanum	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Lead	0.2	0.1	0.2	0.1	0.3	0.1	0.1	0.1	ug/L	~
Dissolved Lithium	<5	5	<5	5	<5	5	<5	5	ug/L	~
Dissolved Magnesium	1070	4	712	4	473	4	2290	4	ug/L	~
Dissolved Manganese	41	1	49	1	31	1	7	1	ug/L	~
Dissolved Mercury	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.2
Dissolved Molybdenum	<1	1	<1	1	<1	1	<1	1	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496342

Sample Description	WBR - S - 04		WBR - P - 03		WBR - P - 04		PC - 01			
Sample Date	4/19/2023 9:40 AM		4/19/2023 10:15 AM		4/19/2023 11:00 AM		4/19/2023 12:30 PM			
Lab ID	1870244		1870245		1870246		1870247			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Nickel	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Niobium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Phosphorus	<50	50	<50	50	<50	50	<50	50	ug/L	~
Dissolved Potassium	340	100	320	100	440	100	340	100	ug/L	~
Dissolved Rhodium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Rubidium	1	1	<1	1	1	1	1	1	ug/L	~
Dissolved Scandium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Selenium	0.2	0.2	<0.2	0.2	<0.2	0.2	<0.2	0.2	ug/L	~
Dissolved Silicon	980	600	880	600	790	600	1400	600	ug/L	~
Dissolved Silver	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Sodium	390	100	370	100	320	100	710	100	ug/L	~
Dissolved Strontium	7	1	5	1	4	1	13	1	ug/L	~
Dissolved Sulfur	<800	800	<800	800	<800	800	<800	800	ug/L	~
Dissolved Tellurium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Thallium	0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Thorium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Tin	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Titanium	4	1	2	1	<1	1	3	1	ug/L	~
Dissolved Tungsten	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Uranium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Vanadium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Yttrium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Dissolved Zinc	4	1	5	1	5	1	6	1	ug/L	~
Dissolved Zirconium	<1	1	<1	1	<1	1	1	1	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496342

Sample Description	WBR - REF		BS - SW - 01			
Sample Date	4/19/2023 12:45 PM		4/19/2023 2:45 PM			
Lab ID	1870248		1870249			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	146	1	32	1	ug/L	~
Dissolved Antimony	<0.5	0.5	<0.5	0.5	ug/L	~
Dissolved Arsenic	<1	1	<1	1	ug/L	~
Dissolved Barium	13	1	13	1	ug/L	~
Dissolved Beryllium	<0.5	0.5	<0.5	0.5	ug/L	~
Dissolved Bismuth	<1	1	<1	1	ug/L	~
Dissolved Boron	2	2	<2	2	ug/L	~
Dissolved Cadmium	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Calcium	5480	50	1830	50	ug/L	~
Dissolved Cerium	<1	1	<1	1	ug/L	~
Dissolved Cesium	<1	1	<1	1	ug/L	~
Dissolved Chromium	<1	1	<1	1	ug/L	~
Dissolved Cobalt	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Copper	5	1	2	1	ug/L	~
Dissolved Europium	<1	1	<1	1	ug/L	~
Dissolved Gallium	<1	1	<1	1	ug/L	~
Dissolved Iron	227	20	120	20	ug/L	~
Dissolved Lanthanum	<1	1	<1	1	ug/L	~
Dissolved Lead	0.2	0.1	0.2	0.1	ug/L	~
Dissolved Lithium	<5	5	<5	5	ug/L	~
Dissolved Magnesium	1370	4	529	4	ug/L	~
Dissolved Manganese	18	1	17	1	ug/L	~
Dissolved Mercury	<0.1	0.1	<0.1	0.1	ug/L	0.2
Dissolved Molybdenum	<1	1	<1	1	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496342

Sample Description	WBR - REF		BS - SW - 01			
Sample Date	4/19/2023 12:45 PM		4/19/2023 2:45 PM			
Lab ID	1870248		1870249			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Nickel	<1	1	<1	1	ug/L	~
Dissolved Niobium	<1	1	<1	1	ug/L	~
Dissolved Phosphorus	<50	50	<50	50	ug/L	~
Dissolved Potassium	320	100	150	100	ug/L	~
Dissolved Rhodium	<1	1	<1	1	ug/L	~
Dissolved Rubidium	<1	1	<1	1	ug/L	~
Dissolved Scandium	<1	1	<1	1	ug/L	~
Dissolved Selenium	<0.2	0.2	<0.2	0.2	ug/L	~
Dissolved Silicon	1100	600	760	600	ug/L	~
Dissolved Silver	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Sodium	500	100	270	100	ug/L	~
Dissolved Strontium	10	1	3	1	ug/L	~
Dissolved Sulfur	<800	800	<800	800	ug/L	~
Dissolved Tellurium	<1	1	<1	1	ug/L	~
Dissolved Thallium	<0.1	0.1	<0.1	0.1	ug/L	~
Dissolved Thorium	<1	1	<1	1	ug/L	~
Dissolved Tin	<1	1	<1	1	ug/L	~
Dissolved Titanium	4	1	<1	1	ug/L	~
Dissolved Tungsten	<1	1	<1	1	ug/L	~
Dissolved Uranium	<1	1	<1	1	ug/L	~
Dissolved Vanadium	<1	1	<1	1	ug/L	~
Dissolved Yttrium	<1	1	<1	1	ug/L	~
Dissolved Zinc	4	1	5	1	ug/L	~
Dissolved Zirconium	1	1	<1	1	ug/L	~

CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496342

Sample Description	WBR - S - 04		WBR - P - 03		WBR - P - 04		PC - 01			
Sample Date	4/19/2023 9:40 AM		4/19/2023 10:15 AM		4/19/2023 11:00 AM		4/19/2023 12:30 PM			
Lab ID	1870244		1870245		1870246		1870247			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	387	1	81	1	61	1	198	1	ug/L	75
Total Antimony	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	20
Total Arsenic	<1	1	<1	1	<1	1	<1	1	ug/L	5
Total Barium	6	1	3	1	2	1	5	1	ug/L	~
Total Beryllium	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	ug/L	11
Total Bismuth	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Boron	<2	2	<2	2	<2	2	2	2	ug/L	200
Total Cadmium	0.06	0.02	0.06	0.02	0.06	0.02	0.05	0.02	ug/L	0.1
Total Calcium	4740	50	2870	50	1990	50	8880	50	ug/L	~
Total Cerium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Cesium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Chromium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Cobalt	0.3	0.1	0.2	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.9
Total Copper	2	1	<1	1	1	1	2	1	ug/L	1
Total Europium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Gallium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Iron	478	20	260	20	170	20	243	20	ug/L	300
Total Lanthanum	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Lead	0.3	0.1	0.3	0.1	0.4	0.1	0.2	0.1	ug/L	1
Total Lithium	<5	5	<5	5	<5	5	<5	5	ug/L	~
Total Magnesium	1320	4	749	4	502	4	2370	4	ug/L	~
Total Manganese	46	1	52	1	34	1	8	1	ug/L	~
Total Mercury	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.2

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496342

Sample Description	WBR - S - 04		WBR - P - 03		WBR - P - 04		PC - 01			
Sample Date	4/19/2023 9:40 AM		4/19/2023 10:15 AM		4/19/2023 11:00 AM		4/19/2023 12:30 PM			
Lab ID	1870244		1870245		1870246		1870247			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Molybdenum	<1	1	<1	1	<1	1	<1	1	ug/L	40
Total Nickel	<1	1	<1	1	<1	1	<1	1	ug/L	25
Total Niobium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Potassium	490	100	370	100	520	100	400	100	ug/L	~
Total Rhodium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Rubidium	2	1	1	1	1	1	1	1	ug/L	~
Total Scandium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Selenium	<0.2	0.2	<0.2	0.2	<0.2	0.2	<0.2	0.2	ug/L	100
Total Silicon	1500	600	940	600	830	600	1500	600	ug/L	~
Total Silver	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.1
Total Sodium	500	100	440	100	430	100	770	100	ug/L	~
Total Strontium	8	1	5	1	4	1	13	1	ug/L	~
Total Sulphur	<800	800	<800	800	<800	800	<800	800	ug/L	~
Total Tellurium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Thallium	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.3
Total Thorium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Tin	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Titanium	16	1	2	1	2	1	6	1	ug/L	~
Total Tungsten	<1	1	<1	1	<1	1	<1	1	ug/L	30
Total Uranium	<1	1	<1	1	<1	1	<1	1	ug/L	5
Total Vanadium	<1	1	<1	1	<1	1	<1	1	ug/L	6
Total Yttrium	<1	1	<1	1	<1	1	<1	1	ug/L	~
Total Zinc	5	1	4	1	5	1	5	1	ug/L	20
Total Zirconium	2	1	<1	1	<1	1	1	1	ug/L	4

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496342

Sample Description	WBR - REF	BS - SW - 01				
Sample Date	4/19/2023 12:45 PM	4/19/2023 2:45 PM				
Lab ID	1870248	1870249				
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	435	1	40	1	ug/L	75
Total Antimony	<0.5	0.5	<0.5	0.5	ug/L	20
Total Arsenic	<1	1	<1	1	ug/L	5
Total Barium	6	1	1	1	ug/L	~
Total Beryllium	<0.5	0.5	<0.5	0.5	ug/L	11
Total Bismuth	<1	1	<1	1	ug/L	~
Total Boron	<2	2	<2	2	ug/L	200
Total Cadmium	0.06	0.02	0.06	0.02	ug/L	0.1
Total Calcium	5540	50	1970	50	ug/L	~
Total Cerium	<1	1	<1	1	ug/L	~
Total Cesium	<1	1	<1	1	ug/L	~
Total Chromium	<1	1	<1	1	ug/L	~
Total Cobalt	0.2	0.1	<0.1	0.1	ug/L	0.9
Total Copper	2	1	<1	1	ug/L	1
Total Europium	<1	1	<1	1	ug/L	~
Total Gallium	<1	1	<1	1	ug/L	~
Total Iron	491	20	130	20	ug/L	300
Total Lanthanum	<1	1	<1	1	ug/L	~
Total Lead	0.3	0.1	0.3	0.1	ug/L	1
Total Lithium	<5	5	<5	5	ug/L	~
Total Magnesium	1410	4	559	4	ug/L	~
Total Manganese	23	1	18	1	ug/L	~
Total Mercury	<0.1	0.1	<0.1	0.1	ug/L	0.2
Total Molybdenum	<1	1	<1	1	ug/L	40

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496342

Sample Description	WBR - REF		BS - SW - 01			
Sample Date	4/19/2023 12:45 PM		4/19/2023 2:45 PM			
Lab ID	1870248		1870249			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Nickel	<1	1	<1	1	ug/L	25
Total Niobium	<1	1	<1	1	ug/L	~
Total Potassium	470	100	200	100	ug/L	~
Total Rhodium	<1	1	<1	1	ug/L	~
Total Rubidium	2	1	<1	1	ug/L	~
Total Scandium	<1	1	<1	1	ug/L	~
Total Selenium	<0.2	0.2	<0.2	0.2	ug/L	100
Total Silicon	1600	600	840	600	ug/L	~
Total Silver	<0.1	0.1	<0.1	0.1	ug/L	0.1
Total Sodium	600	100	310	100	ug/L	~
Total Strontium	10	1	4	1	ug/L	~
Total Sulphur	<800	800	<800	800	ug/L	~
Total Tellurium	<1	1	<1	1	ug/L	~
Total Thallium	<0.1	0.1	<0.1	0.1	ug/L	0.3
Total Thorium	<1	1	<1	1	ug/L	~
Total Tin	<1	1	<1	1	ug/L	~
Total Titanium	16	1	1	1	ug/L	~
Total Tungsten	<1	1	<1	1	ug/L	30
Total Uranium	<1	1	<1	1	ug/L	5
Total Vanadium	<1	1	<1	1	ug/L	6
Total Yttrium	<1	1	<1	1	ug/L	~
Total Zinc	6	1	4	1	ug/L	20
Total Zirconium	2	1	<1	1	ug/L	4

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496342

Sample Description	WBR - S - 04		WBR - P - 03		WBR - P - 04		PC - 01			
Sample Date	4/19/2023 9:40 AM		4/19/2023 10:15 AM		4/19/2023 11:00 AM		4/19/2023 12:30 PM			
Lab ID	1870244		1870245		1870246		1870247			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	80	10	65	10	60	10	80	10	mg/L	~
Total Suspended Solids	4.70	0.67	1.30	0.67	3.70	0.67	3.00	0.67	mg/L	~

Sample Description	WBR - REF		BS - SW - 01			
Sample Date	4/19/2023 12:45 PM		4/19/2023 2:45 PM			
Lab ID	1870248		1870249			
Solids	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	55	10	50	10	mg/L	~
Total Suspended Solids	6.00	0.67	2.70	0.67	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496342

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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Committed to Quality and Service

CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	496973
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	Adam Gauthier
Date Order Received:	4/26/2023	Analysis Started:	4/26/2023
Arrival Temperature:	16 °C	Analysis Completed:	5/16/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
WBR-S-07	1872509	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	4/21/2023	9:30 AM
WBR-S-06	1872510	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	4/22/2023	11:50 AM
JCRK-02	1872511	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	4/19/2023	12:50 PM
Travel Blank	1872512	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	4/26/2023	

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C

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Method	Lab	Description	Reference
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (0.2um) (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496973

WORK ORDER RESULTS

Sample Description	WBR - S - 07		WBR - S - 06		JCRK - 02		Travel Blank			
Sample Date	4/21/2023 9:30 AM		4/22/2023 11:50 AM		4/19/2023 12:50 PM		4/26/2023			
Lab ID	1872509		1872510		1872511		1872512			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	0.2 [<0.2]	0.2	<0.2	0.2	3.0	0.2	<0.2	0.2	mg/L	~
Fluoride	<0.05 [<0.05]	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	0.1	0.1	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	<0.5 [<0.5]	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	mg/L	~

Sample Description	WBR - S - 07		WBR - S - 06		JCRK - 02			
Sample Date	4/21/2023 9:30 AM		4/22/2023 11:50 AM		4/19/2023 12:50 PM			
Lab ID	1872509		1872510		1872511			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	6.25	N/A	6.32	N/A	6.09	N/A	pH	~
Field Temp	0.39	N/A	0.41	N/A	1.41	N/A	°C	~

Sample Description	WBR - S - 07		WBR - S - 06		JCRK - 02		Travel Blank			
Sample Date	4/21/2023 9:30 AM		4/22/2023 11:50 AM		4/19/2023 12:50 PM		4/26/2023			
Lab ID	1872509		1872510		1872511		1872512			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	5	5	12	5	6	5	<5	5	mg/L as CaCO3	~
Ammonia (as N)	0.037 [0.037]	0.005	0.041	0.005	0.035	0.005	<0.005	0.005	mg/L	~

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Sample Description	WBR - S - 07		WBR - S - 06		JCRK - 02		Travel Blank			
Sample Date	4/21/2023 9:30 AM		4/22/2023 11:50 AM		4/19/2023 12:50 PM		4/26/2023			
Lab ID	1872509		1872510		1872511		1872512			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Conductivity	34	1	38	1	35	1	1	1	µS/cm	~
Dissolved Organic Carbon	21	2	23	2	22	2	0.7	0.4	mg/L	~
Free Cyanide	0.002	0.001	0.003	0.001	0.003	0.001	0.002	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	15	2	18	2	8	2	<2	2	mg/L as CaCO3	~
pH	6.7	N/A	6.77	N/A	6.26	N/A	5.48	N/A	pH	~
Strong Acid Dissociable Cyanide	0.006 [0.004]	0.002	0.005	0.002	0.004	0.002	<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	21.5	0.1	23.5	0.1	14.0	0.1	<0.1	0.1	mg/L	~
Total Phosphorus (as P)	0.026	0.002	0.023	0.002	0.020	0.002	<0.002	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.003	0.001	0.003	0.001	0.003	0.001	0.002	0.001	mg/L	~

Sample Description	WBR - S - 07		WBR - S - 06		JCRK - 02		Travel Blank			
Sample Date	4/21/2023 9:30 AM		4/22/2023 11:50 AM		4/19/2023 12:50 PM		4/26/2023			
Lab ID	1872509		1872510		1872511		1872512			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	8.32	0.01	7.46	0.01	6.94	0.01	0.08	0.01	ng/L	200

Sample Description	WBR - S - 07		WBR - S - 06		JCRK - 02		Travel Blank			
Sample Date	4/21/2023 9:30 AM		4/22/2023 11:50 AM		4/19/2023 12:50 PM		4/26/2023			
Lab ID	1872509		1872510		1872511		1872512			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.103	0.001	0.108	0.001	0.101	0.001	<0.001 [<0.001]	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

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Sample Description	WBR - S - 07		WBR - S - 06		JCRK - 02		Travel Blank			
Sample Date	4/21/2023 9:30 AM		4/22/2023 11:50 AM		4/19/2023 12:50 PM		4/26/2023			
Lab ID	1872509		1872510		1872511		1872512			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.150	0.001	0.157	0.001	0.129	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Antimony	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005 [<0.0005]	0.0005	mg/L	~
Dissolved Arsenic	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Barium	0.005	0.001	0.004	0.001	0.004	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Beryllium	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005 [<0.0005]	0.0005	mg/L	~
Dissolved Bismuth	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Boron	0.004	0.002	0.003	0.002	<0.002	0.002	<0.002 [<0.002]	0.002	mg/L	~
Dissolved Cadmium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Calcium	5.65	0.05	6.09	0.05	4.32	0.05	<0.05 [<0.05]	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Cesium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Chromium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Cobalt	<0.0001	0.0001	<0.0001	0.0001	0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Copper	0.002	0.001	0.002	0.001	0.003	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Iron	0.26	0.02	0.28	0.02	0.23	0.02	<0.02 [<0.02]	0.02	mg/L	~

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Work Order Number: 496973

Sample Description	WBR - S - 07		WBR - S - 06		JCRK - 02		Travel Blank			
Sample Date	4/21/2023 9:30 AM		4/22/2023 11:50 AM		4/19/2023 12:50 PM		4/26/2023			
Lab ID	1872509		1872510		1872511		1872512			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Lead	0.0002	0.0001	0.0002	0.0001	0.0003	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Lithium	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005 [<0.005]	0.005	mg/L	~
Dissolved Magnesium	1.360	0.004	1.350	0.004	0.864	0.004	<0.004 [<0.004]	0.004	mg/L	~
Dissolved Manganese	0.029	0.001	0.030	0.001	0.028	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	0.0002
Dissolved Molybdenum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Nickel	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05 [<0.05]	0.05	mg/L	~
Dissolved Potassium	0.3	0.1	0.3	0.1	0.3	0.1	<0.1 [<0.1]	0.1	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Rubidium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Scandium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Selenium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	mg/L	~
Dissolved Silicon	1.2	0.6	1.2	0.6	1.0	0.6	<0.6 [<0.6]	0.6	mg/L	~
Dissolved Silver	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 496973

Sample Description	WBR - S - 07		WBR - S - 06		JCRK - 02		Travel Blank			
Sample Date	4/21/2023 9:30 AM		4/22/2023 11:50 AM		4/19/2023 12:50 PM		4/26/2023			
Lab ID	1872509		1872510		1872511		1872512			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Sodium	0.5	0.1	0.5	0.1	3.6	0.1	<0.1 [<0.1]	0.1	mg/L	~
Dissolved Strontium	0.010	0.001	0.010	0.001	0.009	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Sulfur	1.0	0.8	0.9	0.8	1.0	0.8	1.1 [1.1]	0.8	mg/L	~
Dissolved Tellurium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Thallium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Thorium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Tin	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Titanium	0.004	0.001	0.004	0.001	0.004	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Tungsten	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Uranium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Vanadium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Zinc	0.005	0.001	0.005	0.001	0.008	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Zirconium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~

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Canada Nickel Company Inc.

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Sample Description	WBR - S - 07		WBR - S - 06		JCRK - 02		Travel Blank			
Sample Date	4/21/2023 9:30 AM		4/22/2023 11:50 AM		4/19/2023 12:50 PM		4/26/2023			
Lab ID	1872509		1872510		1872511		1872512			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.530	0.001	0.439	0.001	0.248	0.001	0.001 [0.002]	0.001	mg/L	0.075
Total Antimony	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005 [<0.0005]	0.0005	mg/L	0.02
Total Arsenic	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	0.005
Total Barium	0.006	0.001	0.006	0.001	0.004	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Beryllium	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005 [<0.0005]	0.0005	mg/L	0.011
Total Bismuth	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Boron	0.002	0.002	<0.002	0.002	<0.002	0.002	<0.002 [<0.002]	0.002	mg/L	0.2
Total Cadmium	0.00004	0.00002	0.00004	0.00002	0.00004	0.00002	<0.00002 [<0.00002]	0.00002	mg/L	0.0001
Total Calcium	5.77	0.05	6.59	0.05	4.09	0.05	<0.05 [<0.05]	0.05	mg/L	~
Total Cerium	<0.001	0.001	0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Cesium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Chromium	0.002	0.001	0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Cobalt	0.0002	0.0001	0.0002	0.0001	0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	0.0009
Total Copper	0.002	0.001	0.002	0.001	0.002	0.001	<0.001 [0.002]	0.001	mg/L	0.001
Total Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Iron	0.63	0.02	0.55	0.02	0.32	0.02	<0.02 [<0.02]	0.02	mg/L	0.3

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496973

Sample Description	WBR - S - 07		WBR - S - 06		JCRK - 02		Travel Blank			
Sample Date	4/21/2023 9:30 AM		4/22/2023 11:50 AM		4/19/2023 12:50 PM		4/26/2023			
Lab ID	1872509		1872510		1872511		1872512			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Lead	0.0004	0.0001	0.0004	0.0001	0.0003	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	0.001
Total Lithium	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005 [<0.005]	0.005	mg/L	~
Total Magnesium	1.520	0.004	1.560	0.004	0.870	0.004	<0.004 [<0.004]	0.004	mg/L	~
Total Manganese	0.036	0.001	0.041	0.001	0.030	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Mercury	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	0.0002
Total Molybdenum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	0.04
Total Nickel	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Potassium	0.4	0.1	0.3	0.1	0.3	0.1	<0.1 [<0.1]	0.1	mg/L	~
Total Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Rubidium	0.002	0.001	0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Scandium	0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Selenium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	mg/L	0.1
Total Silicon	2.0	0.6	1.8	0.6	1.3	0.6	<0.6 [<0.6]	0.6	mg/L	~
Total Silver	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	0.0001
Total Sodium	0.5	0.1	0.5	0.1	3.4	0.1	<0.1 [<0.1]	0.1	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496973

Sample Description	WBR - S - 07		WBR - S - 06		JCRK - 02		Travel Blank			
Sample Date	4/21/2023 9:30 AM		4/22/2023 11:50 AM		4/19/2023 12:50 PM		4/26/2023			
Lab ID	1872509		1872510		1872511		1872512			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Strontium	0.010	0.001	0.011	0.001	0.008	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Sulphur	<0.8	0.8	<0.8	0.8	0.8	0.8	<0.8 [<0.8]	0.8	mg/L	~
Total Tellurium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Thallium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	0.0003
Total Thorium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Tin	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Titanium	0.021	0.001	0.015	0.001	0.008	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Tungsten	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	0.03
Total Uranium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	0.005
Total Vanadium	0.001	0.001	0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Zinc	0.005	0.001	0.005	0.001	0.008	0.001	<0.001 [0.001]	0.001	mg/L	0.02
Total Zirconium	0.001	0.001	0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	0.004

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 496973

Sample Description	WBR - S - 07		WBR - S - 06		JCRK - 02		Travel Blank			
Sample Date	4/21/2023 9:30 AM		4/22/2023 11:50 AM		4/19/2023 12:50 PM		4/26/2023			
Lab ID	1872509		1872510		1872511		1872512			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	55	10	50	10	55 [50]	10	<10	10	mg/L	~
Total Suspended Solids	7.33	0.67	14.30	0.67	2.5 [2]	1	<0.67	0.67	mg/L	~

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	500390
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	David Duciaume
Date Order Received:	5/25/2023	Analysis Started:	5/26/2023
Arrival Temperature:	16 °C	Analysis Completed:	6/13/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
NDR.S-04b	1884825	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	5/25/2023	1:30 PM
NDR-S-06	1884826	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	5/24/2023	1:15 PM
JC-S-01	1884827	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	5/24/2023	2:10 PM
JCRK-02	1884828	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	5/24/2023	2:30 PM
MATR-01	1884829	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	5/25/2023	11:30 AM
MATR-02	1884830	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	5/25/2023	11:55 AM
PC-01	1884831	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	5/23/2023	1:35 PM
WBR-S-Ref	1884832	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	5/23/2023	1:50 PM
WBR-S-04	1884833	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	5/23/2023	11:15 AM
WBR-S-06	1884834	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	5/23/2023	12:40 PM
WBR-P-03	1884835	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	5/23/2023	11:40 AM
WBR-P-04	1884836	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	5/23/2023	12:10 PM
BS-SW-01	1884837	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	5/25/2023	8:10 AM
SWDup1	1884838	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	5/24/2023	
UWC-1	1884839	Water	Grab		5/25/2023	10:10 AM

METHODS AND INSTRUMENTATION

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500390

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Kirkland Lake	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (0.2um) (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500390

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500390

WORK ORDER RESULTS

Sample Description	NDR.S - 04b		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	5/25/2023 1:30 PM		5/24/2023 1:15 PM		5/24/2023 2:10 PM		5/24/2023 2:30 PM			
Lab ID	1884825		1884826		1884827		1884828			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	3.5	0.2	2.3	0.2	7.2	0.2	3.4	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	<0.5	0.5	<0.5	0.5	<0.5	0.5	0.7	0.5	mg/L	~

Sample Description	MATR - 01		MATR - 02		PC - 01		WBR - S - Ref			
Sample Date	5/25/2023 11:30 AM		5/25/2023 11:55 AM		5/23/2023 1:35 PM		5/23/2023 1:50 PM			
Lab ID	1884829		1884830		1884831		1884832			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	1.5	0.2	1.4	0.2	<0.2	0.2	<0.2	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	0.2	0.1	0.2	0.1	0.3	0.1	0.2	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	3.0	0.5	2.8	0.5	0.6	0.5	<0.5	0.5	mg/L	~

Sample Description	WBR - S - 04		WBR - S - 06		WBR - P - 03		WBR - P - 04			
Sample Date	5/23/2023 11:15 AM		5/23/2023 12:40 PM		5/23/2023 11:40 AM		5/23/2023 12:10 PM			
Lab ID	1884833		1884834		1884835		1884836			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	<0.2	0.2	<0.2	0.2	<0.2	0.2	<0.2	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	0.32	0.05	<0.05	0.05	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 500390

Sample Description	WBR - S - 04		WBR - S - 06		WBR - P - 03		WBR - P - 04			
Sample Date	5/23/2023 11:15 AM		5/23/2023 12:40 PM		5/23/2023 11:40 AM		5/23/2023 12:10 PM			
Lab ID	1884833		1884834		1884835		1884836			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Nitrate (as N) (Calc.)	0.3	0.1	0.2	0.1	0.1	0.1	0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	mg/L	~

Sample Description	BS - SW - 01		SWDup1		UWC - 1			
Sample Date	5/25/2023 8:10 AM		5/24/2023		5/25/2023 10:10 AM			
Lab ID	1884837		1884838		1884839			
Anions	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	<0.2	0.2	2.4	0.2	<0.2	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	0.2	0.1	0.2	0.1	0.2	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	<0.5	0.5	<0.5	0.5	<0.5	0.5	mg/L	~

Sample Description	NDR.S - 04b		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	5/25/2023 1:30 PM		5/24/2023 1:15 PM		5/24/2023 2:10 PM		5/24/2023 2:30 PM			
Lab ID	1884825		1884826		1884827		1884828			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field Temp	12.6	N/A	11.85	N/A	9.82	N/A	10.63	N/A	°C	~

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Canada Nickel Company Inc.

Work Order Number: 500390

Sample Description	MATR - 01		MATR - 02		PC - 01		WBR - S - Ref			
Sample Date	5/25/2023 11:30 AM		5/25/2023 11:55 AM		5/23/2023 1:35 PM		5/23/2023 1:50 PM			
Lab ID	1884829		1884830		1884831		1884832			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field Temp	12.48	N/A	12.62	N/A	10.88	N/A	11.54	N/A	°C	~

Sample Description	WBR - S - 04		WBR - S - 06		WBR - P - 03		WBR - P - 04			
Sample Date	5/23/2023 11:15 AM		5/23/2023 12:40 PM		5/23/2023 11:40 AM		5/23/2023 12:10 PM			
Lab ID	1884833		1884834		1884835		1884836			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field Temp	12.09	N/A	11.71	N/A	13.58	N/A	12.03	N/A	°C	~

Sample Description	BS - SW - 01		UWC - 1			
Sample Date	5/25/2023 8:10 AM		5/25/2023 10:10 AM			
Lab ID	1884837		1884839			
Field Parameters	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field Temp	7.75	N/A	11.02	N/A	°C	~

Sample Description	NDR.S - 04b		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	5/25/2023 1:30 PM		5/24/2023 1:15 PM		5/24/2023 2:10 PM		5/24/2023 2:30 PM			
Lab ID	1884825		1884826		1884827		1884828			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	6	5	8	5	12	5	10	5	mg/L as CaCO3	~
Ammonia (as N)	0.047 [0.047]	0.005	0.048	0.005	0.042	0.005	0.044	0.005	mg/L	~
Conductivity	72	1	61	1	49	1	43	1	µS/cm	~
Dissolved Organic Carbon	27.0	0.8	26.2	0.8	27.6	0.8	25.7	0.8	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500390

Sample Description	NDR.S - 04b		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	5/25/2023 1:30 PM		5/24/2023 1:15 PM		5/24/2023 2:10 PM		5/24/2023 2:30 PM			
Lab ID	1884825		1884826		1884827		1884828			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Free Cyanide	0.004 [0.003]	0.001	0.003	0.001	0.004	0.001	0.004	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	28	2	27	2	6	2	14	2	mg/L as CaCO3	~
pH	7.34	N/A	6.76	N/A	5.28	N/A	6.17	N/A	pH	~
Strong Acid Dissociable Cyanide	<0.002	0.002	<0.002	0.002	<0.002	0.002	<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	34.1	0.1	33.8	0.1	13.7	0.1	17.2	0.1	mg/L	~
Total Phosphorus (as P)	0.013	0.002	0.008	0.002	<0.002	0.002	0.009 [0.008]	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.001	0.001	0.002	0.001	<0.001	0.001	0.001	0.001	mg/L	~

Sample Description	MATR - 01		MATR - 02		PC - 01		WBR - S - Ref			
Sample Date	5/25/2023 11:30 AM		5/25/2023 11:55 AM		5/23/2023 1:35 PM		5/23/2023 1:50 PM			
Lab ID	1884829		1884830		1884831		1884832			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	13	5	18	5	9	5	8	5	mg/L as CaCO3	~
Ammonia (as N)	0.026	0.005	0.027	0.005	0.065	0.005	0.052	0.005	mg/L	~
Conductivity	82	1	82	1	48	1	41	1	µS/cm	~
Dissolved Organic Carbon	12.8	0.4	12.9	0.4	29.2	0.8	25.9	0.8	mg/L	~
Free Cyanide	0.004	0.001			0.002	0.001	0.004	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	37	2	37	2	22	2	19	2	mg/L as CaCO3	~
pH	7.08	N/A	6.96	N/A	6.58	N/A	6.66	N/A	pH	~
Strong Acid Dissociable Cyanide	<0.002	0.002			<0.002	0.002	<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	39.8	0.1	39.6	0.1	30.2	0.1	26.3	0.1	mg/L	~

CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500390

Sample Description	MATR - 01		MATR - 02		PC - 01		WBR - S - Ref			
Sample Date	5/25/2023 11:30 AM		5/25/2023 11:55 AM		5/23/2023 1:35 PM		5/23/2023 1:50 PM			
Lab ID	1884829		1884830		1884831		1884832			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Phosphorus (as P)	0.008	0.002	0.007	0.002	0.032	0.002	0.020	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.001	0.001			<0.001	0.001	0.002	0.001	mg/L	~

Sample Description	WBR - S - 04		WBR - S - 06		WBR - P - 03		WBR - P - 04			
Sample Date	5/23/2023 11:15 AM		5/23/2023 12:40 PM		5/23/2023 11:40 AM		5/23/2023 12:10 PM			
Lab ID	1884833		1884834		1884835		1884836			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	16	5	8	5	14	5	19	5	mg/L as CaCO3	~
Ammonia (as N)	0.045	0.005	0.045	0.005	0.044	0.005	0.047	0.005	mg/L	~
Conductivity	45	1	42	1	24	1	22	1	µS/cm	~
Dissolved Organic Carbon	26.6	0.8	27.4	0.8	28.8	0.8	28.9	0.8	mg/L	~
Free Cyanide	0.005	0.001	0.004	0.001					mg/L	0.005
M-Alkalinity (pH 4.5)	23	2	19	2	8	2	5	2	mg/L as CaCO3	~
pH	6.75	N/A	6.6	N/A	5.81	N/A	5.59	N/A	pH	~
Strong Acid Dissociable Cyanide	<0.002	0.002	<0.002	0.002					mg/L	~
Total Hardness (as CaCO3) (Calc.)	23.6	0.1	26.0	0.1	14.1	0.1	10.1	0.1	mg/L	~
Total Phosphorus (as P)	0.011	0.002	0.012	0.002	0.002	0.002	0.013	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.002	0.001	0.003	0.001					mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500390

Sample Description	BS - SW - 01		SWDup1		UWC - 1			
Sample Date	5/25/2023 8:10 AM		5/24/2023		5/25/2023 10:10 AM			
Lab ID	1884837		1884838		1884839			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	14	5	8	5	19	5	mg/L as CaCO3	~
Ammonia (as N)	0.050	0.005	0.046	0.005	0.042	0.005	mg/L	~
Conductivity	23	1	62	1	22	1	µS/cm	~
Dissolved Organic Carbon	29.8	0.8	27.6	0.8	28.5	0.8	mg/L	~
Free Cyanide	0.005	0.001	0.005	0.001	0.004	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	5	2	26	2	6	2	mg/L as CaCO3	~
pH	5.29	N/A	6.72	N/A	5.77	N/A	pH	~
Strong Acid Dissociable Cyanide	<0.002	0.002	<0.002	0.002	<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	11.9	0.1	32.8	0.1	11.0	0.1	mg/L	~
Total Phosphorus (as P)	0.012	0.002	0.008	0.002	<0.002	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.002	0.001	0.003	0.001	0.001	0.001	mg/L	~

Sample Description	NDR.S - 04b		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	5/25/2023 1:30 PM		5/24/2023 1:15 PM		5/24/2023 2:10 PM		5/24/2023 2:30 PM			
Lab ID	1884825		1884826		1884827		1884828			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	6.07	0.01	6.20	0.01	4.69	0.01	6.09	0.01	ng/L	200

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500390

Sample Description	MATR - 01		PC - 01		WBR - S - Ref		WBR - S - 04			
Sample Date	5/25/2023 11:30 AM		5/23/2023 1:35 PM		5/23/2023 1:50 PM		5/23/2023 11:15 AM			
Lab ID	1884829		1884831		1884832		1884833			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	3.77	0.01	9.99	0.01	7.09	0.01	6.12	0.01	ng/L	200

Sample Description	WBR - S - 06		BS - SW - 01		SWDup1		UWC - 1			
Sample Date	5/23/2023 12:40 PM		5/25/2023 8:10 AM		5/24/2023		5/25/2023 10:10 AM			
Lab ID	1884834		1884837		1884838		1884839			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	7.35	0.01	3.89	0.01	5.96	0.01	2.65	0.01	ng/L	200

Sample Description	NDR.S - 04b		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	5/25/2023 1:30 PM		5/24/2023 1:15 PM		5/24/2023 2:10 PM		5/24/2023 2:30 PM			
Lab ID	1884825		1884826		1884827		1884828			
Mercury by CV	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01 [<0.01]	0.01	<0.01	0.01	<0.01	0.01	ug/L	0.2

Sample Description	MATR - 01		PC - 01		WBR - S - Ref		WBR - S - 04			
Sample Date	5/25/2023 11:30 AM		5/23/2023 1:35 PM		5/23/2023 1:50 PM		5/23/2023 11:15 AM			
Lab ID	1884829		1884831		1884832		1884833			
Mercury by CV	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	0.01	0.01	<0.01	0.01	<0.01	0.01	ug/L	0.2

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Canada Nickel Company Inc.

Work Order Number: 500390

Sample Description	WBR - S - 06		BS - SW - 01		SWDup1		UWC - 1			
Sample Date	5/23/2023 12:40 PM		5/25/2023 8:10 AM		5/24/2023		5/25/2023 10:10 AM			
Lab ID	1884834		1884837		1884838		1884839			
Mercury by CV	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	ug/L	0.2

Sample Description	NDR.S - 04b		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	5/25/2023 1:30 PM		5/24/2023 1:15 PM		5/24/2023 2:10 PM		5/24/2023 2:30 PM			
Lab ID	1884825		1884826		1884827		1884828			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.105 [0.104]	0.001	0.091	0.001	0.063	0.001	0.144	0.001	mg/L	~

Sample Description	MATR - 01		MATR - 02		PC - 01		WBR - S - Ref			
Sample Date	5/25/2023 11:30 AM		5/25/2023 11:55 AM		5/23/2023 1:35 PM		5/23/2023 1:50 PM			
Lab ID	1884829		1884830		1884831		1884832			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.046	0.001	0.046	0.001	0.202	0.001	0.15	0.01	mg/L	~

Sample Description	WBR - S - 04		WBR - S - 06		WBR - P - 03		WBR - P - 04			
Sample Date	5/23/2023 11:15 AM		5/23/2023 12:40 PM		5/23/2023 11:40 AM		5/23/2023 12:10 PM			
Lab ID	1884833		1884834		1884835		1884836			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.158	0.001	0.162	0.001	0.114	0.001	0.074	0.001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 500390

Sample Description	BS - SW - 01		SWDup1		UWC - 1			
Sample Date	5/25/2023 8:10 AM		5/24/2023		5/25/2023 10:10 AM			
Lab ID	1884837		1884838		1884839			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.084	0.001	0.087	0.001	0.061	0.001	mg/L	~

Sample Description	NDR.S - 04b		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	5/25/2023 1:30 PM		5/24/2023 1:15 PM		5/24/2023 2:10 PM		5/24/2023 2:30 PM			
Lab ID	1884825		1884826		1884827		1884828			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.115 [0.113]	0.001	0.097	0.001	0.062	0.001	0.168	0.001	mg/L	~
Dissolved Antimony	<0.0005 [<0.0005]	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Arsenic	<0.001 [<0.001]	0.001	0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Barium	0.004 [0.005]	0.001	0.004	0.001	0.003	0.001	0.004	0.001	mg/L	~
Dissolved Beryllium	<0.0005 [<0.0005]	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Bismuth	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Boron	0.002 [0.002]	0.002	0.002	0.002	<0.002	0.002	<0.002	0.002	mg/L	~
Dissolved Cadmium	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Calcium	9.15 [9.07]	0.05	8.62	0.05	3.78	0.05	4.92	0.05	mg/L	~
Dissolved Cerium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Chromium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500390

Sample Description	NDR.S - 04b		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	5/25/2023 1:30 PM		5/24/2023 1:15 PM		5/24/2023 2:10 PM		5/24/2023 2:30 PM			
Lab ID	1884825		1884826		1884827		1884828			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Cobalt	<0.0001 [0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	0.0001	0.0001	mg/L	~
Dissolved Copper	0.003 [0.003]	0.001	<0.001	0.001	0.002	0.001	0.003	0.001	mg/L	~
Dissolved Europium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.29 [0.29]	0.02	0.27	0.02	0.18	0.02	0.30	0.02	mg/L	~
Dissolved Lanthanum	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	0.0001 [0.0002]	0.0001	0.0001	0.0001	0.0006	0.0001	0.0003	0.0001	mg/L	~
Dissolved Lithium	<0.005 [<0.005]	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	mg/L	~
Dissolved Magnesium	2.340 [2.300]	0.004	2.300	0.004	0.711	0.004	0.947	0.004	mg/L	~
Dissolved Manganese	0.027 [0.026]	0.001	0.024	0.001	0.024	0.001	0.019	0.001	mg/L	~
Dissolved Mercury	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	<0.001 [<0.001]	0.001	0.003	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Nickel	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Niobium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	0.05 [<0.05]	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.2 [0.2]	0.1	0.2	0.1	0.1	0.1	0.2	0.1	mg/L	~
Dissolved Rhodium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 500390

Sample Description	NDR.S - 04b		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	5/25/2023 1:30 PM		5/24/2023 1:15 PM		5/24/2023 2:10 PM		5/24/2023 2:30 PM			
Lab ID	1884825		1884826		1884827		1884828			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Rubidium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Scandium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Selenium	<0.0005 [<0.0005]	0.0005	0.0023	0.0005	0.0005	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Silicon	<0.6 [<0.6]	0.6	<0.6	0.6	<0.6	0.6	<0.6	0.6	mg/L	~
Dissolved Silver	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Sodium	2.9 [2.9]	0.1	2.1	0.1	4.6	0.1	2	1	mg/L	~
Dissolved Strontium	0.015 [0.015]	0.001	0.014	0.001	0.007	0.001	0.010	0.001	mg/L	~
Dissolved Sulfur	<0.8 [<0.8]	0.8	<0.8	0.8	<0.8	0.8	<0.8	0.8	mg/L	~
Dissolved Tellurium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Thallium	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Thorium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Tin	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Titanium	0.002 [0.002]	0.001	0.002	0.001	<0.001	0.001	0.004	0.001	mg/L	~
Dissolved Tungsten	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Uranium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Vanadium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Yttrium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500390

Sample Description	NDR.S - 04b		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	5/25/2023 1:30 PM		5/24/2023 1:15 PM		5/24/2023 2:10 PM		5/24/2023 2:30 PM			
Lab ID	1884825		1884826		1884827		1884828			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Zinc	0.005 [0.006]	0.001	0.005	0.001	0.011	0.001	0.009	0.001	mg/L	~
Dissolved Zirconium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

Sample Description	MATR - 01		MATR - 02		PC - 01		WBR - S - Ref			
Sample Date	5/25/2023 11:30 AM		5/25/2023 11:55 AM		5/23/2023 1:35 PM		5/23/2023 1:50 PM			
Lab ID	1884829		1884830		1884831		1884832			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.054	0.001	0.056	0.001	0.213	0.001	0.192	0.001	mg/L	~
Dissolved Antimony	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Arsenic	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Barium	0.005	0.001	0.005	0.001	0.005	0.001	0.004	0.001	mg/L	~
Dissolved Beryllium	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Bismuth	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Boron	0.004	0.002	0.004	0.002	0.002	0.002	0.002	0.002	mg/L	~
Dissolved Cadmium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Calcium	11.10	0.05	11.00	0.05	7.94	0.05	6.85	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Chromium	<0.001	0.001	<0.001	0.001	0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cobalt	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Copper	0.002	0.001	0.001	0.001	0.002	0.001	0.002	0.001	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500390

Sample Description	MATR - 01		MATR - 02		PC - 01		WBR - S - Ref			
Sample Date	5/25/2023 11:30 AM		5/25/2023 11:55 AM		5/23/2023 1:35 PM		5/23/2023 1:50 PM			
Lab ID	1884829		1884830		1884831		1884832			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.17	0.02	0.18	0.02	0.36	0.02	0.33	0.02	mg/L	~
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	<0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0002	0.0001	mg/L	~
Dissolved Lithium	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	mg/L	~
Dissolved Magnesium	2.550	0.004	2.520	0.004	1.830	0.004	1.550	0.004	mg/L	~
Dissolved Manganese	0.006	0.001	0.006	0.001	0.022	0.001	0.018	0.001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Nickel	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.4	0.1	0.4	0.1	0.2	0.1	0.2	0.1	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Scandium	0.001	0.001	0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Selenium	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Silicon	2.8	0.6	2.7	0.6	0.6	0.6	<0.6	0.6	mg/L	~
Dissolved Silver	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Sodium	1.6	0.1	1.6	0.1	0.7	0.1	0.7	0.1	mg/L	~
Dissolved Strontium	0.017	0.001	0.017	0.001	0.015	0.001	0.013	0.001	mg/L	~
Dissolved Sulfur	<0.8	0.8	<0.8	0.8	<0.8	0.8	<0.8	0.8	mg/L	~
Dissolved Tellurium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Thallium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 500390

Sample Description	MATR - 01		MATR - 02		PC - 01		WBR - S - Ref			
Sample Date	5/25/2023 11:30 AM		5/25/2023 11:55 AM		5/23/2023 1:35 PM		5/23/2023 1:50 PM			
Lab ID	1884829		1884830		1884831		1884832			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Thorium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Tin	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Titanium	0.002	0.001	0.002	0.001	0.004	0.001	0.004	0.001	mg/L	~
Dissolved Tungsten	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Uranium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Vanadium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.003	0.001	0.003	0.001	0.007	0.001	0.006	0.001	mg/L	~
Dissolved Zirconium	<0.001	0.001	<0.001	0.001	<0.001	0.001	0.001	0.001	mg/L	~

Sample Description	WBR - S - 04		WBR - S - 06		WBR - P - 03		WBR - P - 04			
Sample Date	5/23/2023 11:15 AM		5/23/2023 12:40 PM		5/23/2023 11:40 AM		5/23/2023 12:10 PM			
Lab ID	1884833		1884834		1884835		1884836			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.172	0.001	0.179	0.001	0.112	0.001	0.073	0.001	mg/L	~
Dissolved Antimony	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Arsenic	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Barium	0.004	0.001	0.004	0.001	0.003	0.001	0.003	0.001	mg/L	~
Dissolved Beryllium	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Bismuth	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Boron	0.002	0.002	0.002	0.002	<0.002	0.002	<0.002	0.002	mg/L	~
Dissolved Cadmium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Calcium	6.34	0.05	6.91	0.05	3.87	0.05	2.73	0.05	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 500390

Sample Description	WBR - S - 04		WBR - S - 06		WBR - P - 03		WBR - P - 04			
Sample Date	5/23/2023 11:15 AM		5/23/2023 12:40 PM		5/23/2023 11:40 AM		5/23/2023 12:10 PM			
Lab ID	1884833		1884834		1884835		1884836			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Chromium	<0.001	0.001	<0.001	0.001	0.003	0.001	<0.001	0.001	mg/L	~
Dissolved Cobalt	0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Copper	0.002	0.001	0.003	0.001	0.003	0.001	0.012	0.001	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.32	0.02	0.33	0.02	0.24	0.02	0.19	0.02	mg/L	~
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	0.0002	0.0001	0.0003	0.0001	0.0003	0.0001	0.0005	0.0001	mg/L	~
Dissolved Lithium	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	mg/L	~
Dissolved Magnesium	1.480	0.004	1.630	0.004	0.874	0.004	0.610	0.004	mg/L	~
Dissolved Manganese	0.027	0.001	0.022	0.001	0.021	0.001	0.024	0.001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Nickel	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.1	0.1	0.2	0.1	<0.1	0.1	0.2	0.1	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Scandium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Selenium	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Silicon	<0.6	0.6	0.6	0.6	<0.6	0.6	<0.6	0.6	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 500390

Sample Description	WBR - S - 04		WBR - S - 06		WBR - P - 03		WBR - P - 04			
Sample Date	5/23/2023 11:15 AM		5/23/2023 12:40 PM		5/23/2023 11:40 AM		5/23/2023 12:10 PM			
Lab ID	1884833		1884834		1884835		1884836			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Silver	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Sodium	0.6	0.1	0.7	0.1	0.4	0.1	0.4	0.1	mg/L	~
Dissolved Strontium	0.012	0.001	0.013	0.001	0.007	0.001	0.005	0.001	mg/L	~
Dissolved Sulfur	<0.8	0.8	<0.8	0.8	<0.8	0.8	<0.8	0.8	mg/L	~
Dissolved Tellurium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Thallium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Thorium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Tin	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Titanium	0.003	0.001	0.004	0.001	0.002	0.001	<0.001	0.001	mg/L	~
Dissolved Tungsten	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Uranium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Vanadium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.004	0.001	0.005	0.001	0.006	0.001	0.005	0.001	mg/L	~
Dissolved Zirconium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

Sample Description	BS - SW - 01		SWDup1		UWC - 1			
Sample Date	5/25/2023 8:10 AM		5/24/2023		5/25/2023 10:10 AM			
Lab ID	1884837		1884838		1884839			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.066	0.001	0.105	0.001	0.058	0.001	mg/L	~
Dissolved Antimony	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Arsenic	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 500390

Sample Description	BS - SW - 01		SWDup1		UWC - 1			
Sample Date	5/25/2023 8:10 AM		5/24/2023		5/25/2023 10:10 AM			
Lab ID	1884837		1884838		1884839			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Barium	0.002	0.001	0.004	0.001	0.002	0.001	mg/L	~
Dissolved Beryllium	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Bismuth	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Boron	<0.002	0.002	0.002	0.002	<0.002	0.002	mg/L	~
Dissolved Cadmium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Calcium	2.84	0.05	8.67	0.05	2.76	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Chromium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cobalt	0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Copper	0.002	0.001	0.001	0.001	0.001	0.001	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.22	0.02	0.27	0.02	0.17	0.02	mg/L	~
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	0.0004	0.0001	0.0001	0.0001	0.0004	0.0001	mg/L	~
Dissolved Lithium	<0.005	0.005	<0.005	0.005	<0.005	0.005	mg/L	~
Dissolved Magnesium	0.722	0.004	2.320	0.004	0.742	0.004	mg/L	~
Dissolved Manganese	0.029	0.001	0.024	0.001	0.027	0.001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Nickel	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 500390

Sample Description	BS - SW - 01		SWDup1		UWC - 1			
Sample Date	5/25/2023 8:10 AM		5/24/2023		5/25/2023 10:10 AM			
Lab ID	1884837		1884838		1884839			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Potassium	<0.1	0.1	0.2	0.1	<0.1	0.1	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Scandium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Selenium	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Silicon	<0.6	0.6	<0.6	0.6	<0.6	0.6	mg/L	~
Dissolved Silver	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Sodium	0.3	0.1	2.1	0.1	0.3	0.1	mg/L	~
Dissolved Strontium	0.005	0.001	0.014	0.001	0.005	0.001	mg/L	~
Dissolved Sulfur	<0.8	0.8	<0.8	0.8	<0.8	0.8	mg/L	~
Dissolved Tellurium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Thallium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Thorium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Tin	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Titanium	0.001	0.001	0.003	0.001	<0.001	0.001	mg/L	~
Dissolved Tungsten	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Uranium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Vanadium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.008	0.001	0.004	0.001	0.009	0.001	mg/L	~
Dissolved Zirconium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500390

Sample Description	NDR.S - 04b		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	5/25/2023 1:30 PM		5/24/2023 1:15 PM		5/24/2023 2:10 PM		5/24/2023 2:30 PM			
Lab ID	1884825		1884826		1884827		1884828			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.253 [0.250]	0.001	0.308	0.001	0.081	0.001	0.331	0.001	mg/L	0.075
Total Antimony	<0.0005 [<0.0005]	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	0.02
Total Arsenic	<0.001 [<0.001]	0.001	0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.005
Total Barium	0.005 [0.005]	0.001	0.005	0.001	0.003	0.001	0.004	0.001	mg/L	~
Total Beryllium	<0.0005 [<0.0005]	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	0.011
Total Bismuth	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Boron	0.002 [0.002]	0.002	0.002	0.002	<0.002	0.002	<0.002	0.002	mg/L	0.2
Total Cadmium	<0.00002 [0.00002]	0.00002	0.00002	0.00002	0.00003	0.00002	0.00005	0.00002	mg/L	0.0001
Total Calcium	8.97 [9.18]	0.05	8.63	0.05	3.78	0.05	4.92	0.05	mg/L	~
Total Cerium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Cesium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Chromium	<0.001 [<0.001]	0.001	0.001	0.001	<0.001	0.001	0.001	0.001	mg/L	~
Total Cobalt	0.0001 [0.0001]	0.0001	0.0002	0.0001	<0.0001	0.0001	0.0002	0.0001	mg/L	0.0009
Total Copper	<0.001 [0.003]	0.001	0.052	0.001	0.002	0.001	0.027	0.001	mg/L	0.001
Total Europium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.40 [0.40]	0.02	0.46	0.02	0.19	0.02	0.43	0.02	mg/L	0.3

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500390

Sample Description	NDR.S - 04b		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	5/25/2023 1:30 PM		5/24/2023 1:15 PM		5/24/2023 2:10 PM		5/24/2023 2:30 PM			
Lab ID	1884825		1884826		1884827		1884828			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Lanthanum	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.0002 [0.0002]	0.0001	0.0002	0.0001	0.0006	0.0001	0.0004	0.0001	mg/L	0.001
Total Lithium	<0.005 [<0.005]	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	mg/L	~
Total Magnesium	2.340 [2.390]	0.004	2.380	0.004	0.699	0.004	0.990	0.004	mg/L	~
Total Manganese	0.030 [0.030]	0.001	0.036	0.001	0.024	0.001	0.021	0.001	mg/L	~
Total Molybdenum	<0.001 [<0.001]	0.001	0.002	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.04
Total Nickel	0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.025
Total Niobium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.2 [0.2]	0.1	0.2	0.1	<0.1	0.1	0.2	0.1	mg/L	~
Total Rhodium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Scandium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Selenium	<0.0005 [<0.0005]	0.0005	0.0020	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	0.1
Total Silicon	<0.6 [<0.6]	0.6	0.6	0.6	<0.6	0.6	0.7	0.6	mg/L	~
Total Silver	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0001
Total Sodium	2.9 [2.9]	0.1	2.1	0.1	4.4	0.1	2.1	0.1	mg/L	~
Total Strontium	0.015 [0.015]	0.001	0.015	0.001	0.007	0.001	0.011	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500390

Sample Description	NDR.S - 04b		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	5/25/2023 1:30 PM		5/24/2023 1:15 PM		5/24/2023 2:10 PM		5/24/2023 2:30 PM			
Lab ID	1884825		1884826		1884827		1884828			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Sulphur	<0.8 [<0.8]	0.8	<0.8	0.8	<0.8	0.8	<0.8	0.8	mg/L	~
Total Tellurium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Thallium	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0003
Total Thorium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Tin	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Titanium	0.007 [0.007]	0.001	0.010	0.001	0.002	0.001	0.010	0.001	mg/L	~
Total Tungsten	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.03
Total Uranium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.005
Total Vanadium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.006
Total Yttrium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.008 [0.005]	0.001	0.006	0.001	0.007	0.001	0.007	0.001	mg/L	0.02
Total Zirconium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	0.001	0.001	mg/L	0.004

Sample Description	MATR - 01		MATR - 02		PC - 01		WBR - S - Ref			
Sample Date	5/25/2023 11:30 AM		5/25/2023 11:55 AM		5/23/2023 1:35 PM		5/23/2023 1:50 PM			
Lab ID	1884829		1884830		1884831		1884832			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.197	0.001	0.254	0.001	0.493	0.001	0.616	0.001	mg/L	0.075
Total Antimony	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	0.02

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500390

Sample Description	MATR - 01		MATR - 02		PC - 01		WBR - S - Ref			
Sample Date	5/25/2023 11:30 AM		5/25/2023 11:55 AM		5/23/2023 1:35 PM		5/23/2023 1:50 PM			
Lab ID	1884829		1884830		1884831		1884832			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Arsenic	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.005
Total Barium	0.005	0.001	0.006	0.001	0.008	0.001	0.007	0.001	mg/L	~
Total Beryllium	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	0.011
Total Bismuth	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Boron	0.004	0.002	0.004	0.002	<0.002	0.002	0.002	0.002	mg/L	0.2
Total Cadmium	<0.00002	0.00002	0.00002	0.00002	0.00008	0.00002	0.00004	0.00002	mg/L	0.0001
Total Calcium	10.70	0.05	11.00	0.05	8.51	0.05	7.05	0.05	mg/L	~
Total Cerium	<0.001	0.001	<0.001	0.001	0.001	0.001	0.001	0.001	mg/L	~
Total Cesium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Chromium	<0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	mg/L	~
Total Cobalt	0.0001	0.0001	0.0002	0.0001	0.0003	0.0001	0.0003	0.0001	mg/L	0.0009
Total Copper	<0.001	0.001	0.001	0.001	0.002	0.001	0.002	0.001	mg/L	0.001
Total Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.33	0.02	0.38	0.02	0.6	0.2	0.7	0.2	mg/L	0.3
Total Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.0001	0.0001	0.0002	0.0001	0.0006	0.0001	0.0004	0.0001	mg/L	0.001
Total Lithium	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	mg/L	~
Total Magnesium	2.490	0.004	2.580	0.004	2.030	0.004	1.750	0.004	mg/L	~
Total Manganese	0.016	0.001	0.016	0.001	0.083	0.001	0.029	0.001	mg/L	~
Total Mercury			<0.0001	0.0001					mg/L	0.0002
Total Molybdenum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.04
Total Nickel	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500390

Sample Description	MATR - 01		MATR - 02		PC - 01		WBR - S - Ref			
Sample Date	5/25/2023 11:30 AM		5/25/2023 11:55 AM		5/23/2023 1:35 PM		5/23/2023 1:50 PM			
Lab ID	1884829		1884830		1884831		1884832			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Potassium	0.4	0.1	0.4	0.1	0.2	0.1	0.3	0.1	mg/L	~
Total Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	0.001	0.001	0.001	0.001	<0.001	0.001	0.001	0.001	mg/L	~
Total Scandium	0.001	0.001	0.002	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Selenium	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	0.1
Total Silicon	2.6	0.6	3.1	0.6	1.1	0.6	1.1	0.6	mg/L	~
Total Silver	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0001
Total Sodium	1.5	0.1	1.6	0.1	0.7	0.1	0.7	0.1	mg/L	~
Total Strontium	0.017	0.001	0.017	0.001	0.017	0.001	0.014	0.001	mg/L	~
Total Sulphur	<0.8	0.8	<0.8	0.8	<0.8	0.8	<0.8	0.8	mg/L	~
Total Tellurium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Thallium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0003
Total Thorium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Tin	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Titanium	0.007	0.001	0.009	0.001	0.012	0.001	0.021	0.001	mg/L	~
Total Tungsten	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.03
Total Uranium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.005
Total Vanadium	<0.001	0.001	<0.001	0.001	0.001	0.001	0.001	0.001	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.003	0.001	0.004	0.001	0.007	0.001	0.005	0.001	mg/L	0.02
Total Zirconium	<0.001	0.001	<0.001	0.001	0.001	0.001	0.002	0.001	mg/L	0.004

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500390

Sample Description	WBR - S - 04		WBR - S - 06		WBR - P - 03		WBR - P - 04			
Sample Date	5/23/2023 11:15 AM		5/23/2023 12:40 PM		5/23/2023 11:40 AM		5/23/2023 12:10 PM			
Lab ID	1884833		1884834		1884835		1884836			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.425	0.001	0.410	0.001	0.123	0.001	0.079	0.001	mg/L	0.075
Total Antimony	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	0.02
Total Arsenic	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.005
Total Barium	0.005	0.001	0.005	0.001	0.003	0.001	0.004	0.001	mg/L	~
Total Beryllium	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	0.011
Total Bismuth	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Boron	0.002	0.002	0.002	0.002	<0.002	0.002	<0.002	0.002	mg/L	0.2
Total Cadmium	0.00004	0.00002	0.00004	0.00002	0.00003	0.00002	0.00002	0.00002	mg/L	0.0001
Total Calcium	6.36	0.05	6.89	0.05	3.85	0.05	2.79	0.05	mg/L	~
Total Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Cesium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Chromium	0.001	0.001	0.001	0.001	<0.001	0.001	0.002	0.001	mg/L	~
Total Cobalt	0.0002	0.0001	0.0002	0.0001	0.0001	0.0001	<0.0001	0.0001	mg/L	0.0009
Total Copper	0.007	0.001	0.002	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.001
Total Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.55	0.02	0.53	0.02	0.26	0.02	0.20	0.02	mg/L	0.3
Total Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.0006	0.0001	0.0003	0.0001	0.0003	0.0001	0.0005	0.0001	mg/L	0.001
Total Lithium	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	mg/L	~
Total Magnesium	1.620	0.004	1.690	0.004	0.871	0.004	0.624	0.004	mg/L	~
Total Manganese	0.035	0.001	0.026	0.001	0.023	0.001	0.025	0.001	mg/L	~
Total Mercury					<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Total Molybdenum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.04

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500390

Sample Description	WBR - S - 04		WBR - S - 06		WBR - P - 03		WBR - P - 04			
Sample Date	5/23/2023 11:15 AM		5/23/2023 12:40 PM		5/23/2023 11:40 AM		5/23/2023 12:10 PM			
Lab ID	1884833		1884834		1884835		1884836			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Nickel	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.2	0.1	0.2	0.1	<0.1	0.1	0.2	0.1	mg/L	~
Total Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Scandium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Selenium	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	0.1
Total Silicon	0.7	0.6	0.9	0.6	<0.6	0.6	<0.6	0.6	mg/L	~
Total Silver	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0001
Total Sodium	0.6	0.1	0.7	0.1	0.4	0.1	0.4	0.1	mg/L	~
Total Strontium	0.013	0.001	0.014	0.001	0.007	0.001	0.006	0.001	mg/L	~
Total Sulphur	<0.8	0.8	<0.8	0.8	<0.8	0.8	<0.8	0.8	mg/L	~
Total Tellurium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Thallium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0003
Total Thorium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Tin	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Titanium	0.013	0.001	0.012	0.001	0.002	0.001	0.001	0.001	mg/L	~
Total Tungsten	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.03
Total Uranium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.005
Total Vanadium	0.001	0.001	0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.008	0.001	0.005	0.001	0.006	0.001	0.004	0.001	mg/L	0.02
Total Zirconium	0.001	0.001	0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.004

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500390

Sample Description	BS - SW - 01		SWDup1		UWC - 1			
Sample Date	5/25/2023 8:10 AM		5/24/2023		5/25/2023 10:10 AM			
Lab ID	1884837		1884838		1884839			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.099	0.001	0.307	0.001	0.074	0.001	mg/L	0.075
Total Antimony	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	0.02
Total Arsenic	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.005
Total Barium	0.002	0.001	0.005	0.001	0.003	0.001	mg/L	~
Total Beryllium	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	0.011
Total Bismuth	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Boron	<0.002	0.002	<0.002	0.002	<0.002	0.002	mg/L	0.2
Total Cadmium	0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	mg/L	0.0001
Total Calcium	3.11	0.05	8.55	0.05	2.88	0.05	mg/L	~
Total Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Cesium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Chromium	<0.001	0.001	0.001	0.001	<0.001	0.001	mg/L	~
Total Cobalt	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	mg/L	0.0009
Total Copper	<0.001	0.001	0.001	0.001	0.001	0.001	mg/L	0.001
Total Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.26	0.02	0.46	0.02	0.19	0.02	mg/L	0.3
Total Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.0004	0.0001	0.0002	0.0001	0.0004	0.0001	mg/L	0.001
Total Lithium	<0.005	0.005	<0.005	0.005	<0.005	0.005	mg/L	~
Total Magnesium	0.775	0.004	2.380	0.004	0.776	0.004	mg/L	~
Total Manganese	0.032	0.001	0.030	0.001	0.029	0.001	mg/L	~
Total Molybdenum	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.04
Total Nickel	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.025

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500390

Sample Description	BS - SW - 01		SWDup1		UWC - 1			
Sample Date	5/25/2023 8:10 AM		5/24/2023		5/25/2023 10:10 AM			
Lab ID	1884837		1884838		1884839			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	<0.1	0.1	0.2	0.1	<0.1	0.1	mg/L	~
Total Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Scandium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Selenium	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	0.1
Total Silicon	<0.6	0.6	0.6	0.6	<0.6	0.6	mg/L	~
Total Silver	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0001
Total Sodium	0.3	0.1	2.1	0.1	0.3	0.1	mg/L	~
Total Strontium	0.006	0.001	0.015	0.001	0.005	0.001	mg/L	~
Total Sulphur	<0.8	0.8	<0.8	0.8	<0.8	0.8	mg/L	~
Total Tellurium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Thallium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0003
Total Thorium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Tin	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Titanium	0.003	0.001	0.010	0.001	0.001	0.001	mg/L	~
Total Tungsten	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.03
Total Uranium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.005
Total Vanadium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.007	0.001	0.004	0.001	0.007	0.001	mg/L	0.02
Total Zirconium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.004

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500390

Sample Description	NDR.S - 04b		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	5/25/2023 1:30 PM		5/24/2023 1:15 PM		5/24/2023 2:10 PM		5/24/2023 2:30 PM			
Lab ID	1884825		1884826		1884827		1884828			
MethylMercury	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.13	0.02	0.14	0.02	0.16	0.02	0.13	0.02	ng/L	~

Sample Description	MATR - 01		PC - 01		WBR - S - Ref		WBR - S - 04			
Sample Date	5/25/2023 11:30 AM		5/23/2023 1:35 PM		5/23/2023 1:50 PM		5/23/2023 11:15 AM			
Lab ID	1884829		1884831		1884832		1884833			
MethylMercury	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.13	0.02	0.15	0.02	0.16	0.02	0.15	0.02	ng/L	~

Sample Description	WBR - S - 06		BS - SW - 01		SWDup1		UWC - 1			
Sample Date	5/23/2023 12:40 PM		5/25/2023 8:10 AM		5/24/2023		5/25/2023 10:10 AM			
Lab ID	1884834		1884837		1884838		1884839			
MethylMercury	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.15	0.02	0.15	0.02	0.14	0.02	0.14 [0.14]	0.02	ng/L	~

Sample Description	NDR.S - 04b		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	5/25/2023 1:30 PM		5/24/2023 1:15 PM		5/24/2023 2:10 PM		5/24/2023 2:30 PM			
Lab ID	1884825		1884826		1884827		1884828			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	85	10	90	10	80	10	75	10	mg/L	~
Total Suspended Solids	3.00	0.67	3.00	0.67	1.30	0.67	2.00	0.67	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500390

Sample Description	MATR - 01		MATR - 02		PC - 01		WBR - S - Ref			
Sample Date	5/25/2023 11:30 AM		5/25/2023 11:55 AM		5/23/2023 1:35 PM		5/23/2023 1:50 PM			
Lab ID	1884829		1884830		1884831		1884832			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	65	10	75 [80]	10	95	10	85	10	mg/L	~
Total Suspended Solids	4.70	0.67	4.5 [4]	1	31.30	0.67	9.00	0.67	mg/L	~

Sample Description	WBR - S - 04		WBR - S - 06		WBR - P - 03		WBR - P - 04			
Sample Date	5/23/2023 11:15 AM		5/23/2023 12:40 PM		5/23/2023 11:40 AM		5/23/2023 12:10 PM			
Lab ID	1884833		1884834		1884835		1884836			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	80	10	75	10	70	10	70	10	mg/L	~
Total Suspended Solids	8.33	0.67	4.70	0.67	<0.67	0.67	3.00	0.67	mg/L	~

Sample Description	BS - SW - 01		SWDup1		UWC - 1			
Sample Date	5/25/2023 8:10 AM		5/24/2023		5/25/2023 10:10 AM			
Lab ID	1884837		1884838		1884839			
Solids	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	75	10	85	10	50	10	mg/L	~
Total Suspended Solids	2.00	0.67	3.70	0.67	<0.67	0.67	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500390

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	500662
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	Adam Gauthier & David Duciaume
Date Order Received:	5/29/2023	Analysis Started:	5/30/2023
Arrival Temperature:	23 °C	Analysis Completed:	6/13/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
MARLK-Top	1885907	Water	Grab		5/29/2023	1:40 PM
MARLK-Bottom	1885908	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	5/29/2023	1:56 PM
GERLK-Top	1885909	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	5/29/2023	1:10 PM
GERLK-Bottom	1885910	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	5/29/2023	1:25 PM
SUTHLK-Top	1885911	Water	Grab		5/29/2023	12:10 PM
SUTHLK-Bottom	1885912	Water	Grab		5/29/2023	12:20 PM
JCRK-03	1885913	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	5/29/2023	10:55 AM
NDR-S-06	1885914	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	5/29/2023	3:15 PM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179

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Canada Nickel Company Inc.

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Method	Lab	Description	Reference
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Kirkland Lake	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (0.2um) (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500662

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500662

WORK ORDER RESULTS

Sample Description	MARLK - Top		MARLK - Bottom		GERLK - Top		GERLK - Bottom			
Sample Date	5/29/2023 1:40 PM		5/29/2023 1:56 PM		5/29/2023 1:10 PM		5/29/2023 1:25 PM			
Lab ID	1885907		1885908		1885909		1885910			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	0.2	0.2	0.2	0.2	0.5	0.2	1.1	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	0.11	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	<0.5	0.5	0.8	0.5	1.6	0.5	1.7	0.5	mg/L	~

Sample Description	SUTHLK - Top		SUTHLK - Bottom		JCRK - 03		NDR - S - 06			
Sample Date	5/29/2023 12:10 PM		5/29/2023 12:20 PM		5/29/2023 10:55 AM		5/29/2023 3:15 PM			
Lab ID	1885911		1885912		1885913		1885914			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	0.3	0.2	0.5	0.2	3.0	0.2	2.1	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	0.7	0.1	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	2.4	0.5	2.5	0.5	0.7	0.5	<0.5	0.5	mg/L	~

Sample Description	MARLK - Top		MARLK - Bottom		GERLK - Top		GERLK - Bottom			
Sample Date	5/29/2023 1:40 PM		5/29/2023 1:56 PM		5/29/2023 1:10 PM		5/29/2023 1:25 PM			
Lab ID	1885907		1885908		1885909		1885910			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	7.59	N/A	7.1	N/A	8.05	N/A	7.28	N/A	pH	~

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Canada Nickel Company Inc.

Work Order Number: 500662

Sample Description	MARLK - Top		MARLK - Bottom		GERLK - Top		GERLK - Bottom			
Sample Date	5/29/2023 1:40 PM		5/29/2023 1:56 PM		5/29/2023 1:10 PM		5/29/2023 1:25 PM			
Lab ID	1885907		1885908		1885909		1885910			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field Temp	21.87	N/A	12.2	N/A	20.63	N/A	11.8	N/A	°C	~

Sample Description	SUTHLK - Top		SUTHLK - Bottom		JCRK - 03		NDR - S - 06			
Sample Date	5/29/2023 12:10 PM		5/29/2023 12:20 PM		5/29/2023 10:55 AM		5/29/2023 3:15 PM			
Lab ID	1885911		1885912		1885913		1885914			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	7.94	N/A	8.02	N/A	7.83	N/A	7.25	N/A	pH	~
Field Temp	20.14	N/A	15.9	N/A	16.56	N/A	21.18	N/A	°C	~

Sample Description	MARLK - Top		MARLK - Bottom		GERLK - Top		GERLK - Bottom			
Sample Date	5/29/2023 1:40 PM		5/29/2023 1:56 PM		5/29/2023 1:10 PM		5/29/2023 1:25 PM			
Lab ID	1885907		1885908		1885909		1885910			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	8	5	9	5	10	5	27	5	mg/L as CaCO3	~
Ammonia (as N)	0.026 [0.026]	0.005	0.028	0.005	0.023	0.005	0.356	0.005	mg/L	~
Conductivity	77	1	111	1	173	1	477	1	µS/cm	~
Dissolved Organic Carbon	19.5	0.4	17.8	0.4	17.5	0.4	6.6	0.4	mg/L	~
Free Cyanide	0.004	0.001	0.002	0.001					mg/L	0.005
M-Alkalinity (pH 4.5)	41	2	60	2	96	2	268	2	mg/L as CaCO3	~
pH	7.17	N/A	7.17	N/A	7.64	N/A	7.56	N/A	pH	~
Strong Acid Dissociable Cyanide	0.004	0.002	0.004	0.002					mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500662

Sample Description	MARLK - Top		MARLK - Bottom		GERLK - Top		GERLK - Bottom			
Sample Date	5/29/2023 1:40 PM		5/29/2023 1:56 PM		5/29/2023 1:10 PM		5/29/2023 1:25 PM			
Lab ID	1885907		1885908		1885909		1885910			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Hardness (as CaCO3) (Calc.)	39.7	0.1	80.4	0.1	86.6	0.1	233.0	0.1	mg/L	~
Total Phosphorus (as P)	<0.002	0.002	0.012	0.002	0.008	0.002	0.233	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.016	0.001	0.002	0.001					mg/L	~

Sample Description	SUTHLK - Top		SUTHLK - Bottom		JCRK - 03		NDR - S - 06			
Sample Date	5/29/2023 12:10 PM		5/29/2023 12:20 PM		5/29/2023 10:55 AM		5/29/2023 3:15 PM			
Lab ID	1885911		1885912		1885913		1885914			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	10	5	14	5	8	5	10	5	mg/L as CaCO3	~
Ammonia (as N)	0.009	0.005	0.013	0.005	0.046	0.005	0.045	0.005	mg/L	~
Conductivity	184	1	223	1	94	1	73	1	µS/cm	~
Dissolved Organic Carbon	7.9	0.4	8.7	0.4	23.6	0.8	26.4	0.8	mg/L	~
Free Cyanide	0.002	0.001	0.003	0.001	0.002	0.001	0.002	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	101	2	123	2	43	2	33	2	mg/L as CaCO3	~
pH	7.58	N/A	7.84	N/A	7.05	N/A	6.89	N/A	pH	~
Strong Acid Dissociable Cyanide	<0.002	0.002	<0.002	0.002	0.006	0.002	<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	89.7	0.1	100.0	0.1	45.2	0.1	36.6	0.1	mg/L	~
Total Phosphorus (as P)	<0.002	0.002	0.005	0.002	0.015	0.002	0.010	0.002	mg/L	~
Weak Acid Dissociable Cyanide	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500662

Sample Description	MARLK - Top		MARLK - Bottom		SUTHLK - Top		SUTHLK - Bottom			
Sample Date	5/29/2023 1:40 PM		5/29/2023 1:56 PM		5/29/2023 12:10 PM		5/29/2023 12:20 PM			
Lab ID	1885907		1885908		1885911		1885912			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	3.40	0.01	2.88	0.01	1.09	0.01	2.31	0.01	ng/L	200

Sample Description	JCRK - 03		NDR - S - 06			
Sample Date	5/29/2023 10:55 AM		5/29/2023 3:15 PM			
Lab ID	1885913		1885914			
Mercury (Trace)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	4.95	0.01	5.72	0.01	ng/L	200

Sample Description	MARLK - Top		MARLK - Bottom		SUTHLK - Top		SUTHLK - Bottom			
Sample Date	5/29/2023 1:40 PM		5/29/2023 1:56 PM		5/29/2023 12:10 PM		5/29/2023 12:20 PM			
Lab ID	1885907		1885908		1885911		1885912			
Mercury by CV	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	ug/L	0.2

Sample Description	JCRK - 03		NDR - S - 06			
Sample Date	5/29/2023 10:55 AM		5/29/2023 3:15 PM			
Lab ID	1885913		1885914			
Mercury by CV	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01	0.01	ug/L	0.2

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500662

Sample Description	MARLK - Top		MARLK - Bottom		GERLK - Top		GERLK - Bottom			
Sample Date	5/29/2023 1:40 PM		5/29/2023 1:56 PM		5/29/2023 1:10 PM		5/29/2023 1:25 PM			
Lab ID	1885907		1885908		1885909		1885910			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.033 [0.033]	0.001	0.037	0.001	0.026	0.001	0.003	0.001	mg/L	~

Sample Description	SUTHLK - Top		SUTHLK - Bottom		JCRK - 03		NDR - S - 06			
Sample Date	5/29/2023 12:10 PM		5/29/2023 12:20 PM		5/29/2023 10:55 AM		5/29/2023 3:15 PM			
Lab ID	1885911		1885912		1885913		1885914			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.004	0.001	0.002	0.001	0.091	0.001	0.091	0.001	mg/L	~

Sample Description	MARLK - Top		MARLK - Bottom		GERLK - Top		GERLK - Bottom			
Sample Date	5/29/2023 1:40 PM		5/29/2023 1:56 PM		5/29/2023 1:10 PM		5/29/2023 1:25 PM			
Lab ID	1885907		1885908		1885909		1885910			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.039 [0.041]	0.001	0.037	0.001	0.033	0.001	0.017	0.001	mg/L	~
Dissolved Antimony	<0.0005 [<0.0005]	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Arsenic	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Barium	0.005 [0.005]	0.001	0.007	0.001	0.011	0.001	0.058	0.001	mg/L	~
Dissolved Beryllium	<0.0005 [<0.0005]	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Bismuth	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Boron	0.003 [0.004]	0.002	0.004	0.002	0.005	0.002	0.009	0.002	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500662

Sample Description	MARLK - Top		MARLK - Bottom		GERLK - Top		GERLK - Bottom			
Sample Date	5/29/2023 1:40 PM		5/29/2023 1:56 PM		5/29/2023 1:10 PM		5/29/2023 1:25 PM			
Lab ID	1885907		1885908		1885909		1885910			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Cadmium	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Calcium	11.40 [11.60]	0.05	14.70	0.05	25.0	0.5	68.8	0.5	mg/L	~
Dissolved Cerium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Chromium	<0.001 [<0.001]	0.001	0.001	0.001	<0.001	0.001	0.002	0.001	mg/L	~
Dissolved Cobalt	<0.0001 [<0.0001]	0.0001	0.0001	0.0001	0.0001	0.0001	0.0003	0.0001	mg/L	~
Dissolved Copper	0.001 [0.001]	0.001	0.001	0.001	0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Europium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	0.002	0.001	mg/L	~
Dissolved Iron	0.21 [0.22]	0.02	0.26	0.02	0.30	0.02	6.5	0.2	mg/L	~
Dissolved Lanthanum	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	<0.0001 [<0.0001]	0.0001	0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Lithium	<0.005 [<0.005]	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	mg/L	~
Dissolved Magnesium	2.750 [2.840]	0.004	3.570	0.004	5.770	0.004	15.600	0.004	mg/L	~
Dissolved Manganese	0.011 [0.012]	0.001	0.025	0.001	0.009	0.001	0.53	0.01	mg/L	~
Dissolved Mercury	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	<0.001 [<0.001]	0.001	0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500662

Sample Description	MARLK - Top		MARLK - Bottom		GERLK - Top		GERLK - Bottom			
Sample Date	5/29/2023 1:40 PM		5/29/2023 1:56 PM		5/29/2023 1:10 PM		5/29/2023 1:25 PM			
Lab ID	1885907		1885908		1885909		1885910			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Nickel	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Niobium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05 [<0.05]	0.05	<0.05	0.05	<0.05	0.05	0.44	0.05	mg/L	~
Dissolved Potassium	0.3 [0.3]	0.1	0.4	0.1	0.7	0.1	1.8	0.1	mg/L	~
Dissolved Rhodium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	<0.001 [<0.001]	0.001	<0.001	0.001	0.001	0.001	0.002	0.001	mg/L	~
Dissolved Scandium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	0.005	0.001	mg/L	~
Dissolved Selenium	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Silicon	<0.6 [<0.6]	0.6	1.3	0.6	1.3	0.6	7.3	0.6	mg/L	~
Dissolved Silver	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Sodium	0.8 [0.8]	0.1	1.1	0.1	1.9	0.1	5.3	0.1	mg/L	~
Dissolved Strontium	0.015 [0.015]	0.001	0.020	0.001	0.034	0.001	0.093	0.001	mg/L	~
Dissolved Sulfur	3.4 [4.5]	0.8	3.7	0.8	4.3	0.8	4.0	0.8	mg/L	~
Dissolved Tellurium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Thallium	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Thorium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Tin	<0.001 [<0.001]	0.001	0.011	0.001	0.002	0.001	0.002	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500662

Sample Description	MARLK - Top		MARLK - Bottom		GERLK - Top		GERLK - Bottom			
Sample Date	5/29/2023 1:40 PM		5/29/2023 1:56 PM		5/29/2023 1:10 PM		5/29/2023 1:25 PM			
Lab ID	1885907		1885908		1885909		1885910			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Titanium	0.001 [0.001]	0.001	0.001	0.001	0.001	0.001	0.005	0.001	mg/L	~
Dissolved Tungsten	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Uranium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Vanadium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Yttrium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.003 [0.003]	0.001	0.005	0.001	0.002	0.001	0.002	0.001	mg/L	~
Dissolved Zirconium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

Sample Description	SUTHLK - Top		SUTHLK - Bottom		JCRK - 03		NDR - S - 06			
Sample Date	5/29/2023 12:10 PM		5/29/2023 12:20 PM		5/29/2023 10:55 AM		5/29/2023 3:15 PM			
Lab ID	1885911		1885912		1885913		1885914			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.005	0.001	0.005	0.001	0.125	0.001	0.110	0.001	mg/L	~
Dissolved Antimony	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Arsenic	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Barium	0.008	0.001	0.009	0.001	0.007	0.001	0.005	0.001	mg/L	~
Dissolved Beryllium	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Bismuth	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Boron	0.004	0.002	0.005	0.002	0.004	0.002	0.004	0.002	mg/L	~
Dissolved Cadmium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500662

Sample Description	SUTHLK - Top		SUTHLK - Bottom		JCRK - 03		NDR - S - 06			
Sample Date	5/29/2023 12:10 PM		5/29/2023 12:20 PM		5/29/2023 10:55 AM		5/29/2023 3:15 PM			
Lab ID	1885911		1885912		1885913		1885914			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Calcium	27.1	0.5	28.0	0.5	13.00	0.05	10.10	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Chromium	<0.001	0.001	<0.001	0.001	<0.001	0.001	0.001	0.001	mg/L	~
Dissolved Cobalt	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	mg/L	~
Dissolved Copper	<0.001	0.001	<0.001	0.001	0.002	0.001	0.002	0.001	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.18	0.02	0.18	0.02	0.32	0.02	0.31	0.02	mg/L	~
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	<0.0001	0.0001	<0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	mg/L	~
Dissolved Lithium	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	mg/L	~
Dissolved Magnesium	5.920	0.004	6.370	0.004	2.890	0.004	2.450	0.004	mg/L	~
Dissolved Manganese	0.002	0.001	0.002	0.001	0.050	0.001	0.028	0.001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Nickel	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.7	0.1	0.8	0.1	0.4	0.1	0.2	0.1	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	0.001	0.001	0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Scandium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500662

Sample Description	SUTHLK - Top		SUTHLK - Bottom		JCRK - 03		NDR - S - 06			
Sample Date	5/29/2023 12:10 PM		5/29/2023 12:20 PM		5/29/2023 10:55 AM		5/29/2023 3:15 PM			
Lab ID	1885911		1885912		1885913		1885914			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Selenium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Silicon	1.3	0.6	1.4	0.6	1.0	0.6	<0.6	0.6	mg/L	~
Dissolved Silver	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Sodium	1.0	0.1	1.1	0.1	2.6	0.1	2.1	0.1	mg/L	~
Dissolved Strontium	0.025	0.001	0.027	0.001	0.020	0.001	0.014	0.001	mg/L	~
Dissolved Sulfur	3.9	0.8	4.0	0.8	3.2	0.8	4.0	0.8	mg/L	~
Dissolved Tellurium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Thallium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Thorium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Tin	0.002	0.001	0.022	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Titanium	<0.001	0.001	<0.001	0.001	0.004	0.001	0.002	0.001	mg/L	~
Dissolved Tungsten	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Uranium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Vanadium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.002	0.001	0.003	0.001	0.004	0.001	0.005	0.001	mg/L	~
Dissolved Zirconium	<0.001	0.001	<0.001	0.001	0.001	0.001	<0.001	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500662

Sample Description	MARLK - Top		MARLK - Bottom		GERLK - Top		GERLK - Bottom			
Sample Date	5/29/2023 1:40 PM		5/29/2023 1:56 PM		5/29/2023 1:10 PM		5/29/2023 1:25 PM			
Lab ID	1885907		1885908		1885909		1885910			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.067 [0.069]	0.001	0.066	0.001	0.044	0.001	0.022	0.001	mg/L	0.075
Total Antimony	<0.0005 [<0.0005]	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	0.02
Total Arsenic	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.005
Total Barium	0.005 [0.005]	0.001	0.011	0.001	0.011	0.001	0.056	0.001	mg/L	~
Total Beryllium	<0.0005 [<0.0005]	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	0.011
Total Bismuth	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Boron	0.003 [0.003]	0.002	0.004	0.002	0.004	0.002	0.008	0.002	mg/L	0.2
Total Cadmium	<0.00002 [<0.00002]	0.00002	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	mg/L	0.0001
Total Calcium	11.30 [11.20]	0.05	23.0	0.5	24.5	0.5	71.0	0.5	mg/L	~
Total Cerium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Cesium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Chromium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Cobalt	<0.0001 [<0.0001]	0.0001	0.0002	0.0001	0.0001	0.0001	0.0003	0.0001	mg/L	0.0009
Total Copper	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.001
Total Europium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	0.002	0.001	mg/L	~
Total Iron	0.24 [0.25]	0.02	0.57	0.02	0.34	0.02	6.9	0.2	mg/L	0.3

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500662

Sample Description	MARLK - Top		MARLK - Bottom		GERLK - Top		GERLK - Bottom			
Sample Date	5/29/2023 1:40 PM		5/29/2023 1:56 PM		5/29/2023 1:10 PM		5/29/2023 1:25 PM			
Lab ID	1885907		1885908		1885909		1885910			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Lanthanum	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	<0.0001 [<0.0001]	0.0001	0.0001	0.0001	<0.0001	0.0001	0.0001	0.0001	mg/L	0.001
Total Lithium	<0.005 [<0.005]	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	mg/L	~
Total Magnesium	2.760 [2.720]	0.004	5.430	0.004	5.670	0.004	15.100	0.004	mg/L	~
Total Manganese	0.016 [0.015]	0.001	0.163	0.001	0.025	0.001	0.54	0.01	mg/L	~
Total Mercury					<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Total Molybdenum	<0.001 [<0.001]	0.001	0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.04
Total Nickel	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.025
Total Niobium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.3 [0.3]	0.1	0.6	0.1	0.7	0.1	1.7	0.1	mg/L	~
Total Rhodium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	0.002	0.001	mg/L	~
Total Scandium	<0.001 [<0.001]	0.001	0.002	0.001	<0.001	0.001	0.004	0.001	mg/L	~
Total Selenium	<0.0002 [<0.0002]	0.0002	0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	0.1
Total Silicon	0.6 [0.6]	0.6	2.3	0.6	1.3	0.6	6.8	0.6	mg/L	~
Total Silver	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0001
Total Sodium	0.8 [0.9]	0.1	1.7	0.1	1.8	0.1	5.1	0.1	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500662

Sample Description	MARLK - Top		MARLK - Bottom		GERLK - Top		GERLK - Bottom			
Sample Date	5/29/2023 1:40 PM		5/29/2023 1:56 PM		5/29/2023 1:10 PM		5/29/2023 1:25 PM			
Lab ID	1885907		1885908		1885909		1885910			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Strontium	0.015 [0.015]	0.001	0.031	0.001	0.034	0.001	0.091	0.001	mg/L	~
Total Sulphur	3.8 [4.0]	0.8	3.2	0.8	4.1	0.8	4.0	0.8	mg/L	~
Total Tellurium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Thallium	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0003
Total Thorium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Tin	0.011 [0.010]	0.001	0.021	0.001	0.008	0.001	0.011	0.001	mg/L	~
Total Titanium	0.002 [0.002]	0.001	0.003	0.001	0.002	0.001	0.006	0.001	mg/L	~
Total Tungsten	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.03
Total Uranium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.005
Total Vanadium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.006
Total Yttrium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.003 [0.003]	0.001	0.006	0.001	0.002	0.001	0.002	0.001	mg/L	0.02
Total Zirconium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.004

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500662

Sample Description	SUTHLK - Top		SUTHLK - Bottom		JCRK - 03		NDR - S - 06			
Sample Date	5/29/2023 12:10 PM		5/29/2023 12:20 PM		5/29/2023 10:55 AM		5/29/2023 3:15 PM			
Lab ID	1885911		1885912		1885913		1885914			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.008	0.001	0.010	0.001	0.324	0.001	0.176	0.001	mg/L	0.075
Total Antimony	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	0.02
Total Arsenic	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.005
Total Barium	0.008	0.001	0.008	0.001	0.008	0.001	0.005	0.001	mg/L	~
Total Beryllium	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	0.011
Total Bismuth	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Boron	0.004	0.002	0.004	0.002	0.004	0.002	0.003	0.002	mg/L	0.2
Total Cadmium	<0.00002	0.00002	<0.00002	0.00002	0.00005	0.00002	0.00003	0.00002	mg/L	0.0001
Total Calcium	26.5	0.5	29.4	0.5	13.20	0.05	10.30	0.05	mg/L	~
Total Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Cesium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Chromium	<0.001	0.001	<0.001	0.001	0.001	0.001	<0.001	0.001	mg/L	~
Total Cobalt	0.0001	0.0001	0.0001	0.0001	0.0003	0.0001	0.0002	0.0001	mg/L	0.0009
Total Copper	<0.001	0.001	<0.001	0.001	0.002	0.001	0.001	0.001	mg/L	0.001
Total Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.17	0.02	0.19	0.02	0.54	0.02	0.39	0.02	mg/L	0.3
Total Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	<0.0001	0.0001	0.0001	0.0001	0.0003	0.0001	0.0002	0.0001	mg/L	0.001
Total Lithium	<0.005	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	mg/L	~
Total Magnesium	5.860	0.004	6.290	0.004	2.920	0.004	2.470	0.004	mg/L	~
Total Manganese	0.008	0.001	0.013	0.001	0.054	0.001	0.035	0.001	mg/L	~
Total Molybdenum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.04

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500662

Sample Description	SUTHLK - Top		SUTHLK - Bottom		JCRK - 03		NDR - S - 06			
Sample Date	5/29/2023 12:10 PM		5/29/2023 12:20 PM		5/29/2023 10:55 AM		5/29/2023 3:15 PM			
Lab ID	1885911		1885912		1885913		1885914			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Nickel	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.7	0.1	0.8	0.1	0.4	0.1	0.2	0.1	mg/L	~
Total Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	0.001	0.001	0.001	0.001	0.001	0.001	<0.001	0.001	mg/L	~
Total Scandium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Selenium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	0.1
Total Silicon	1.3	0.6	1.5	0.6	1.3	0.6	<0.6	0.6	mg/L	~
Total Silver	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0001
Total Sodium	0.9	0.1	1.1	0.1	2.6	0.1	2.1	0.1	mg/L	~
Total Strontium	0.024	0.001	0.027	0.001	0.021	0.001	0.015	0.001	mg/L	~
Total Sulphur	4.1	0.8	4.0	0.8	3.3	0.8	3.8	0.8	mg/L	~
Total Tellurium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Thallium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0003
Total Thorium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Tin	0.009	0.001	0.024	0.001	0.009	0.001	0.009	0.001	mg/L	~
Total Titanium	<0.001	0.001	<0.001	0.001	0.011	0.001	0.005	0.001	mg/L	~
Total Tungsten	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.03
Total Uranium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.005
Total Vanadium	<0.001	0.001	<0.001	0.001	0.001	0.001	<0.001	0.001	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	<0.001	0.001	0.004	0.001	0.005	0.001	0.005	0.001	mg/L	0.02
Total Zirconium	<0.001	0.001	<0.001	0.001	0.001	0.001	<0.001	0.001	mg/L	0.004

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500662

Sample Description	MARLK - Top		MARLK - Bottom		SUTHLK - Top		SUTHLK - Bottom			
Sample Date	5/29/2023 1:40 PM		5/29/2023 1:56 PM		5/29/2023 12:10 PM		5/29/2023 12:20 PM			
Lab ID	1885907		1885908		1885911		1885912			
MethylMercury	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.10	0.02	0.15	0.02	0.06	0.02	0.25	0.02	ng/L	~

Sample Description	JCRK - 03		NDR - S - 06			
Sample Date	5/29/2023 10:55 AM		5/29/2023 3:15 PM			
Lab ID	1885913		1885914			
MethylMercury	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.17	0.02	0.18	0.02	ng/L	~

Sample Description	MARLK - Top		MARLK - Bottom		GERLK - Top		GERLK - Bottom			
Sample Date	5/29/2023 1:40 PM		5/29/2023 1:56 PM		5/29/2023 1:10 PM		5/29/2023 1:25 PM			
Lab ID	1885907		1885908		1885909		1885910			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	70	10	90	10	115	10	235	10	mg/L	~
Total Suspended Solids	1.30	0.67	6.30	0.67	1.30	0.67	12.00	0.67	mg/L	~

Sample Description	SUTHLK - Top		SUTHLK - Bottom		JCRK - 03		NDR - S - 06			
Sample Date	5/29/2023 12:10 PM		5/29/2023 12:20 PM		5/29/2023 10:55 AM		5/29/2023 3:15 PM			
Lab ID	1885911		1885912		1885913		1885914			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	115	10	140	10	90	10	95	10	mg/L	~
Total Suspended Solids	<0.67	0.67	7.00	0.67	10.30	0.67	4.00	0.67	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 500662

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	501084
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	Adam Gauthier & David Duciaume
Date Order Received:	5/31/2023	Analysis Started:	6/1/2023
Arrival Temperature:	20 °C	Analysis Completed:	6/15/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
MATR-REF	1887384	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	5/30/2023	12:45 PM
Field Blank	1887385	Water	Grab		5/30/2023	
Travel Blank	1887386	Water	Grab		5/30/2023	
JCRK-01	1887387	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	5/30/2023	11:35 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Kirkland Lake	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C

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Canada Nickel Company Inc.

Work Order Number: 501084

Method	Lab	Description	Reference
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 501084

WORK ORDER RESULTS

Sample Description	MATR - REF		Field Blank		Travel Blank		JCRK - 01			
Sample Date	5/30/2023 12:45 PM		5/30/2023		5/30/2023		5/30/2023 11:35 AM			
Lab ID	1887384		1887385		1887386		1887387			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	1.7	0.2	<0.2	0.2	<0.2 [<0.2]	0.2	4.1	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05 [<0.05]	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	2.6	0.5	<0.5	0.5	<0.5 [<0.5]	0.5	14.8	0.5	mg/L	~

Sample Description	MATR - REF		JCRK - 01			
Sample Date	5/30/2023 12:45 PM		5/30/2023 11:35 AM			
Lab ID	1887384		1887387			
Field Parameters	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	7.59	N/A	7.49	N/A	pH	~
Field Temp	17.7	N/A	20.2	N/A	°C	~

Sample Description	MATR - REF		Field Blank		Travel Blank		JCRK - 01			
Sample Date	5/30/2023 12:45 PM		5/30/2023		5/30/2023		5/30/2023 11:35 AM			
Lab ID	1887384		1887385		1887386		1887387			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	15	5	<5	5	<5	5	17	5	mg/L as CaCO3	~
Ammonia (as N)	0.024 [0.023]	0.005	<0.005	0.005	<0.005	0.005	0.028	0.005	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 501084

Sample Description	MATR - REF		Field Blank		Travel Blank		JCRK - 01			
Sample Date	5/30/2023 12:45 PM		5/30/2023		5/30/2023		5/30/2023 11:35 AM			
Lab ID	1887384		1887385		1887386		1887387			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Conductivity	87	1	4	1	4	1	120	1	µS/cm	~
Dissolved Organic Carbon	11.6	0.4	0.8	0.4	0.7	0.4	19.3	0.4	mg/L	~
Free Cyanide			0.002	0.001	0.002	0.001	0.004	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	43	2	7	2	5	2	40	2	mg/L as CaCO3	~
pH	6.92	N/A	6.7	N/A	6.29	N/A	6.78	N/A	pH	~
Strong Acid Dissociable Cyanide			<0.002	0.002	<0.002 [<0.002]	0.002	0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	39.0	0.1	<0.1	0.1	<0.1	0.1	49.5	0.1	mg/L	~
Total Phosphorus (as P)	0.006	0.002	<0.002	0.002	<0.002	0.002	0.013	0.002	mg/L	~
Weak Acid Dissociable Cyanide			0.002	0.001	0.002	0.001	0.002	0.001	mg/L	~

Sample Description	Field Blank		Travel Blank		JCRK - 01			
Sample Date	5/30/2023		5/30/2023		5/30/2023 11:35 AM			
Lab ID	1887385		1887386		1887387			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	0.07	0.01	0.08	0.01	4.65	0.01	ng/L	200

Sample Description	Field Blank		Travel Blank		JCRK - 01			
Sample Date	5/30/2023		5/30/2023		5/30/2023 11:35 AM			
Lab ID	1887385		1887386		1887387			
Mercury by CV	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01	0.01	<0.01 [<0.01]	0.01	ug/L	0.2

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Sample Description	MATR - REF		Field Blank		Travel Blank		JCRK - 01			
Sample Date	5/30/2023 12:45 PM		5/30/2023		5/30/2023		5/30/2023 11:35 AM			
Lab ID	1887384		1887385		1887386		1887387			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.037	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	0.068	0.001	mg/L	~

Sample Description	MATR - REF		Field Blank		Travel Blank		JCRK - 01			
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Lab ID	1887384		1887385		1887386		1887387			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.046	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	0.077	0.001	mg/L	~
Dissolved Antimony	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	0.0001	0.0001	mg/L	~
Dissolved Arsenic	0.0005	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	0.0006	0.0001	mg/L	~
Dissolved Barium	0.0049	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	0.0055	0.0001	mg/L	~
Dissolved Beryllium	<0.00002	0.00002	<0.00002	0.00002	<0.00002 [<0.00002]	0.00002	<0.00002	0.00002	mg/L	~
Dissolved Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Boron	0.004	0.002	<0.002	0.002	<0.002 [<0.002]	0.002	0.005	0.002	mg/L	~
Dissolved Cadmium	0.000010	0.000005	<0.000005	0.000005	<0.000005 [<0.000005]	0.000005	0.000060	0.000005	mg/L	~
Dissolved Calcium	10.90	0.05	<0.05	0.05	<0.05 [<0.05]	0.05	14.10	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0003	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	0.0003	0.0001	mg/L	~

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Sample Description	MATR - REF		Field Blank		Travel Blank		JCRK - 01			
Sample Date	5/30/2023 12:45 PM		5/30/2023		5/30/2023		5/30/2023 11:35 AM			
Lab ID	1887384		1887385		1887386		1887387			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Cobalt	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Copper	0.0015	0.0002	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	0.0028	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.16	0.01	<0.01	0.01	<0.01 [<0.01]	0.01	0.26	0.01	mg/L	~
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	0.00008	0.00005	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	0.00016	0.00005	mg/L	~
Dissolved Lithium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Magnesium	2.490	0.004	<0.004	0.004	<0.004 [<0.004]	0.004	2.980	0.004	mg/L	~
Dissolved Manganese	0.0045	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	0.0127	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00014	0.00005	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	0.00137	0.00005	mg/L	~
Dissolved Nickel	<0.0005	0.0005	<0.0005	0.0005	<0.0005 [<0.0005]	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05	0.05	<0.05 [<0.05]	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.34	0.05	<0.05	0.05	<0.05 [<0.05]	0.05	0.40	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~

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Sample Date	5/30/2023 12:45 PM		5/30/2023		5/30/2023		5/30/2023 11:35 AM			
Lab ID	1887384		1887385		1887386		1887387			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Rubidium	0.0009	0.0002	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	0.0008	0.0002	mg/L	~
Dissolved Scandium	0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Selenium	0.00007	0.00005	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	0.00015	0.00005	mg/L	~
Dissolved Silicon	1.87	0.05	<0.05	0.05	<0.05 [<0.05]	0.05	1.09	0.05	mg/L	~
Dissolved Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Sodium	1.51	0.05	<0.05	0.05	<0.05 [<0.05]	0.05	3.28	0.05	mg/L	~
Dissolved Strontium	0.0154	0.0002	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	0.0260	0.0002	mg/L	~
Dissolved Sulfur	<0.5	0.5	<0.5	0.5	<0.5 [<0.5]	0.5	1.5	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	0.00009	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Tin	0.0016	0.0001	0.0015	0.0001	0.0019 [0.0020]	0.0001	0.0017	0.0001	mg/L	~
Dissolved Titanium	0.0013	0.0003	<0.0003	0.0003	<0.0003 [<0.0003]	0.0003	0.0020	0.0003	mg/L	~
Dissolved Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Uranium	0.00005	0.00001	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	0.00005	0.00001	mg/L	~
Dissolved Vanadium	<0.0005	0.0005	<0.0005	0.0005	<0.0005 [<0.0005]	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~

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Sample Date	5/30/2023 12:45 PM		5/30/2023		5/30/2023		5/30/2023 11:35 AM			
Lab ID	1887384		1887385		1887386		1887387			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Zinc	0.005	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	0.009	0.001	mg/L	~
Dissolved Zirconium	0.0004	0.0002	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	0.0007	0.0002	mg/L	~

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Lab ID	1887384		1887385		1887386		1887387			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.124	0.001	0.003	0.001	0.003 [0.004]	0.001	0.292	0.001	mg/L	0.075
Total Antimony	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	0.0001	0.0001	mg/L	0.02
Total Arsenic	0.0004	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	0.0006	0.0001	mg/L	0.005
Total Barium	0.0050	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	0.0066	0.0001	mg/L	~
Total Beryllium	<0.00002	0.00002	<0.00002	0.00002	<0.00002 [<0.00002]	0.00002	<0.00002	0.00002	mg/L	0.011
Total Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	<0.00005	0.00005	mg/L	~
Total Boron	0.005	0.002	<0.002	0.002	<0.002 [<0.002]	0.002	0.005	0.002	mg/L	0.2
Total Cadmium	0.000010	0.000005	<0.000005	0.000005	<0.000005 [<0.000005]	0.000005	0.000070	0.000005	mg/L	0.0001
Total Calcium	10.80	0.05	0.05	0.05	<0.05 [<0.05]	0.05	14.40	0.05	mg/L	~
Total Cerium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Total Cesium	0.00001	0.00001	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	0.00003	0.00001	mg/L	~

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Lab ID	1887384		1887385		1887386		1887387			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Chromium	0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	0.0005	0.0001	mg/L	~
Total Cobalt	0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	0.0002	0.0001	mg/L	0.0009
Total Copper	0.0008	0.0002	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	0.0025	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Total Iron	0.26	0.01	<0.01	0.01	<0.01 [<0.01]	0.01	0.50	0.01	mg/L	0.3
Total Lanthanum	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00011	0.00005	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	0.00027	0.00005	mg/L	0.001
Total Lithium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Total Magnesium	2.500	0.004	0.005	0.004	<0.004 [<0.004]	0.004	3.110	0.004	mg/L	~
Total Manganese	0.0150	0.0001	<0.0001	0.0001	<0.0001 [0.0001]	0.0001	0.0232	0.0001	mg/L	~
Total Mercury	<0.0001	0.0001							mg/L	0.0002
Total Molybdenum	0.00010	0.00005	0.00014	0.00005	<0.00005 [<0.00005]	0.00005	0.00148	0.00005	mg/L	0.04
Total Nickel	<0.0005	0.0005	<0.0005	0.0005	<0.0005 [<0.0005]	0.0005	<0.0005	0.0005	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.34	0.05	<0.05	0.05	<0.05 [<0.05]	0.05	0.46	0.05	mg/L	~
Total Rhodium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~

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Lab ID	1887384		1887385		1887386		1887387			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Rubidium	0.0010	0.0002	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	0.0012	0.0002	mg/L	~
Total Scandium	0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	0.001	0.001	mg/L	~
Total Selenium	0.00014	0.00005	0.00006	0.00005	<0.00005 [<0.00005]	0.00005	0.00025	0.00005	mg/L	0.1
Total Silicon	1.97	0.05	0.09	0.05	0.09 [0.10]	0.05	1.46	0.05	mg/L	~
Total Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	mg/L	0.0001
Total Sodium	1.49	0.05	0.09	0.05	<0.05 [<0.05]	0.05	3.38	0.05	mg/L	~
Total Strontium	0.0154	0.0002	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	0.0272	0.0002	mg/L	~
Total Sulphur	<0.5	0.5	<0.5	0.5	<0.5 [<0.5]	0.5	2.0	0.5	mg/L	~
Total Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	mg/L	~
Total Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	0.00007	0.00001	mg/L	0.0003
Total Thorium	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	~
Total Tin	0.0018	0.0001	0.0018	0.0001	0.0027 [0.0027]	0.0001	0.0018	0.0001	mg/L	~
Total Titanium	0.0047	0.0003	<0.0003	0.0003	<0.0003 [<0.0003]	0.0003	0.0101	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00005	0.00001	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	0.00006	0.00001	mg/L	0.005
Total Vanadium	<0.0005	0.0005	<0.0005	0.0005	<0.0005 [<0.0005]	0.0005	0.0007	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 501084

Sample Description	MATR - REF		Field Blank		Travel Blank		JCRK - 01			
Sample Date	5/30/2023 12:45 PM		5/30/2023		5/30/2023		5/30/2023 11:35 AM			
Lab ID	1887384		1887385		1887386		1887387			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Zinc	0.002	0.001	0.001	0.001	0.002 [<0.001]	0.001	0.011	0.001	mg/L	0.02
Total Zirconium	0.0004	0.0002	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	0.0010	0.0002	mg/L	0.004

Sample Description	Field Blank		Travel Blank		JCRK - 01			
Sample Date	5/30/2023		5/30/2023		5/30/2023 11:35 AM			
Lab ID	1887385		1887386		1887387			
MethylMercury	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.02 [<0.02]	0.02	<0.02	0.02	0.16	0.02	ng/L	~

Sample Description	MATR - REF		Field Blank		Travel Blank		JCRK - 01			
Sample Date	5/30/2023 12:45 PM		5/30/2023		5/30/2023		5/30/2023 11:35 AM			
Lab ID	1887384		1887385		1887386		1887387			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	95	10	<10	10	<10	10	125	10	mg/L	~
Total Suspended Solids	5.00	0.67	<0.67	0.67	<0.67	0.67	7.33	0.67	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 501084

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	502041
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	David Duciaume
Date Order Received:	6/7/2023	Analysis Started:	6/8/2023
Arrival Temperature:	21 °C	Analysis Completed:	6/21/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
JC-S-01	1890728	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	6/7/2023	11:35 AM
JCRK-02	1890729	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	6/7/2023	8:20 AM
NDR-S-06	1890730	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	6/7/2023	9:35 AM
SWDup	1890731	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	6/7/2023	

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 502041

Method	Lab	Description	Reference
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 502041

WORK ORDER RESULTS

Sample Description	JC - S - 01		JCRK - 02		NDR - S - 06		SWDup			
Sample Date	6/7/2023 11:35 AM		6/7/2023 8:20 AM		6/7/2023 9:35 AM		6/7/2023			
Lab ID	1890728		1890729		1890730		1890731			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	14.6	0.2	0.3	0.2	1.8	0.2	<0.2	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	0.07	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1 [<0.1]	0.1	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01 [<0.01]	0.01	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	mg/L	~

Sample Description	JC - S - 01		JCRK - 02		NDR - S - 06			
Sample Date	6/7/2023 11:35 AM		6/7/2023 8:20 AM		6/7/2023 9:35 AM			
Lab ID	1890728		1890729		1890730			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	4.9	N/A	6.97	N/A	6.47	N/A	pH	~
Field Temp	12.68	N/A	15.9	N/A	15.84	N/A	°C	~

Sample Description	JC - S - 01		JCRK - 02		NDR - S - 06		SWDup			
Sample Date	6/7/2023 11:35 AM		6/7/2023 8:20 AM		6/7/2023 9:35 AM		6/7/2023			
Lab ID	1890728		1890729		1890730		1890731			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	9	5	7	5	6	5	7	5	mg/L as CaCO3	~
Ammonia (as N)	0.049	0.005	0.051	0.005	0.044	0.005	0.050	0.005	mg/L	~
Conductivity	74	1	41	1	80	1	42	1	µS/cm	~

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Canada Nickel Company Inc.

Work Order Number: 502041

Sample Description	JC - S - 01		JCRK - 02		NDR - S - 06		SWDup			
Sample Date	6/7/2023 11:35 AM		6/7/2023 8:20 AM		6/7/2023 9:35 AM		6/7/2023			
Lab ID	1890728		1890729		1890730		1890731			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Organic Carbon	33.7	0.4	31.2	0.4	28.8	0.4	31.1	0.4	mg/L	~
Free Cyanide	<0.001 [0.001]	0.001	0.002	0.001	<0.001	0.001	<0.001	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	8	2	20	2	39	2	21	2	mg/L as CaCO3	~
pH	5.93	N/A	6.68	N/A	7.19	N/A	6.76	N/A	pH	~
Strong Acid Dissociable Cyanide	<0.002	0.002	0.003	0.002	0.004	0.002	<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	22.1	0.1	29.2	0.1	50.4	0.1	29.2	0.1	mg/L	~
Total Phosphorus (as P)	0.004	0.002	0.025	0.002	0.034	0.002	0.027	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.003	0.001	0.002 [0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

Sample Description	JC - S - 01		JCRK - 02		NDR - S - 06		SWDup			
Sample Date	6/7/2023 11:35 AM		6/7/2023 8:20 AM		6/7/2023 9:35 AM		6/7/2023			
Lab ID	1890728		1890729		1890730		1890731			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	2.92	0.01	4.09	0.01	3.64	0.01	3.58	0.01	ng/L	200

Sample Description	JC - S - 01		JCRK - 02		NDR - S - 06		SWDup			
Sample Date	6/7/2023 11:35 AM		6/7/2023 8:20 AM		6/7/2023 9:35 AM		6/7/2023			
Lab ID	1890728		1890729		1890730		1890731			
Mercury by CV	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	ug/L	0.2

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Canada Nickel Company Inc.

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Sample Description	JC - S - 01		JCRK - 02		NDR - S - 06		SWDup			
Sample Date	6/7/2023 11:35 AM		6/7/2023 8:20 AM		6/7/2023 9:35 AM		6/7/2023			
Lab ID	1890728		1890729		1890730		1890731			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.108 [0.108]	0.001	0.180	0.001	0.078	0.001	0.181	0.001	mg/L	~

Sample Description	JC - S - 01		JCRK - 02		NDR - S - 06		SWDup			
Sample Date	6/7/2023 11:35 AM		6/7/2023 8:20 AM		6/7/2023 9:35 AM		6/7/2023			
Lab ID	1890728		1890729		1890730		1890731			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.112 [0.112]	0.001	0.262	0.001	0.100	0.001	0.248	0.001	mg/L	~
Dissolved Antimony	<0.0001 [<0.0001]	0.0001	0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Arsenic	0.0006 [0.0007]	0.0001	0.0011	0.0001	0.0008	0.0001	0.0011	0.0001	mg/L	~
Dissolved Barium	0.0040 [0.0040]	0.0001	0.0040	0.0001	0.0050	0.0001	0.0050	0.0001	mg/L	~
Dissolved Beryllium	<0.00002 [<0.00002]	0.00002	0.00002	0.00002	<0.00002	0.00002	0.00002	0.00002	mg/L	~
Dissolved Bismuth	<0.00005 [<0.00005]	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Boron	0.005 [0.005]	0.002	0.005	0.002	0.005	0.002	0.005	0.002	mg/L	~
Dissolved Cadmium	0.000050 [0.000060]	0.000005	0.000060	0.000005	0.000020	0.000005	0.000070	0.000005	mg/L	~
Dissolved Calcium	6.18 [6.25]	0.05	8.00	0.05	13.60	0.05	8.37	0.05	mg/L	~
Dissolved Cerium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0004 [0.0004]	0.0001	0.0010	0.0001	0.0009	0.0001	0.0011	0.0001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 502041

Sample Description	JC - S - 01		JCRK - 02		NDR - S - 06		SWDup			
Sample Date	6/7/2023 11:35 AM		6/7/2023 8:20 AM		6/7/2023 9:35 AM		6/7/2023			
Lab ID	1890728		1890729		1890730		1890731			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Cobalt	0.0004 [0.0004]	0.0001	0.0004	0.0001	0.0003	0.0001	0.0004	0.0001	mg/L	~
Dissolved Copper	0.0022 [0.0022]	0.0002	0.0024	0.0002	0.0022	0.0002	0.0021	0.0002	mg/L	~
Dissolved Europium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.28 [0.29]	0.01	0.53	0.01	0.35	0.01	0.53	0.01	mg/L	~
Dissolved Lanthanum	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	0.00070 [0.00071]	0.00005	0.00033	0.00005	0.00016	0.00005	0.00032	0.00005	mg/L	~
Dissolved Lithium	0.001 [0.001]	0.001	0.001	0.001	0.001	0.001	0.001	0.001	mg/L	~
Dissolved Magnesium	1.380 [1.350]	0.004	1.970	0.004	3.610	0.004	1.960	0.004	mg/L	~
Dissolved Manganese	0.0539 [0.0533]	0.0001	0.0675	0.0001	0.0511	0.0001	0.0688	0.0001	mg/L	~
Dissolved Mercury	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00019 [0.00017]	0.00005	0.00200	0.00005	0.00045	0.00005	0.00023	0.00005	mg/L	~
Dissolved Nickel	0.0005 [0.0005]	0.0005	0.0010	0.0005	0.0007	0.0005	0.0009	0.0005	mg/L	~
Dissolved Niobium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05 [<0.05]	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.09 [0.09]	0.05	0.33	0.05	0.26	0.05	0.33	0.05	mg/L	~
Dissolved Rhodium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 502041

Sample Description	JC - S - 01		JCRK - 02		NDR - S - 06		SWDup			
Sample Date	6/7/2023 11:35 AM		6/7/2023 8:20 AM		6/7/2023 9:35 AM		6/7/2023			
Lab ID	1890728		1890729		1890730		1890731			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Rubidium	0.0002 [0.0002]	0.0002	0.0011	0.0002	0.0007	0.0002	0.0010	0.0002	mg/L	~
Dissolved Scandium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Selenium	0.00019 [0.00028]	0.00005	<0.00005	0.00005	0.00014	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Silicon	1.15 [1.15]	0.05	0.91	0.05	0.59	0.05	0.90	0.05	mg/L	~
Dissolved Silver	<0.00001 [<0.00001]	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	mg/L	~
Dissolved Sodium	9.56 [9.25]	0.05	0.84	0.05	2.17	0.05	0.81	0.05	mg/L	~
Dissolved Strontium	0.0103 [0.0104]	0.0002	0.0149	0.0002	0.0198	0.0002	0.0152	0.0002	mg/L	~
Dissolved Sulfur	0.9 [<5]	0.5	<0.5	0.5	1.7	0.5	1.0	0.5	mg/L	~
Dissolved Tellurium	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Thallium	<0.00001 [<0.00001]	0.00001	0.00009	0.00001	0.00002	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Thorium	<0.0001 [<0.0001]	0.0001	0.0002	0.0001	<0.0001	0.0001	0.0002	0.0001	mg/L	~
Dissolved Tin	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Titanium	0.0017 [0.0015]	0.0003	0.0081	0.0003	0.0035	0.0003	0.0079	0.0003	mg/L	~
Dissolved Tungsten	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Uranium	<0.00001 [<0.00001]	0.00001	0.00005	0.00001	0.00004	0.00001	0.00005	0.00001	mg/L	~
Dissolved Vanadium	<0.0005 [<0.0005]	0.0005	0.0011	0.0005	0.0008	0.0005	0.0011	0.0005	mg/L	~
Dissolved Yttrium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

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Sample Description	JC - S - 01		JCRK - 02		NDR - S - 06		SWDup			
Sample Date	6/7/2023 11:35 AM		6/7/2023 8:20 AM		6/7/2023 9:35 AM		6/7/2023			
Lab ID	1890728		1890729		1890730		1890731			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Zinc	0.014 [0.014]	0.001	0.007	0.001	0.004	0.001	0.007	0.001	mg/L	~
Dissolved Zirconium	0.0003 [0.0003]	0.0002	0.0016	0.0002	0.0008	0.0002	0.0016	0.0002	mg/L	~

Sample Description	JC - S - 01		JCRK - 02		NDR - S - 06		SWDup			
Sample Date	6/7/2023 11:35 AM		6/7/2023 8:20 AM		6/7/2023 9:35 AM		6/7/2023			
Lab ID	1890728		1890729		1890730		1890731			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.134 [0.133]	0.001	0.410	0.001	0.292	0.001	0.598	0.001	mg/L	0.075
Total Antimony	<0.0001 [<0.0001]	0.0001	0.0002	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.02
Total Arsenic	0.0007 [0.0007]	0.0001	0.0010	0.0001	0.0008	0.0001	0.0011	0.0001	mg/L	0.005
Total Barium	0.0044 [0.0045]	0.0001	0.0063	0.0001	0.0074	0.0001	0.0073	0.0001	mg/L	~
Total Beryllium	<0.00002 [<0.00002]	0.00002	0.00002	0.00002	0.00002	0.00002	0.00003	0.00002	mg/L	0.011
Total Bismuth	<0.00005 [<0.00005]	0.00005	0.00007	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Total Boron	0.005 [0.004]	0.002	0.005	0.002	0.005	0.002	0.004	0.002	mg/L	0.2
Total Cadmium	0.000050 [0.000050]	0.000005	0.000080	0.000005	0.000040	0.000005	0.000070	0.000005	mg/L	0.0001
Total Calcium	6.32 [6.10]	0.05	8.35	0.05	13.60	0.05	8.21	0.05	mg/L	~
Total Cerium	<0.001 [<0.001]	0.001	0.001	0.001	0.001	0.001	0.001	0.001	mg/L	~
Total Cesium	<0.00001 [<0.00001]	0.00001	0.00003	0.00001	0.00002	0.00001	0.00004	0.00001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 502041

Sample Description	JC - S - 01		JCRK - 02		NDR - S - 06		SWDup			
Sample Date	6/7/2023 11:35 AM		6/7/2023 8:20 AM		6/7/2023 9:35 AM		6/7/2023			
Lab ID	1890728		1890729		1890730		1890731			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Chromium	0.0011 [0.0006]	0.0001	0.0012	0.0001	0.0010	0.0001	0.0014	0.0001	mg/L	~
Total Cobalt	0.0004 [0.0004]	0.0001	0.0005	0.0001	0.0004	0.0001	0.0005	0.0001	mg/L	0.0009
Total Copper	0.0044 [0.0041]	0.0002	0.0051	0.0002	0.0036	0.0002	0.0041	0.0002	mg/L	0.001
Total Europium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.32 [0.31]	0.01	0.7	0.1	0.57	0.01	0.8	0.1	mg/L	0.3
Total Lanthanum	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00075 [0.00078]	0.00005	0.00052	0.00005	0.00033	0.00005	0.00057	0.00005	mg/L	0.001
Total Lithium	0.001 [0.001]	0.001	0.001	0.001	0.001	0.001	0.002	0.001	mg/L	~
Total Magnesium	1.410 [1.410]	0.004	2.040	0.004	3.690	0.004	2.060	0.004	mg/L	~
Total Manganese	0.0560 [0.0556]	0.0001	0.0745	0.0001	0.0682	0.0001	0.0751	0.0001	mg/L	~
Total Molybdenum	0.00016 [0.00006]	0.00005	0.00086	0.00005	0.00018	0.00005	0.00013	0.00005	mg/L	0.04
Total Nickel	<0.0005 [<0.0005]	0.0005	0.0006	0.0005	0.0008	0.0005	0.0011	0.0005	mg/L	0.025
Total Niobium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.09 [0.09]	0.05	0.38	0.05	0.30	0.05	0.41	0.05	mg/L	~
Total Rhodium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	0.0002 [0.0002]	0.0002	0.0014	0.0002	0.0011	0.0002	0.0017	0.0002	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 502041

Sample Description	JC - S - 01		JCRK - 02		NDR - S - 06		SWDup			
Sample Date	6/7/2023 11:35 AM		6/7/2023 8:20 AM		6/7/2023 9:35 AM		6/7/2023			
Lab ID	1890728		1890729		1890730		1890731			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Scandium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Selenium	0.00036 [0.00027]	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	0.1
Total Silicon	1.23 [1.25]	0.05	1.19	0.05	0.86	0.05	1.56	0.05	mg/L	~
Total Silver	0.00001 [0.00001]	0.00001	<0.00001	0.00001	0.00001	0.00001	<0.00001	0.00001	mg/L	0.0001
Total Sodium	9.48 [9.39]	0.05	0.94	0.05	2.21	0.05	0.84	0.05	mg/L	~
Total Strontium	0.0106 [0.0104]	0.0002	0.0155	0.0002	0.0208	0.0002	0.0152	0.0002	mg/L	~
Total Sulphur	<0.5 [<0.5]	0.5	<0.5	0.5	1.0	0.5	<0.5	0.5	mg/L	~
Total Tellurium	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Total Thallium	<0.00001 [<0.00001]	0.00001	0.00006	0.00001	0.00001	0.00001	0.00001	0.00001	mg/L	0.0003
Total Thorium	<0.0001 [<0.0001]	0.0001	0.0001	0.0001	<0.0001	0.0001	0.0001	0.0001	mg/L	~
Total Tin	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Total Titanium	0.0025 [0.0024]	0.0003	0.0132	0.0003	0.0103	0.0003	0.0205	0.0003	mg/L	~
Total Tungsten	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	<0.00001 [<0.00001]	0.00001	0.00005	0.00001	0.00005	0.00001	0.00005	0.00001	mg/L	0.005
Total Vanadium	<0.0005 [<0.0005]	0.0005	0.0014	0.0005	0.0010	0.0005	0.0016	0.0005	mg/L	0.006
Total Yttrium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.008 [0.011]	0.001	0.008	0.001	0.004	0.001	0.008	0.001	mg/L	0.02

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Sample Description	JC - S - 01		JCRK - 02		NDR - S - 06		SWDup			
Sample Date	6/7/2023 11:35 AM		6/7/2023 8:20 AM		6/7/2023 9:35 AM		6/7/2023			
Lab ID	1890728		1890729		1890730		1890731			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Zirconium	0.0003 [0.0003]	0.0002	0.0016	0.0002	0.0012	0.0002	0.0018	0.0002	mg/L	0.004

Sample Description	JC - S - 01		JCRK - 02		NDR - S - 06		SWDup			
Sample Date	6/7/2023 11:35 AM		6/7/2023 8:20 AM		6/7/2023 9:35 AM		6/7/2023			
Lab ID	1890728		1890729		1890730		1890731			
MethylMercury	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.25	0.02	0.21	0.02	0.14	0.02	0.20	0.02	ng/L	~

Sample Description	JC - S - 01		JCRK - 02		NDR - S - 06		SWDup			
Sample Date	6/7/2023 11:35 AM		6/7/2023 8:20 AM		6/7/2023 9:35 AM		6/7/2023			
Lab ID	1890728		1890729		1890730		1890731			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	115	10	85	10	100	10	100 [105]	10	mg/L	~
Total Suspended Solids	1.00	0.67	8.67	0.67	11.70	0.67	8 [8]	1	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 502041

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	502339
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	Adam Gauthier & David Duciaume
Date Order Received:	6/12/2023	Analysis Started:	6/13/2023
Arrival Temperature:	18 °C	Analysis Completed:	6/21/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
PC-01	1891902	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	6/12/2023	1:10 PM
WBR-S-Ref	1891903	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	6/12/2023	12:55 PM
WBR-S-04	1891904	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	6/12/2023	10:00 AM
WBR-S-06	1891905	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	6/12/2023	11:55 AM
WBR-P-03	1891906	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	6/12/2023	10:20 AM
WBR-P-04	1891907	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	6/12/2023	11:15 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A

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Canada Nickel Company Inc.

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Method	Lab	Description	Reference
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 502339

WORK ORDER RESULTS

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 04		WBR - S - 06			
Sample Date	6/12/2023 1:10 PM		6/12/2023 12:55 PM		6/12/2023 10:00 AM		6/12/2023 11:55 AM			
Lab ID	1891902		1891903		1891904		1891905			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1 [<0.1]	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01 [<0.01]	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	0.7	0.5	<0.5	0.5	<0.5	0.5	0.6	0.5	mg/L	~

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	6/12/2023 10:20 AM		6/12/2023 11:15 AM			
Lab ID	1891906		1891907			
Anions	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	<0.2	0.2	<0.2	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	<0.5	0.5	<0.5	0.5	mg/L	~

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 04		WBR - S - 06			
Sample Date	6/12/2023 1:10 PM		6/12/2023 12:55 PM		6/12/2023 10:00 AM		6/12/2023 11:55 AM			
Lab ID	1891902		1891903		1891904		1891905			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	6.42	N/A	6.47	N/A	6.32	N/A	6.54	N/A	pH	~

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Canada Nickel Company Inc.

Work Order Number: 502339

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 04		WBR - S - 06			
Sample Date	6/12/2023 1:10 PM		6/12/2023 12:55 PM		6/12/2023 10:00 AM		6/12/2023 11:55 AM			
Lab ID	1891902		1891903		1891904		1891905			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field Temp	14.21	N/A	16.96	N/A	12.49	N/A	15.46	N/A	°C	~

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	6/12/2023 10:20 AM		6/12/2023 11:15 AM			
Lab ID	1891906		1891907			
Field Parameters	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	5.14	N/A	3.95	N/A	pH	~
Field Temp	12.52	N/A	12.54	N/A	°C	~

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 04		WBR - S - 06			
Sample Date	6/12/2023 1:10 PM		6/12/2023 12:55 PM		6/12/2023 10:00 AM		6/12/2023 11:55 AM			
Lab ID	1891902		1891903		1891904		1891905			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	9	5	7	5	9	5	8	5	mg/L as CaCO3	~
Ammonia (as N)	0.043	0.005	0.043	0.005	0.046	0.005	0.053	0.005	mg/L	~
Conductivity	91	1	91	1	84	1	109	1	µS/cm	~
Dissolved Organic Carbon	7.2	0.4	34	2	36	2	35	2	mg/L	~
Free Cyanide	0.002	0.001	0.003	0.001	0.001	0.001	0.001	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	46	2	50	2	43	2	58	2	mg/L as CaCO3	~
pH	7.22	N/A	7.17	N/A	7.47	N/A	7.23	N/A	pH	~
Strong Acid Dissociable Cyanide	<0.002	0.002	0.010	0.002	0.008	0.002	0.008	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	51.2	0.1	55.2	0.1	47.8	0.1	64.4	0.1	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 502339

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 04		WBR - S - 06			
Sample Date	6/12/2023 1:10 PM		6/12/2023 12:55 PM		6/12/2023 10:00 AM		6/12/2023 11:55 AM			
Lab ID	1891902		1891903		1891904		1891905			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Phosphorus (as P)	0.028 [0.027]	0.002	0.037	0.002	0.030	0.002	0.039	0.002	mg/L	~
Weak Acid Dissociable Cyanide	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	6/12/2023 10:20 AM		6/12/2023 11:15 AM			
Lab ID	1891906		1891907			
General Chemistry	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	16	5	18	5	mg/L as CaCO3	~
Ammonia (as N)	0.048	0.005	0.053	0.005	mg/L	~
Conductivity	31	1	24	1	µS/cm	~
Dissolved Organic Carbon	41	2	42	2	mg/L	~
M-Alkalinity (pH 4.5)	14	2	7	2	mg/L as CaCO3	~
pH	6.08	N/A	5.4	N/A	pH	~
Total Hardness (as CaCO3) (Calc.)	20.1	0.1	13.9	0.1	mg/L	~
Total Phosphorus (as P)	0.019	0.002	0.011	0.002	mg/L	~

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 04		WBR - S - 06			
Sample Date	6/12/2023 1:10 PM		6/12/2023 12:55 PM		6/12/2023 10:00 AM		6/12/2023 11:55 AM			
Lab ID	1891902		1891903		1891904		1891905			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	5.23	0.01	4.62	0.01	3.84	0.01	4.27	0.01	ng/L	200

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Canada Nickel Company Inc.

Work Order Number: 502339

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 04		WBR - S - 06			
Sample Date	6/12/2023 1:10 PM		6/12/2023 12:55 PM		6/12/2023 10:00 AM		6/12/2023 11:55 AM			
Lab ID	1891902		1891903		1891904		1891905			
Mercury by CV	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	ug/L	0.2

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 04		WBR - S - 06			
Sample Date	6/12/2023 1:10 PM		6/12/2023 12:55 PM		6/12/2023 10:00 AM		6/12/2023 11:55 AM			
Lab ID	1891902		1891903		1891904		1891905			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.100 [0.105]	0.001	0.123	0.001	0.132	0.001	0.132	0.001	mg/L	~

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	6/12/2023 10:20 AM		6/12/2023 11:15 AM			
Lab ID	1891906		1891907			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.169	0.001	0.112	0.001	mg/L	~

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 04		WBR - S - 06			
Sample Date	6/12/2023 1:10 PM		6/12/2023 12:55 PM		6/12/2023 10:00 AM		6/12/2023 11:55 AM			
Lab ID	1891902		1891903		1891904		1891905			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.144 [0.140]	0.001	0.152	0.001	0.162	0.001	0.140	0.001	mg/L	~
Dissolved Antimony	0.0003 [0.0003]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 502339

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 04		WBR - S - 06			
Sample Date	6/12/2023 1:10 PM		6/12/2023 12:55 PM		6/12/2023 10:00 AM		6/12/2023 11:55 AM			
Lab ID	1891902		1891903		1891904		1891905			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Arsenic	0.0005 [0.0005]	0.0001	0.0012	0.0001	0.0010	0.0001	0.0011	0.0001	mg/L	~
Dissolved Barium	0.0170 [0.0168]	0.0001	0.0162	0.0001	0.0153	0.0001	0.0184	0.0001	mg/L	~
Dissolved Beryllium	<0.00002 [<0.00002]	0.00002	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	mg/L	~
Dissolved Bismuth	<0.00005 [<0.00005]	0.00005	0.00014	0.00005	0.00011	0.00005	0.00010	0.00005	mg/L	~
Dissolved Boron	0.004 [0.004]	0.002	0.006	0.002	0.004	0.002	0.005	0.002	mg/L	~
Dissolved Cadmium	0.000030 [0.000020]	0.000005	0.000060	0.000005	0.000040	0.000005	0.000040	0.000005	mg/L	~
Dissolved Calcium	13.40 [13.50]	0.05	15.70	0.05	12.90	0.05	17.60	0.05	mg/L	~
Dissolved Cerium	<0.001 [<0.001]	0.001	0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0009 [0.0008]	0.0001	0.0010	0.0001	0.0008	0.0001	0.0010	0.0001	mg/L	~
Dissolved Cobalt	<0.0001 [0.0001]	0.0001	0.0002	0.0001	0.0002	0.0001	0.0002	0.0001	mg/L	~
Dissolved Copper	0.0018 [0.0018]	0.0002	0.0027	0.0002	0.0023	0.0002	0.0025	0.0002	mg/L	~
Dissolved Europium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.38 [0.36]	0.01	0.54	0.01	0.57	0.01	0.58	0.01	mg/L	~
Dissolved Lanthanum	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	0.00016 [0.00016]	0.00005	0.00030	0.00005	0.00028	0.00005	0.00031	0.00005	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 502339

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 04		WBR - S - 06			
Sample Date	6/12/2023 1:10 PM		6/12/2023 12:55 PM		6/12/2023 10:00 AM		6/12/2023 11:55 AM			
Lab ID	1891902		1891903		1891904		1891905			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Lithium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Magnesium	3.310 [3.250]	0.004	3.140	0.004	2.930	0.004	3.850	0.004	mg/L	~
Dissolved Manganese	0.0402 [0.0406]	0.0001	0.0761	0.0001	0.0556	0.0001	0.0597	0.0001	mg/L	~
Dissolved Mercury	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00025 [0.00010]	0.00005	0.00288	0.00005	0.00087	0.00005	0.00025	0.00005	mg/L	~
Dissolved Nickel	0.0010 [0.0009]	0.0005	0.0014	0.0005	0.0012	0.0005	0.0014	0.0005	mg/L	~
Dissolved Niobium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05 [<0.05]	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.39 [0.39]	0.05	0.37	0.05	0.27	0.05	0.40	0.05	mg/L	~
Dissolved Rhodium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	0.0010 [0.0010]	0.0002	0.0012	0.0002	0.0008	0.0002	0.0011	0.0002	mg/L	~
Dissolved Scandium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Selenium	<0.00005 [<0.00005]	0.00005	0.00030	0.00005	0.00006	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Silicon	1.21 [1.19]	0.05	0.74	0.05	0.81	0.05	1.15	0.05	mg/L	~
Dissolved Silver	<0.00001 [<0.00001]	0.00001	0.00009	0.00001	0.00006	0.00001	0.00006	0.00001	mg/L	~
Dissolved Sodium	1.31 [1.30]	0.05	1.11	0.05	1.13	0.05	1.52	0.05	mg/L	~
Dissolved Strontium	0.0220 [0.0219]	0.0002	0.0229	0.0002	0.0204	0.0002	0.0269	0.0002	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 502339

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 04		WBR - S - 06			
Sample Date	6/12/2023 1:10 PM		6/12/2023 12:55 PM		6/12/2023 10:00 AM		6/12/2023 11:55 AM			
Lab ID	1891902		1891903		1891904		1891905			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Sulfur	0.7 [0.5]	0.5	1.0	0.5	1.0	0.5	1.1	0.5	mg/L	~
Dissolved Tellurium	<0.0002 [<0.0002]	0.0002	0.0014	0.0002	0.0014	0.0002	0.0014	0.0002	mg/L	~
Dissolved Thallium	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Thorium	<0.0001 [<0.0001]	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	mg/L	~
Dissolved Tin	0.0001 [0.0001]	0.0001	0.0002	0.0001	0.0002	0.0001	0.0003	0.0001	mg/L	~
Dissolved Titanium	0.0041 [0.0042]	0.0003	0.0060	0.0003	0.0052	0.0003	0.0051	0.0003	mg/L	~
Dissolved Tungsten	<0.0001 [<0.0001]	0.0001	0.0007	0.0001	0.0006	0.0001	0.0005	0.0001	mg/L	~
Dissolved Uranium	0.00007 [0.00007]	0.00001	0.00008	0.00001	0.00005	0.00001	0.00007	0.00001	mg/L	~
Dissolved Vanadium	0.0008 [0.0008]	0.0005	0.0011	0.0005	0.0009	0.0005	0.0010	0.0005	mg/L	~
Dissolved Yttrium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.004 [0.004]	0.001	0.005	0.001	0.006	0.001	0.006	0.001	mg/L	~
Dissolved Zirconium	0.0012 [0.0013]	0.0002	0.0016	0.0002	0.0012	0.0002	0.0014	0.0002	mg/L	~

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	6/12/2023 10:20 AM		6/12/2023 11:15 AM			
Lab ID	1891906		1891907			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.158	0.001	0.106	0.001	mg/L	~
Dissolved Antimony	<0.0001	0.0001	<0.0001	0.0001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 502339

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	6/12/2023 10:20 AM		6/12/2023 11:15 AM			
Lab ID	1891906		1891907			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Arsenic	0.0009	0.0001	0.0008	0.0001	mg/L	~
Dissolved Barium	0.0078	0.0001	0.0125	0.0001	mg/L	~
Dissolved Beryllium	<0.00002	0.00002	<0.00002	0.00002	mg/L	~
Dissolved Bismuth	0.00007	0.00005	0.00006	0.00005	mg/L	~
Dissolved Boron	0.002	0.002	0.002	0.002	mg/L	~
Dissolved Cadmium	0.000030	0.000005	0.000030	0.000005	mg/L	~
Dissolved Calcium	5.34	0.05	3.72	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0007	0.0001	0.0005	0.0001	mg/L	~
Dissolved Cobalt	0.0003	0.0001	0.0001	0.0001	mg/L	~
Dissolved Copper	0.0013	0.0002	0.0016	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.56	0.01	0.36	0.01	mg/L	~
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	0.00031	0.00005	0.00060	0.00005	mg/L	~
Dissolved Lithium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Magnesium	1.370	0.004	0.847	0.004	mg/L	~
Dissolved Manganese	0.1120	0.0001	0.0367	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Nickel	0.0008	0.0005	0.0006	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001	0.001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 502339

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	6/12/2023 10:20 AM		6/12/2023 11:15 AM			
Lab ID	1891906		1891907			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Phosphorus	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.08	0.05	<0.05	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	0.0003	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Scandium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Selenium	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Silicon	0.63	0.05	0.99	0.05	mg/L	~
Dissolved Silver	0.00004	0.00001	0.00005	0.00001	mg/L	~
Dissolved Sodium	0.36	0.05	0.40	0.05	mg/L	~
Dissolved Strontium	0.0093	0.0002	0.0062	0.0002	mg/L	~
Dissolved Sulfur	0.7	0.5	0.7	0.5	mg/L	~
Dissolved Tellurium	0.0010	0.0002	0.0006	0.0002	mg/L	~
Dissolved Thallium	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Tin	<0.0001	0.0001	0.0001	0.0001	mg/L	~
Dissolved Titanium	0.0033	0.0003	0.0016	0.0003	mg/L	~
Dissolved Tungsten	0.0003	0.0001	0.0003	0.0001	mg/L	~
Dissolved Uranium	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Vanadium	<0.0005	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.009	0.001	0.009	0.001	mg/L	~
Dissolved Zirconium	0.0005	0.0002	0.0002	0.0002	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 502339

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 04		WBR - S - 06			
Sample Date	6/12/2023 1:10 PM		6/12/2023 12:55 PM		6/12/2023 10:00 AM		6/12/2023 11:55 AM			
Lab ID	1891902		1891903		1891904		1891905			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.531 [0.50]	0.001	0.389	0.001	0.317	0.001	0.381	0.001	mg/L	0.075
Total Antimony	0.0003 [0.0002]	0.0001	0.0003	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.02
Total Arsenic	0.0007 [0.0007]	0.0001	0.0014	0.0001	0.0011	0.0001	0.0011	0.0001	mg/L	0.005
Total Barium	0.0114 [0.0113]	0.0001	0.0091	0.0001	0.0078	0.0001	0.0102	0.0001	mg/L	~
Total Beryllium	0.00003 [0.00002]	0.00002	0.00011	0.00002	0.00003	0.00002	0.00003	0.00002	mg/L	0.011
Total Bismuth	0.00005 [<0.00005]	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Total Boron	0.004 [0.004]	0.002	0.005	0.002	0.004	0.002	0.005	0.002	mg/L	0.2
Total Cadmium	0.000040 [0.000040]	0.000005	0.000136	0.000005	0.000060	0.000005	0.000060	0.000005	mg/L	0.0001
Total Calcium	14.90 [14.80]	0.05	16.10	0.05	14.20	0.05	18.30	0.05	mg/L	~
Total Cerium	0.001 [0.001]	0.001	0.002	0.001	0.001	0.001	0.001	0.001	mg/L	~
Total Cesium	0.00003 [0.00004]	0.00001	0.00002	0.00001	0.00001	0.00001	0.00002	0.00001	mg/L	~
Total Chromium	0.0013 [0.0015]	0.0001	0.0013	0.0001	0.0011	0.0001	0.0014	0.0001	mg/L	~
Total Cobalt	0.0003 [0.0003]	0.0001	0.0004	0.0001	0.0003	0.0001	0.0003	0.0001	mg/L	0.0009
Total Copper	0.0017 [0.0018]	0.0002	0.0026	0.0002	0.0017	0.0002	0.0028	0.0002	mg/L	0.001
Total Europium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.79 [0.8]	0.01	0.7	0.1	0.7	0.1	0.8	0.1	mg/L	0.3

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Sample Description	PC - 01		WBR - S - Ref		WBR - S - 04		WBR - S - 06			
Sample Date	6/12/2023 1:10 PM		6/12/2023 12:55 PM		6/12/2023 10:00 AM		6/12/2023 11:55 AM			
Lab ID	1891902		1891903		1891904		1891905			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Lanthanum	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00045 [0.00042]	0.00005	0.00063	0.00005	0.00047	0.00005	0.00057	0.00005	mg/L	0.001
Total Lithium	<0.001 [0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Magnesium	3.490 [3.490]	0.004	3.370	0.004	3.240	0.004	4.180	0.004	mg/L	~
Total Manganese	0.0592 [0.0590]	0.0001	0.0780	0.0001	0.0642	0.0001	0.0859	0.0001	mg/L	~
Total Molybdenum	<0.00005 [<0.00005]	0.00005	0.00265	0.00005	0.00046	0.00005	0.00032	0.00005	mg/L	0.04
Total Nickel	0.0013 [0.0014]	0.0005	0.0014	0.0005	0.0011	0.0005	0.0013	0.0005	mg/L	0.025
Total Niobium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.46 [0.49]	0.05	0.40	0.05	0.32	0.05	0.48	0.05	mg/L	~
Total Rhodium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	0.0018 [0.0019]	0.0002	0.0017	0.0002	0.0011	0.0002	0.0015	0.0002	mg/L	~
Total Scandium	0.001 [0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Selenium	<0.00005 [<0.00005]	0.00005	0.00142	0.00005	0.00037	0.00005	0.00008	0.00005	mg/L	0.1
Total Silicon	1.85 [1.94]	0.05	1.26	0.05	1.28	0.05	1.67	0.05	mg/L	~
Total Silver	0.00010 [0.00008]	0.00001	0.00006	0.00001	0.00006	0.00001	0.00006	0.00001	mg/L	0.0001
Total Sodium	1.32 [1.40]	0.05	1.13	0.05	1.32	0.05	1.86	0.05	mg/L	~
Total Strontium	0.0252 [0.0252]	0.0002	0.0245	0.0002	0.0226	0.0002	0.0285	0.0002	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 502339

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 04		WBR - S - 06			
Sample Date	6/12/2023 1:10 PM		6/12/2023 12:55 PM		6/12/2023 10:00 AM		6/12/2023 11:55 AM			
Lab ID	1891902		1891903		1891904		1891905			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Sulphur	1.0 [1.2]	0.5	1.1	0.5	1.3	0.5	1.4	0.5	mg/L	~
Total Tellurium	<0.0002 [<0.0002]	0.0002	0.0004	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Total Thallium	<0.00001 [<0.00001]	0.00001	0.00012	0.00001	0.00002	0.00001	<0.00001	0.00001	mg/L	0.0003
Total Thorium	0.0001 [0.0001]	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	mg/L	~
Total Tin	0.0001 [<0.0001]	0.0001	0.0001	0.0001	0.0002	0.0001	<0.0001	0.0001	mg/L	~
Total Titanium	0.0178 [0.0182]	0.0003	0.0120	0.0003	0.0103	0.0003	0.0124	0.0003	mg/L	~
Total Tungsten	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00009 [0.00009]	0.00001	0.00008	0.00001	0.00006	0.00001	0.00008	0.00001	mg/L	0.005
Total Vanadium	0.0015 [0.0016]	0.0005	0.0017	0.0005	0.0012	0.0005	0.0014	0.0005	mg/L	0.006
Total Yttrium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.005 [0.005]	0.001	0.005	0.001	0.005	0.001	0.007	0.001	mg/L	0.02
Total Zirconium	0.0013 [0.0013]	0.0002	0.0025	0.0002	0.0016	0.0002	0.0020	0.0002	mg/L	0.004

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	6/12/2023 10:20 AM		6/12/2023 11:15 AM			
Lab ID	1891906		1891907			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.224	0.001	0.131	0.001	mg/L	0.075
Total Antimony	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.02

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 502339

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	6/12/2023 10:20 AM		6/12/2023 11:15 AM			
Lab ID	1891906		1891907			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Arsenic	0.0009	0.0001	0.0008	0.0001	mg/L	0.005
Total Barium	0.0062	0.0001	0.0038	0.0001	mg/L	~
Total Beryllium	<0.00002	0.00002	<0.00002	0.00002	mg/L	0.011
Total Bismuth	0.00006	0.00005	<0.00005	0.00005	mg/L	~
Total Boron	0.002	0.002	<0.002	0.002	mg/L	0.2
Total Cadmium	0.000030	0.000005	0.000030	0.000005	mg/L	0.0001
Total Calcium	5.98	0.05	3.98	0.05	mg/L	~
Total Cerium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Cesium	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Total Chromium	0.0008	0.0001	0.0006	0.0001	mg/L	~
Total Cobalt	0.0004	0.0001	0.0001	0.0001	mg/L	0.0009
Total Copper	0.0024	0.0002	0.0010	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.6	0.1	0.41	0.01	mg/L	0.3
Total Lanthanum	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00040	0.00005	0.00085	0.00005	mg/L	0.001
Total Lithium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Magnesium	1.560	0.004	0.935	0.004	mg/L	~
Total Manganese	0.1310	0.0001	0.0404	0.0001	mg/L	~
Total Mercury	0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Total Molybdenum	<0.00005	0.00005	<0.00005	0.00005	mg/L	0.04
Total Nickel	0.0008	0.0005	<0.0005	0.0005	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 502339

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	6/12/2023 10:20 AM		6/12/2023 11:15 AM			
Lab ID	1891906		1891907			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Potassium	0.11	0.05	0.05	0.05	mg/L	~
Total Rhodium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	0.0004	0.0002	<0.0002	0.0002	mg/L	~
Total Scandium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Selenium	<0.00005	0.00005	<0.00005	0.00005	mg/L	0.1
Total Silicon	1.00	0.05	1.33	0.05	mg/L	~
Total Silver	0.00005	0.00001	0.00004	0.00001	mg/L	0.0001
Total Sodium	0.56	0.05	0.41	0.05	mg/L	~
Total Strontium	0.0103	0.0002	0.0066	0.0002	mg/L	~
Total Sulphur	0.9	0.5	1.0	0.5	mg/L	~
Total Tellurium	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Total Thallium	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0003
Total Thorium	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Total Tin	<0.0001	0.0001	0.0001	0.0001	mg/L	~
Total Titanium	0.0051	0.0003	0.0023	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00002	0.00001	<0.00001	0.00001	mg/L	0.005
Total Vanadium	0.0006	0.0005	<0.0005	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.010	0.001	0.007	0.001	mg/L	0.02
Total Zirconium	0.0006	0.0002	0.0003	0.0002	mg/L	0.004

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 502339

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 04		WBR - S - 06			
Sample Date	6/12/2023 1:10 PM		6/12/2023 12:55 PM		6/12/2023 10:00 AM		6/12/2023 11:55 AM			
Lab ID	1891902		1891903		1891904		1891905			
MethylMercury	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.18	0.02	0.25	0.02	0.19	0.02	0.25	0.02	ng/L	~

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 04		WBR - S - 06			
Sample Date	6/12/2023 1:10 PM		6/12/2023 12:55 PM		6/12/2023 10:00 AM		6/12/2023 11:55 AM			
Lab ID	1891902		1891903		1891904		1891905			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	100 [105]	10	110	10	105	10	140	10	mg/L	~
Total Suspended Solids	11.5 [11]	1	6.70	0.67	4.00	0.67	21.00	0.67	mg/L	~

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	6/12/2023 10:20 AM		6/12/2023 11:15 AM			
Lab ID	1891906		1891907			
Solids	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	90	10	100	10	mg/L	~
Total Suspended Solids	3.00	0.67	1.30	0.67	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 502339

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	502693
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	David Duciaume
Date Order Received:	6/14/2023	Analysis Started:	6/14/2023
Arrival Temperature:	15 °C	Analysis Completed:	6/26/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
MARLk	1893192	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	6/13/2023	11:45 AM
NDR.S-04b	1893193	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	6/13/2023	12:30 PM
JCRK-03	1893194	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	6/13/2023	1:45 PM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 502693

Method	Lab	Description	Reference
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 502693

WORK ORDER RESULTS

Sample Description	MARLk		NDR.S - 04b		JCRK - 03			
Sample Date	6/13/2023 11:45 AM		6/13/2023 12:30 PM		6/13/2023 1:45 PM			
Lab ID	1893192		1893193		1893194			
Anions	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	<0.2	0.2	1.3	0.2	3.9	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1 [<0.1]	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01 [<0.01]	0.01	<0.01	0.01	mg/L	~
Sulphate	<0.5	0.5	<0.5	0.5	1.3	0.5	mg/L	~

Sample Description	MARLk		NDR.S - 04b		JCRK - 03			
Sample Date	6/13/2023 11:45 AM		6/13/2023 12:30 PM		6/13/2023 1:45 PM			
Lab ID	1893192		1893193		1893194			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	5.77	N/A	7.08	N/A	7.43	N/A	pH	~
Field Temp	13.49	N/A	16.66	N/A	15.56	N/A	°C	~

Sample Description	MARLk		NDR.S - 04b		JCRK - 03			
Sample Date	6/13/2023 11:45 AM		6/13/2023 12:30 PM		6/13/2023 1:45 PM			
Lab ID	1893192		1893193		1893194			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	20	5	19	5	16	5	mg/L as CaCO3	~
Ammonia (as N)	0.049	0.005	0.039	0.005	0.039	0.005	mg/L	~
Conductivity	38	1	99	1	232	1	µS/cm	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 502693

Sample Description	MARLk		NDR.S - 04b		JCRK - 03			
Sample Date	6/13/2023 11:45 AM		6/13/2023 12:30 PM		6/13/2023 1:45 PM			
Lab ID	1893192		1893193		1893194			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Organic Carbon	27.1	0.4	26.3	0.4	19.6	0.4	mg/L	~
Free Cyanide	0.002	0.001	0.004	0.001	0.003	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	20	2	52	2	126	2	mg/L as CaCO3	~
pH	6.52	N/A	7.42	N/A	7.45	N/A	pH	~
Strong Acid Dissociable Cyanide	<0.002	0.002	0.004	0.002	<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	21.1	0.1	53.1	0.1	115.0	0.1	mg/L	~
Total Phosphorus (as P)	0.015	0.002	0.021	0.002	0.023	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.001	0.001	0.003	0.001	0.005	0.001	mg/L	~

Sample Description	MARLk		NDR.S - 04b		JCRK - 03			
Sample Date	6/13/2023 11:45 AM		6/13/2023 12:30 PM		6/13/2023 1:45 PM			
Lab ID	1893192		1893193		1893194			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	5.44	0.01	3.44	0.01	2.43	0.01	ng/L	200

Sample Description	MARLk		NDR.S - 04b		JCRK - 03			
Sample Date	6/13/2023 11:45 AM		6/13/2023 12:30 PM		6/13/2023 1:45 PM			
Lab ID	1893192		1893193		1893194			
Mercury by CV	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01 [<0.01]	0.01	<0.01	0.01	ug/L	0.2

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 502693

Sample Description	MARLk		NDR.S - 04b		JCRK - 03			
Sample Date	6/13/2023 11:45 AM		6/13/2023 12:30 PM		6/13/2023 1:45 PM			
Lab ID	1893192		1893193		1893194			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.141 [0.136]	0.001	0.055	0.001	0.029	0.001	mg/L	~

Sample Description	MARLk		NDR.S - 04b		JCRK - 03			
Sample Date	6/13/2023 11:45 AM		6/13/2023 12:30 PM		6/13/2023 1:45 PM			
Lab ID	1893192		1893193		1893194			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.173 [0.173]	0.001	0.075	0.001	0.041	0.001	mg/L	~
Dissolved Antimony	0.0002 [0.0002]	0.0001	0.0004	0.0001	0.0002	0.0001	mg/L	~
Dissolved Arsenic	0.0006 [0.0007]	0.0001	0.0009	0.0001	0.0009	0.0001	mg/L	~
Dissolved Barium	0.0157 [0.0157]	0.0001	0.0159	0.0001	0.0236	0.0001	mg/L	~
Dissolved Beryllium	<0.00002 [<0.00002]	0.00002	0.00005	0.00002	0.00002	0.00002	mg/L	~
Dissolved Bismuth	<0.00005 [<0.00005]	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Boron	0.003 [0.003]	0.002	0.005	0.002	0.008	0.002	mg/L	~
Dissolved Cadmium	0.000060 [0.000050]	0.000005	0.000050	0.000005	0.000040	0.000005	mg/L	~
Dissolved Calcium	6.09 [6.00]	0.05	15.10	0.05	33.4	0.5	mg/L	~
Dissolved Cerium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0008 [0.0007]	0.0001	0.0009	0.0001	0.0010	0.0001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 502693

Sample Description	MARLk		NDR.S - 04b		JCRK - 03			
Sample Date	6/13/2023 11:45 AM		6/13/2023 12:30 PM		6/13/2023 1:45 PM			
Lab ID	1893192		1893193		1893194			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Cobalt	0.0001 [0.0001]	0.0001	0.0002	0.0001	0.0001	0.0001	mg/L	~
Dissolved Copper	0.0020 [0.0020]	0.0002	0.0013	0.0002	0.0020	0.0002	mg/L	~
Dissolved Europium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.41 [0.41]	0.01	0.36	0.01	0.51	0.01	mg/L	~
Dissolved Lanthanum	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	0.00037 [0.00037]	0.00005	0.00024	0.00005	0.00011	0.00005	mg/L	~
Dissolved Lithium	<0.001 [<0.001]	0.001	<0.001	0.001	0.001	0.001	mg/L	~
Dissolved Magnesium	1.560 [1.540]	0.004	3.760	0.004	7.940	0.004	mg/L	~
Dissolved Manganese	0.0230 [0.0226]	0.0001	0.0797	0.0001	0.0938	0.0001	mg/L	~
Dissolved Mercury	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00009 [0.00007]	0.00005	0.00225	0.00005	0.00094	0.00005	mg/L	~
Dissolved Nickel	0.0007 [0.0007]	0.0005	0.0008	0.0005	0.0007	0.0005	mg/L	~
Dissolved Niobium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05 [<0.05]	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.19 [0.18]	0.05	0.28	0.05	0.84	0.05	mg/L	~
Dissolved Rhodium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 502693

Sample Description	MARLk	NDR.S - 04b	JCRK - 03				
Sample Date	6/13/2023 11:45 AM	6/13/2023 12:30 PM	6/13/2023 1:45 PM				
Lab ID	1893192	1893193	1893194				
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Rubidium	0.0008 [0.0008]	0.0002	0.0008	0.0002	0.0015	0.0002	mg/L	~
Dissolved Scandium	<0.001 [<0.001]	0.001	<0.001	0.001	0.002	0.001	mg/L	~
Dissolved Selenium	<0.00005 [<0.00005]	0.00005	0.00229	0.00005	0.00054	0.00005	mg/L	~
Dissolved Silicon	0.87 [0.87]	0.05	0.61	0.05	2.91	0.05	mg/L	~
Dissolved Silver	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Sodium	0.35 [0.34]	0.05	2.42	0.05	4.58	0.05	mg/L	~
Dissolved Strontium	0.0103 [0.0105]	0.0002	0.0238	0.0002	0.0629	0.0002	mg/L	~
Dissolved Sulfur	2.1 [2.1]	0.5	2.3	0.5	2.8	0.5	mg/L	~
Dissolved Tellurium	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Thallium	<0.00001 [<0.00001]	0.00001	0.00005	0.00001	0.00001	0.00001	mg/L	~
Dissolved Thorium	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Tin	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Titanium	0.0047 [0.0050]	0.0003	0.0026	0.0003	0.0024	0.0003	mg/L	~
Dissolved Tungsten	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Uranium	0.00005 [0.00005]	0.00001	0.00004	0.00001	0.00009	0.00001	mg/L	~
Dissolved Vanadium	0.0006 [0.0006]	0.0005	0.0007	0.0005	0.0007	0.0005	mg/L	~
Dissolved Yttrium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 502693

Sample Description	MARLk		NDR.S - 04b		JCRK - 03			
Sample Date	6/13/2023 11:45 AM		6/13/2023 12:30 PM		6/13/2023 1:45 PM			
Lab ID	1893192		1893193		1893194			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Zinc	0.010 [0.009]	0.001	0.004	0.001	0.001	0.001	mg/L	~
Dissolved Zirconium	0.0011 [0.0012]	0.0002	0.0010	0.0002	0.0012	0.0002	mg/L	~

Sample Description	MARLk		NDR.S - 04b		JCRK - 03			
Sample Date	6/13/2023 11:45 AM		6/13/2023 12:30 PM		6/13/2023 1:45 PM			
Lab ID	1893192		1893193		1893194			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.279 [0.252]	0.001	0.253	0.001	0.192	0.001	mg/L	0.075
Total Antimony	0.0005 [0.0005]	0.0001	0.0007	0.0001	0.0004	0.0001	mg/L	0.02
Total Arsenic	0.0006 [0.0006]	0.0001	0.0011	0.0001	0.0009	0.0001	mg/L	0.005
Total Barium	0.0042 [0.0041]	0.0001	0.0078	0.0001	0.0145	0.0001	mg/L	~
Total Beryllium	<0.00002 [<0.00002]	0.00002	0.00015	0.00002	0.00003	0.00002	mg/L	0.011
Total Bismuth	0.00006 [<0.00005]	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Total Boron	0.002 [0.003]	0.002	0.004	0.002	0.007	0.002	mg/L	0.2
Total Cadmium	0.000060 [0.000060]	0.000005	0.000151	0.000005	0.000040	0.000005	mg/L	0.0001
Total Calcium	6.14 [6.23]	0.05	15.00	0.05	32.3	0.5	mg/L	~
Total Cerium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Cesium	0.00001 [0.00001]	0.00001	0.00002	0.00001	0.00001	0.00001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 502693

Sample Description	MARLk		NDR.S - 04b		JCRK - 03			
Sample Date	6/13/2023 11:45 AM		6/13/2023 12:30 PM		6/13/2023 1:45 PM			
Lab ID	1893192		1893193		1893194			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Chromium	0.0012 [0.0012]	0.0001	0.0014	0.0001	0.0013	0.0001	mg/L	~
Total Cobalt	0.0001 [0.0002]	0.0001	0.0004	0.0001	0.0002	0.0001	mg/L	0.0009
Total Copper	0.0008 [0.0009]	0.0002	0.0011	0.0002	0.0013	0.0002	mg/L	0.001
Total Europium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.50 [0.50]	0.01	0.60	0.01	0.7	0.1	mg/L	0.3
Total Lanthanum	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00041 [0.00046]	0.00005	0.00055	0.00005	0.00024	0.00005	mg/L	0.001
Total Lithium	<0.001 [<0.001]	0.001	<0.001	0.001	0.002	0.001	mg/L	~
Total Magnesium	1.580 [1.610]	0.004	3.810	0.004	8.000	0.004	mg/L	~
Total Manganese	0.0250 [0.0252]	0.0001	0.0983	0.0001	0.1050	0.0001	mg/L	~
Total Molybdenum	0.00035 [0.00027]	0.00005	0.00202	0.00005	0.00079	0.00005	mg/L	0.04
Total Nickel	0.0008 [0.0008]	0.0005	0.0013	0.0005	0.0018	0.0005	mg/L	0.025
Total Niobium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.21 [0.21]	0.05	0.31	0.05	0.87	0.05	mg/L	~
Total Rhodium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	0.0010 [0.0009]	0.0002	0.0011	0.0002	0.0018	0.0002	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 502693

Sample Description	MARLk		NDR.S - 04b		JCRK - 03			
Sample Date	6/13/2023 11:45 AM		6/13/2023 12:30 PM		6/13/2023 1:45 PM			
Lab ID	1893192		1893193		1893194			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Scandium	<0.001 [<0.001]	0.001	<0.001	0.001	0.002	0.001	mg/L	~
Total Selenium	0.00015 [0.00008]	0.00005	0.00169	0.00005	0.00058	0.00005	mg/L	0.1
Total Silicon	1.51 [1.50]	0.05	1.25	0.05	3.68	0.05	mg/L	~
Total Silver	0.00016 [0.00016]	0.00001	0.00011	0.00001	0.00010	0.00001	mg/L	0.0001
Total Sodium	0.36 [0.36]	0.05	2.42	0.05	4.51	0.05	mg/L	~
Total Strontium	0.0106 [0.0108]	0.0002	0.0236	0.0002	0.0635	0.0002	mg/L	~
Total Sulphur	2.7 [3.1]	0.5	2.9	0.5	3.7	0.5	mg/L	~
Total Tellurium	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Total Thallium	<0.00001 [<0.00001]	0.00001	0.00012	0.00001	0.00002	0.00001	mg/L	0.0003
Total Thorium	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Total Tin	0.0005 [0.0006]	0.0001	0.0006	0.0001	0.0005	0.0001	mg/L	~
Total Titanium	0.0102 [0.0085]	0.0003	0.0084	0.0003	0.0080	0.0003	mg/L	~
Total Tungsten	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00006 [0.00006]	0.00001	0.00005	0.00001	0.00011	0.00001	mg/L	0.005
Total Vanadium	0.0008 [0.0008]	0.0005	0.0012	0.0005	0.0010	0.0005	mg/L	0.006
Total Yttrium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.007 [0.007]	0.001	0.004	0.001	0.003	0.001	mg/L	0.02

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Canada Nickel Company Inc.

Work Order Number: 502693

Sample Description	MARLk		NDR.S - 04b		JCRK - 03			
Sample Date	6/13/2023 11:45 AM		6/13/2023 12:30 PM		6/13/2023 1:45 PM			
Lab ID	1893192		1893193		1893194			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Zirconium	0.0012 [0.0012]	0.0002	0.0015	0.0002	0.0015	0.0002	mg/L	0.004

Sample Description	MARLk		NDR.S - 04b		JCRK - 03			
Sample Date	6/13/2023 11:45 AM		6/13/2023 12:30 PM		6/13/2023 1:45 PM			
Lab ID	1893192		1893193		1893194			
MethylMercury	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.20	0.02	0.23	0.02	0.28 [0.28]	0.02	ng/L	~

Sample Description	MARLk		NDR.S - 04b		JCRK - 03			
Sample Date	6/13/2023 11:45 AM		6/13/2023 12:30 PM		6/13/2023 1:45 PM			
Lab ID	1893192		1893193		1893194			
Solids	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	65	10	100	10	155	10	mg/L	~
Total Suspended Solids	3.70	0.67	8.67	0.67	14.70	0.67	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 502693

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

Reproduction of Report: Report shall not be reproduced, except in full, without the approval of Testmark Laboratories Ltd.

ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	503549
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	DD/ JP
Date Order Received:	6/21/2023	Analysis Started:	6/22/2023
Arrival Temperature:	17 °C	Analysis Completed:	6/30/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
NDR-S-02	1896030	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	6/21/2023	11:15 AM
JCRK-01	1896031	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	6/20/2023	10:38 AM
MATR-REF	1896032	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	6/20/2023	10:10 AM
MATR-01	1896033	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	6/21/2023	9:10 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C

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Canada Nickel Company Inc.

Work Order Number: 503549

Method	Lab	Description	Reference
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 503549

WORK ORDER RESULTS

Sample Description	NDR - S - 02		JCRK - 01		MATR - REF		MATR - 01			
Sample Date	6/21/2023 11:15 AM		6/20/2023 10:38 AM		6/20/2023 10:10 AM		6/21/2023 9:10 AM			
Lab ID	1896030		1896031		1896032		1896033			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	1.3	0.2	2.3	0.2	2.1	0.2	2.0	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	<0.5	0.5	3.7	0.5	3.1	0.5	3.5	0.5	mg/L	~

Sample Description	NDR - S - 02		JCRK - 01		MATR - REF		MATR - 01			
Sample Date	6/21/2023 11:15 AM		6/20/2023 10:38 AM		6/20/2023 10:10 AM		6/21/2023 9:10 AM			
Lab ID	1896030		1896031		1896032		1896033			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	7.33	N/A	7.59	N/A	7.2	N/A	7.62	N/A	pH	~
Field Temp	23.53	N/A	23.02	N/A	21.59	N/A	17.89	N/A	°C	~

Sample Description	NDR - S - 02		JCRK - 01		MATR - REF		MATR - 01			
Sample Date	6/21/2023 11:15 AM		6/20/2023 10:38 AM		6/20/2023 10:10 AM		6/21/2023 9:10 AM			
Lab ID	1896030		1896031		1896032		1896033			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	15	5	11	5	6	5	10	5	mg/L as CaCO3	~
Ammonia (as N)	0.043	0.005	0.020	0.005	0.034	0.005	0.018	0.005	mg/L	~
Conductivity	92	1	116	1	110	1	111	1	µS/cm	~
Dissolved Organic Carbon	24.4	0.4	12.0	0.4	10.6	0.4	10.4	0.4	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 503549

Sample Description	NDR - S - 02		JCRK - 01		MATR - REF		MATR - 01			
Sample Date	6/21/2023 11:15 AM		6/20/2023 10:38 AM		6/20/2023 10:10 AM		6/21/2023 9:10 AM			
Lab ID	1896030		1896031		1896032		1896033			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Free Cyanide			<0.001	0.001			<0.001	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	49	2	53	2	54	2	53	2	mg/L as CaCO3	~
pH	6.98	N/A	7.28	N/A	7.39	N/A	6.99	N/A	pH	~
Strong Acid Dissociable Cyanide			0.005 [0.005]	0.002			0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	51.8	0.1	53.2	0.1	53.3	0.1	54.0	0.1	mg/L	~
Total Phosphorus (as P)	0.020	0.002	0.010	0.002	0.008	0.002	0.004	0.002	mg/L	~
Weak Acid Dissociable Cyanide			0.003	0.001			<0.001	0.001	mg/L	~

Sample Description	JCRK - 01		MATR - 01			
Sample Date	6/20/2023 10:38 AM		6/21/2023 9:10 AM			
Lab ID	1896031		1896033			
Mercury (Trace)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	2.10	0.01	2.27	0.01	ng/L	200

Sample Description	JCRK - 01		MATR - 01			
Sample Date	6/20/2023 10:38 AM		6/21/2023 9:10 AM			
Lab ID	1896031		1896033			
Mercury by CV	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01	0.01	ug/L	0.2

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Work Order Number: 503549

Sample Description	NDR - S - 02		JCRK - 01		MATR - REF		MATR - 01			
Sample Date	6/21/2023 11:15 AM		6/20/2023 10:38 AM		6/20/2023 10:10 AM		6/21/2023 9:10 AM			
Lab ID	1896030		1896031		1896032		1896033			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.063	0.001	0.041	0.001	0.041	0.001	0.038 [0.038]	0.001	mg/L	~

Sample Description	NDR - S - 02		JCRK - 01		MATR - REF		MATR - 01			
Sample Date	6/21/2023 11:15 AM		6/20/2023 10:38 AM		6/20/2023 10:10 AM		6/21/2023 9:10 AM			
Lab ID	1896030		1896031		1896032		1896033			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.090	0.001	0.063	0.001	0.052	0.001	0.045 [0.046]	0.001	mg/L	~
Dissolved Antimony	<0.0001	0.0001	0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Arsenic	0.0007	0.0001	0.0005	0.0001	0.0001	0.0001	0.0004 [0.0004]	0.0001	mg/L	~
Dissolved Barium	0.0152	0.0001	0.0156	0.0001	0.0158	0.0001	0.0159 [0.0162]	0.0001	mg/L	~
Dissolved Beryllium	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	<0.00002 [<0.00002]	0.00002	mg/L	~
Dissolved Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	mg/L	~
Dissolved Boron	0.004	0.002	0.009	0.002	0.009	0.002	0.009 [0.010]	0.002	mg/L	~
Dissolved Cadmium	0.000020	0.000005	0.000020	0.000005	0.000010	0.000005	0.000007 [0.000007]	0.000005	mg/L	~
Dissolved Calcium	14.20	0.05	15.70	0.05	15.80	0.05	15.50 [15.70]	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Chromium	0.0010	0.0001	0.0008	0.0001	0.0008	0.0001	0.0007 [0.0007]	0.0001	mg/L	~

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Work Order Number: 503549

Sample Description	NDR - S - 02		JCRK - 01		MATR - REF		MATR - 01			
Sample Date	6/21/2023 11:15 AM		6/20/2023 10:38 AM		6/20/2023 10:10 AM		6/21/2023 9:10 AM			
Lab ID	1896030		1896031		1896032		1896033			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Cobalt	0.0003	0.0001	0.0002	0.0001	<0.0001	0.0001	0.0002 [0.0002]	0.0001	mg/L	~
Dissolved Copper	0.0016	0.0002	0.0018	0.0002	0.0016	0.0002	0.0013 [0.0012]	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Iron	0.40	0.01	0.28	0.01	0.28	0.01	0.28 [0.28]	0.01	mg/L	~
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Lead	0.00013	0.00005	0.00009	0.00005	0.00010	0.00005	0.00006 [0.00006]	0.00005	mg/L	~
Dissolved Lithium	0.001	0.001	0.001	0.001	<0.001	0.001	<0.001 [0.001]	0.001	mg/L	~
Dissolved Magnesium	3.600	0.004	3.100	0.004	3.170	0.004	3.300 [3.300]	0.004	mg/L	~
Dissolved Manganese	0.0779	0.0001	0.0039	0.0001	0.0032	0.0001	0.0024 [0.0024]	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00025	0.00005	0.00020	0.00005	0.00017	0.00005	0.00017 [0.00015]	0.00005	mg/L	~
Dissolved Nickel	0.0014	0.0005	0.0014	0.0005	0.0014	0.0005	0.0005 [0.0005]	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05 [<0.05]	0.05	mg/L	~
Dissolved Potassium	0.36	0.05	0.58	0.05	0.64	0.05	0.50 [0.51]	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~

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Sample Date	6/21/2023 11:15 AM		6/20/2023 10:38 AM		6/20/2023 10:10 AM		6/21/2023 9:10 AM			
Lab ID	1896030		1896031		1896032		1896033			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Rubidium	0.0008	0.0002	0.0012	0.0002	0.0012	0.0002	0.0011 [0.0011]	0.0002	mg/L	~
Dissolved Scandium	<0.001	0.001	0.001	0.001	0.001	0.001	0.001 [0.001]	0.001	mg/L	~
Dissolved Selenium	0.00014	0.00005	0.00009	0.00005	0.00008	0.00005	0.00020 [0.00012]	0.00005	mg/L	~
Dissolved Silicon	0.83	0.05	2.73	0.05	2.33	0.05	1.95 [2.01]	0.05	mg/L	~
Dissolved Silver	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	0.00002 [0.00002]	0.00001	mg/L	~
Dissolved Sodium	1.44	0.05	2.19	0.05	2.09	0.05	2.08 [2.31]	0.05	mg/L	~
Dissolved Strontium	0.0216	0.0002	0.0208	0.0002	0.0198	0.0002	0.0199 [0.0201]	0.0002	mg/L	~
Dissolved Sulfur	3.0	0.5	4.2	0.5	4.3	0.5	4.2 [4.4]	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	mg/L	~
Dissolved Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Tin	0.0003	0.0001	0.0003	0.0001	0.0004	0.0001	0.0003 [0.0003]	0.0001	mg/L	~
Dissolved Titanium	0.0031	0.0003	0.0020	0.0003	0.0018	0.0003	0.0017 [0.0017]	0.0003	mg/L	~
Dissolved Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Uranium	0.00005	0.00001	0.00007	0.00001	0.00007	0.00001	0.00007 [0.00007]	0.00001	mg/L	~
Dissolved Vanadium	0.0008	0.0005	0.0005	0.0005	0.0005	0.0005	<0.0005 [<0.0005]	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~

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Sample Date	6/21/2023 11:15 AM		6/20/2023 10:38 AM		6/20/2023 10:10 AM		6/21/2023 9:10 AM			
Lab ID	1896030		1896031		1896032		1896033			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Zinc	0.005	0.001	0.004	0.001	0.004	0.001	0.003 [0.003]	0.001	mg/L	~
Dissolved Zirconium	0.0008	0.0002	0.0005	0.0002	0.0004	0.0002	0.0004 [0.0004]	0.0002	mg/L	~

Sample Description	NDR - S - 02		JCRK - 01		MATR - REF		MATR - 01			
Sample Date	6/21/2023 11:15 AM		6/20/2023 10:38 AM		6/20/2023 10:10 AM		6/21/2023 9:10 AM			
Lab ID	1896030		1896031		1896032		1896033			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.422	0.001	0.190	0.001	0.155	0.001	0.140 [0.129]	0.001	mg/L	0.075
Total Antimony	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	0.02
Total Arsenic	0.0006	0.0001	0.0006	0.0001	0.0003	0.0001	0.0005 [0.0005]	0.0001	mg/L	0.005
Total Barium	0.0095	0.0001	0.0071	0.0001	0.0067	0.0001	0.0065 [0.0067]	0.0001	mg/L	~
Total Beryllium	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	<0.00002 [<0.00002]	0.00002	mg/L	0.011
Total Bismuth	0.00007	0.00005	0.00011	0.00005	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	mg/L	~
Total Boron	0.004	0.002	0.008	0.002	0.009	0.002	0.010 [0.009]	0.002	mg/L	0.2
Total Cadmium	0.000030	0.000005	0.000030	0.000005	0.000020	0.000005	0.000010 [0.000010]	0.000005	mg/L	0.0001
Total Calcium	15.10	0.05	15.60	0.05	15.20	0.05	15.50 [15.60]	0.05	mg/L	~
Total Cerium	0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Cesium	0.00005	0.00001	0.00002	0.00001	0.00002	0.00001	0.00002 [0.00001]	0.00001	mg/L	~

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Sample Description	NDR - S - 02		JCRK - 01		MATR - REF		MATR - 01			
Sample Date	6/21/2023 11:15 AM		6/20/2023 10:38 AM		6/20/2023 10:10 AM		6/21/2023 9:10 AM			
Lab ID	1896030		1896031		1896032		1896033			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Chromium	0.0019	0.0001	0.0012	0.0001	0.0013	0.0001	0.0009 [0.0011]	0.0001	mg/L	~
Total Cobalt	0.0003	0.0001	0.0001	0.0001	<0.0001	0.0001	0.0001 [<0.0001]	0.0001	mg/L	0.0009
Total Copper	0.0014	0.0002	0.0021	0.0002	0.0019	0.0002	0.0018 [0.0018]	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Iron	0.7	0.1	0.49	0.01	0.33	0.01	0.32 [0.32]	0.01	mg/L	0.3
Total Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Lead	0.00556	0.00005	0.00032	0.00005	0.00026	0.00005	0.00013 [0.00013]	0.00005	mg/L	0.001
Total Lithium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Magnesium	3.290	0.004	3.160	0.004	3.140	0.004	3.210 [3.300]	0.004	mg/L	~
Total Manganese	0.0999	0.0001	0.0136	0.0001	0.0132	0.0001	0.0167 [0.0174]	0.0001	mg/L	~
Total Mercury	<0.0001	0.0001			<0.0001	0.0001			mg/L	0.0002
Total Molybdenum	0.00022	0.00005	0.00015	0.00005	0.00021	0.00005	0.00013 [0.00026]	0.00005	mg/L	0.04
Total Nickel	0.0015	0.0005	0.0013	0.0005	0.0014	0.0005	0.0007 [0.0006]	0.0005	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Potassium	0.38	0.05	0.65	0.05	0.72	0.05	0.47 [0.53]	0.05	mg/L	~
Total Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~

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Lab ID	1896030		1896031		1896032		1896033			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Rubidium	0.0013	0.0002	0.0013	0.0002	0.0014	0.0002	0.0012 [0.0012]	0.0002	mg/L	~
Total Scandium	<0.001	0.001	0.001	0.001	0.001	0.001	0.001 [0.001]	0.001	mg/L	~
Total Selenium	0.00014	0.00005	0.00010	0.00005	0.00009	0.00005	0.00018 [<0.00005]	0.00005	mg/L	0.1
Total Silicon	1.30	0.05	2.50	0.05	2.50	0.05	2.45 [2.57]	0.05	mg/L	~
Total Silver	0.00012	0.00001	0.00008	0.00001	0.00007	0.00001	0.00005 [0.00005]	0.00001	mg/L	0.0001
Total Sodium	1.53	0.05	2.1	0.5	2.02	0.05	2.11 [2.12]	0.05	mg/L	~
Total Strontium	0.0205	0.0002	0.020	0.002	0.0188	0.0002	0.0191 [0.0194]	0.0002	mg/L	~
Total Sulphur	1.5	0.5	2.5	0.5	2.4	0.5	2.6 [2.9]	0.5	mg/L	~
Total Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	mg/L	~
Total Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	0.0003
Total Thorium	0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Total Tin	0.0006	0.0001	0.0005	0.0001	0.0007	0.0001	0.0004 [0.0005]	0.0001	mg/L	~
Total Titanium	0.0214	0.0003	0.0087	0.0003	0.0072	0.0003	0.0066 [0.0065]	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	0.03
Total Uranium	0.00006	0.00001	0.00007	0.00001	0.00007	0.00001	0.00007 [0.00007]	0.00001	mg/L	0.005
Total Vanadium	0.0015	0.0005	0.0008	0.0005	0.0007	0.0005	0.0007 [0.0007]	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~

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Sample Date	6/21/2023 11:15 AM		6/20/2023 10:38 AM		6/20/2023 10:10 AM		6/21/2023 9:10 AM			
Lab ID	1896030		1896031		1896032		1896033			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Zinc	0.006	0.001	0.008	0.001	0.007	0.001	0.003 [0.002]	0.001	mg/L	0.02
Total Zirconium	0.0017	0.0002	0.0009	0.0002	0.0008	0.0002	0.0007 [0.0007]	0.0002	mg/L	0.004

Sample Description	JCRK - 01		MATR - 01			
Sample Date	6/20/2023 10:38 AM		6/21/2023 9:10 AM			
Lab ID	1896031		1896033			
MethylMercury	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.14	0.02	0.16	0.02	ng/L	~

Sample Description	NDR - S - 02		JCRK - 01		MATR - REF		MATR - 01			
Sample Date	6/21/2023 11:15 AM		6/20/2023 10:38 AM		6/20/2023 10:10 AM		6/21/2023 9:10 AM			
Lab ID	1896030		1896031		1896032		1896033			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	90	10	80	10	65	10	95	10	mg/L	~
Total Suspended Solids	19.30	0.67	4.30	0.67	3.00	0.67	3.30	0.67	mg/L	~

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LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

Reproduction of Report: Report shall not be reproduced, except in full, without the approval of Testmark Laboratories Ltd.

ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	503673
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation:	PWQO
		Project #:	Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	Adam Gauthier & Jacques Picotte
Date Order Received:	6/22/2023	Analysis Started:	6/23/2023
Arrival Temperature:	28 °C	Analysis Completed:	7/13/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
BS-SW-01	1896405	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	6/22/2023	11:20 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237

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Canada Nickel Company Inc.

Work Order Number: 503673

Method	Lab	Description	Reference
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 503673

WORK ORDER RESULTS

Sample Description	BS - SW - 01
Sample Date	6/22/2023 11:20 AM
Lab ID	1896405

Anions	Result	MDL	Units	Criteria: PWQO
Chloride	0.6	0.2	mg/L	~
Fluoride	0.06	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	mg/L	~
Sulphate	<0.5	0.5	mg/L	~

Sample Description	BS - SW - 01
Sample Date	6/22/2023 11:20 AM
Lab ID	1896405

Field Parameters	Result	MDL	Units	Criteria: PWQO
Field pH	5.02	N/A	pH	~
Field Temp	19.23	N/A	°C	~

Sample Description	BS - SW - 01
Sample Date	6/22/2023 11:20 AM
Lab ID	1896405

General Chemistry	Result	MDL	Units	Criteria: PWQO
Acidity	27	5	mg/L as CaCO3	~
Ammonia (as N)	0.06	0.01	mg/L	~
Conductivity	35	1	µS/cm	~
Dissolved Organic Carbon	38.8	0.8	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 503673

Sample Description	BS - SW - 01			
Sample Date	6/22/2023 11:20 AM			
Lab ID	1896405			
General Chemistry	**Result**	**MDL**	**Units**	**Criteria: PWQO**
Free Cyanide	<0.001	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	14	2	mg/L as CaCO3	~
pH	5.64	N/A	pH	~
Strong Acid Dissociable Cyanide	<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	19.8	0.1	mg/L	~
Total Phosphorus (as P)	0.025	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.004	0.001	mg/L	~

Sample Description	BS - SW - 01			
Sample Date	6/22/2023 11:20 AM			
Lab ID	1896405			
Mercury (Trace)	**Result**	**MDL**	**Units**	**Criteria: PWQO**
Total Mercury	2.12	0.01	ng/L	200

Sample Description	BS - SW - 01			
Sample Date	6/22/2023 11:20 AM			
Lab ID	1896405			
Mercury by CV	**Result**	**MDL**	**Units**	**Criteria: PWQO**
Mercury	<0.01	0.01	ug/L	0.2

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Canada Nickel Company Inc.

Work Order Number: 503673

Sample Description	BS - SW - 01			
Sample Date	6/22/2023 11:20 AM			
Lab ID	1896405			
Metals (Dissolved - 0.2um)	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.100 [0.100]	0.001	mg/L	~

Sample Description	BS - SW - 01			
Sample Date	6/22/2023 11:20 AM			
Lab ID	1896405			
Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.107 [0.103]	0.001	mg/L	~
Dissolved Antimony	0.0002 [0.0002]	0.0001	mg/L	~
Dissolved Arsenic	0.0007 [0.0006]	0.0001	mg/L	~
Dissolved Barium	0.0138 [0.0137]	0.0001	mg/L	~
Dissolved Beryllium	<0.00002 [<0.00002]	0.00002	mg/L	~
Dissolved Bismuth	0.00016 [0.00012]	0.00005	mg/L	~
Dissolved Boron	<0.002 [<0.002]	0.002	mg/L	~
Dissolved Cadmium	0.000030 [0.000030]	0.000005	mg/L	~
Dissolved Calcium	4.90 [5.05]	0.05	mg/L	~
Dissolved Cerium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Cesium	0.00003 [0.00003]	0.00001	mg/L	~
Dissolved Chromium	0.0014 [0.0014]	0.0001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 503673

Sample Description	BS - SW - 01
Sample Date	6/22/2023 11:20 AM
Lab ID	1896405

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Cobalt	0.0002 [0.0002]	0.0001	mg/L	~
Dissolved Copper	0.0019 [0.0021]	0.0002	mg/L	~
Dissolved Europium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Gallium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Iron	0.65 [0.64]	0.01	mg/L	~
Dissolved Lanthanum	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Lead	0.00039 [0.00037]	0.00005	mg/L	~
Dissolved Lithium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Magnesium	1.37 [1.380]	0.04	mg/L	~
Dissolved Manganese	0.0493 [0.0481]	0.0001	mg/L	~
Dissolved Mercury	<0.0001 [<0.0001]	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00033 [0.00019]	0.00005	mg/L	~
Dissolved Nickel	0.0023 [0.0021]	0.0005	mg/L	~
Dissolved Niobium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Phosphorus	0.05 [<0.05]	0.05	mg/L	~
Dissolved Potassium	0.97 [0.95]	0.05	mg/L	~
Dissolved Rhodium	<0.001 [<0.001]	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 503673

Sample Description	BS - SW - 01
Sample Date	6/22/2023 11:20 AM
Lab ID	1896405

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Rubidium	0.0048 [0.0047]	0.0002	mg/L	~
Dissolved Scandium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Selenium	0.00010 [0.00008]	0.00005	mg/L	~
Dissolved Silicon	1.13 [1.13]	0.05	mg/L	~
Dissolved Silver	0.00001 [0.00001]	0.00001	mg/L	~
Dissolved Sodium	0.37 [0.36]	0.05	mg/L	~
Dissolved Strontium	0.0105 [0.0104]	0.0002	mg/L	~
Dissolved Sulfur	<0.5 [<0.5]	0.5	mg/L	~
Dissolved Tellurium	0.0002 [0.0002]	0.0002	mg/L	~
Dissolved Thallium	0.00003 [0.00003]	0.00001	mg/L	~
Dissolved Thorium	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Tin	0.0006 [0.0005]	0.0001	mg/L	~
Dissolved Titanium	0.0034 [0.0032]	0.0003	mg/L	~
Dissolved Tungsten	0.0002 [0.0001]	0.0001	mg/L	~
Dissolved Uranium	0.00002 [0.00002]	0.00001	mg/L	~
Dissolved Vanadium	0.0006 [0.0005]	0.0005	mg/L	~
Dissolved Yttrium	<0.001 [<0.001]	0.001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 503673

Sample Description	BS - SW - 01
Sample Date	6/22/2023 11:20 AM
Lab ID	1896405

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Zinc	0.013 [0.013]	0.001	mg/L	~
Dissolved Zirconium	0.0006 [0.0006]	0.0002	mg/L	~

Sample Description	BS - SW - 01
Sample Date	6/22/2023 11:20 AM
Lab ID	1896405

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.147 [0.142]	0.001	mg/L	0.075
Total Antimony	0.0002 [0.0002]	0.0001	mg/L	0.02
Total Arsenic	0.0007 [0.0008]	0.0001	mg/L	0.005
Total Barium	0.0049 [0.0047]	0.0001	mg/L	~
Total Beryllium	<0.00002 [<0.00002]	0.00002	mg/L	0.011
Total Bismuth	0.00008 [0.00008]	0.00005	mg/L	~
Total Boron	<0.002 [<0.002]	0.002	mg/L	0.2
Total Cadmium	0.000030 [0.000040]	0.000005	mg/L	0.0001
Total Calcium	5.17 [5.31]	0.05	mg/L	~
Total Cerium	<0.001 [<0.001]	0.001	mg/L	~
Total Cesium	0.00004 [0.00004]	0.00001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 503673

Sample Description	BS - SW - 01
Sample Date	6/22/2023 11:20 AM
Lab ID	1896405

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Chromium	0.0010 [0.0009]	0.0001	mg/L	~
Total Cobalt	0.0003 [0.0003]	0.0001	mg/L	0.0009
Total Copper	0.0010 [0.0009]	0.0002	mg/L	0.001
Total Europium	<0.001 [<0.001]	0.001	mg/L	~
Total Gallium	<0.001 [<0.001]	0.001	mg/L	~
Total Iron	0.8 [0.84]	0.1	mg/L	0.3
Total Lanthanum	<0.001 [<0.001]	0.001	mg/L	~
Total Lead	0.00044 [0.00047]	0.00005	mg/L	0.001
Total Lithium	<0.001 [<0.001]	0.001	mg/L	~
Total Magnesium	1.460 [1.520]	0.004	mg/L	~
Total Manganese	0.0614 [0.0639]	0.0001	mg/L	~
Total Molybdenum	0.00020 [0.00017]	0.00005	mg/L	0.04
Total Nickel	0.0029 [0.0030]	0.0005	mg/L	0.025
Total Niobium	<0.001 [<0.001]	0.001	mg/L	~
Total Potassium	1.17 [1.17]	0.05	mg/L	~
Total Rhodium	<0.001 [<0.001]	0.001	mg/L	~
Total Rubidium	0.0057 [0.0059]	0.0002	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 503673

Sample Description	BS - SW - 01
Sample Date	6/22/2023 11:20 AM
Lab ID	1896405

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Scandium	<0.001 [<0.001]	0.001	mg/L	~
Total Selenium	0.00010 [<0.00005]	0.00005	mg/L	0.1
Total Silicon	1.15 [1.19]	0.05	mg/L	~
Total Silver	<0.00001 [<0.00001]	0.00001	mg/L	0.0001
Total Sodium	0.41 [0.41]	0.05	mg/L	~
Total Strontium	0.0108 [0.0113]	0.0002	mg/L	~
Total Sulphur	<0.5 [<0.5]	0.5	mg/L	~
Total Tellurium	<0.0002 [<0.0002]	0.0002	mg/L	~
Total Thallium	0.00004 [0.00004]	0.00001	mg/L	0.0003
Total Thorium	<0.0001 [<0.0001]	0.0001	mg/L	~
Total Tin	0.0009 [0.0007]	0.0001	mg/L	~
Total Titanium	0.0049 [0.0052]	0.0003	mg/L	~
Total Tungsten	<0.0001 [<0.0001]	0.0001	mg/L	0.03
Total Uranium	0.00002 [0.00002]	0.00001	mg/L	0.005
Total Vanadium	<0.0005 [<0.0005]	0.0005	mg/L	0.006
Total Yttrium	<0.001 [<0.001]	0.001	mg/L	~
Total Zinc	0.009 [0.009]	0.001	mg/L	0.02

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 503673

Sample Description	BS - SW - 01			
Sample Date	6/22/2023 11:20 AM			
Lab ID	1896405			
Metals (Total)	**Result**	**MDL**	**Units**	**Criteria: PWQO**
Total Zirconium	0.0005 [0.0006]	0.0002	mg/L	0.004

Sample Description	BS - SW - 01			
Sample Date	6/22/2023 11:20 AM			
Lab ID	1896405			
MethylMercury	**Result**	**MDL**	**Units**	**Criteria: PWQO**
Methyl mercury	0.19	0.02	ng/L	~

Sample Description	BS - SW - 01			
Sample Date	6/22/2023 11:20 AM			
Lab ID	1896405			
Solids	**Result**	**MDL**	**Units**	**Criteria: PWQO**
Total Dissolved Solids	80	10	mg/L	~
Total Suspended Solids	8.5	1	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 503673

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	504499
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	AG, JP
Date Order Received:	6/30/2023	Analysis Started:	7/4/2023
Arrival Temperature:	10 °C	Analysis Completed:	7/13/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
PRSLk	1899326	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	6/29/2023	9:00 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 504499

Method	Lab	Description	Reference
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 504499

WORK ORDER RESULTS

Sample Description	PRSLk
Sample Date	6/29/2023 9:00 AM
Lab ID	1899326

Anions	Result	MDL	Units	Criteria: PWQO
Chloride	0.2	0.2	mg/L	~
Fluoride	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1 [<0.1]	0.1	mg/L	~
Nitrite (as N)	<0.01 [<0.01]	0.01	mg/L	~
Sulphate	0.9	0.5	mg/L	~

Sample Description	PRSLk
Sample Date	6/29/2023 9:00 AM
Lab ID	1899326

Field Parameters	Result	MDL	Units	Criteria: PWQO
Field pH	6.18	N/A	pH	~
Field Temp	19.31	N/A	°C	~

Sample Description	PRSLk
Sample Date	6/29/2023 9:00 AM
Lab ID	1899326

General Chemistry	Result	MDL	Units	Criteria: PWQO
Acidity	7	5	mg/L as CaCO3	~
Ammonia (as N)	0.059 [0.060]	0.005	mg/L	~
Conductivity	96	1	µS/cm	~

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Canada Nickel Company Inc.

Work Order Number: 504499

Sample Description	PRSLk
Sample Date	6/29/2023 9:00 AM
Lab ID	1899326

General Chemistry	Result	MDL	Units	Criteria: PWQO
Dissolved Organic Carbon	21.1	0.4	mg/L	~
Free Cyanide	<0.001	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	49	2	mg/L as CaCO3	~
pH	7.23	N/A	pH	~
Strong Acid Dissociable Cyanide	0.004	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	35.1	0.1	mg/L	~
Total Phosphorus (as P)	<0.002	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.005	0.001	mg/L	~

Sample Description	PRSLk
Sample Date	6/29/2023 9:00 AM
Lab ID	1899326

Mercury (Trace)	Result	MDL	Units	Criteria: PWQO
Total Mercury	4.78	0.01	ng/L	200

Sample Description	PRSLk
Sample Date	6/29/2023 9:00 AM
Lab ID	1899326

Mercury by CV	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	ug/L	0.2

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 504499

Sample Description	PRSLk
Sample Date	6/29/2023 9:00 AM
Lab ID	1899326

Metals (Dissolved - 0.2um)	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.012	0.001	mg/L	~

Sample Description	PRSLk
Sample Date	6/29/2023 9:00 AM
Lab ID	1899326

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.131	0.001	mg/L	~
Dissolved Antimony	<0.0001	0.0001	mg/L	~
Dissolved Arsenic	0.0005	0.0001	mg/L	~
Dissolved Barium	0.0099	0.0001	mg/L	~
Dissolved Beryllium	<0.00002	0.00002	mg/L	~
Dissolved Bismuth	<0.00005	0.00005	mg/L	~
Dissolved Boron	0.005	0.002	mg/L	~
Dissolved Cadmium	0.000010	0.000005	mg/L	~
Dissolved Calcium	15.10	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0032	0.0001	mg/L	~
Dissolved Cobalt	<0.0001	0.0001	mg/L	~
Dissolved Copper	0.0014	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	mg/L	~
Dissolved Iron	0.33	0.01	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 504499

Sample Description	PRSLk
Sample Date	6/29/2023 9:00 AM
Lab ID	1899326

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Lanthanum	<0.001	0.001	mg/L	~
Dissolved Lead	0.00014	0.00005	mg/L	~
Dissolved Lithium	<0.001	0.001	mg/L	~
Dissolved Magnesium	3.560	0.004	mg/L	~
Dissolved Manganese	0.0144	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	<0.00005	0.00005	mg/L	~
Dissolved Nickel	0.0009	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	mg/L	~
Dissolved Potassium	0.43	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	mg/L	~
Dissolved Rubidium	0.0010	0.0002	mg/L	~
Dissolved Scandium	0.001	0.001	mg/L	~
Dissolved Selenium	<0.00005	0.00005	mg/L	~
Dissolved Silicon	1.59	0.05	mg/L	~
Dissolved Silver	<0.00001	0.00001	mg/L	~
Dissolved Sodium	1.78	0.05	mg/L	~
Dissolved Strontium	0.0312	0.0002	mg/L	~
Dissolved Sulfur	1.2	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	mg/L	~
Dissolved Thallium	<0.00001	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	mg/L	~
Dissolved Tin	<0.0001	0.0001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 504499

Sample Description	PRSLk
Sample Date	6/29/2023 9:00 AM
Lab ID	1899326

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Titanium	0.0018	0.0003	mg/L	~
Dissolved Tungsten	<0.0001	0.0001	mg/L	~
Dissolved Uranium	0.00005	0.00001	mg/L	~
Dissolved Vanadium	0.0005	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	mg/L	~
Dissolved Zinc	0.011	0.001	mg/L	~
Dissolved Zirconium	0.0005	0.0002	mg/L	~

Sample Description	PRSLk
Sample Date	6/29/2023 9:00 AM
Lab ID	1899326

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.130	0.001	mg/L	0.075
Total Antimony	<0.0001	0.0001	mg/L	0.02
Total Arsenic	0.0004	0.0001	mg/L	0.005
Total Barium	0.0081	0.0001	mg/L	~
Total Beryllium	<0.00002	0.00002	mg/L	0.011
Total Bismuth	<0.00005	0.00005	mg/L	~
Total Boron	0.004	0.002	mg/L	0.2
Total Cadmium	0.000020	0.000005	mg/L	0.0001
Total Calcium	14.80	0.05	mg/L	~
Total Cerium	<0.001	0.001	mg/L	~
Total Cesium	<0.00001	0.00001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 504499

Sample Description	PRSLk
Sample Date	6/29/2023 9:00 AM
Lab ID	1899326

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Chromium	0.0020	0.0001	mg/L	~
Total Cobalt	<0.0001	0.0001	mg/L	0.0009
Total Copper	0.0041	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	mg/L	~
Total Gallium	<0.001	0.001	mg/L	~
Total Iron	0.35	0.01	mg/L	0.3
Total Lanthanum	<0.001	0.001	mg/L	~
Total Lead	0.00009	0.00005	mg/L	0.001
Total Lithium	<0.001	0.001	mg/L	~
Total Magnesium	3.540	0.004	mg/L	~
Total Manganese	0.0158	0.0001	mg/L	~
Total Molybdenum	<0.00005	0.00005	mg/L	0.04
Total Nickel	0.0006	0.0005	mg/L	0.025
Total Niobium	<0.001	0.001	mg/L	~
Total Potassium	0.42	0.05	mg/L	~
Total Rhodium	<0.001	0.001	mg/L	~
Total Rubidium	0.0009	0.0002	mg/L	~
Total Scandium	0.001	0.001	mg/L	~
Total Selenium	0.00016	0.00005	mg/L	0.1
Total Silicon	1.71	0.05	mg/L	~
Total Silver	0.00007	0.00001	mg/L	0.0001
Total Sodium	1.81	0.05	mg/L	~
Total Strontium	0.0300	0.0002	mg/L	~
Total Sulphur	1.6	0.5	mg/L	~

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Work Order Number: 504499

Sample Description	PRSLk
Sample Date	6/29/2023 9:00 AM
Lab ID	1899326

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Tellurium	<0.0002	0.0002	mg/L	~
Total Thallium	<0.00001	0.00001	mg/L	0.0003
Total Thorium	<0.0001	0.0001	mg/L	~
Total Tin	0.0003	0.0001	mg/L	~
Total Titanium	0.0029	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00007	0.00001	mg/L	0.005
Total Vanadium	0.0005	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	mg/L	~
Total Zinc	0.013	0.001	mg/L	0.02
Total Zirconium	0.0007	0.0002	mg/L	0.004

Sample Description	PRSLk
Sample Date	6/29/2023 9:00 AM
Lab ID	1899326

MethylMercury	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.07	0.02	ng/L	~

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Canada Nickel Company Inc.

Work Order Number: 504499

Sample Description	PRSLk
Sample Date	6/29/2023 9:00 AM
Lab ID	1899326

Solids	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	100	10	mg/L	~
Total Suspended Solids	1.70	0.67	mg/L	~

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	504663
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	DD, DA
Date Order Received:	7/4/2023	Analysis Started:	7/4/2023
Arrival Temperature:	27 °C	Analysis Completed:	7/13/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
MARLk	1899885	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	7/4/2023	10:25 AM
NDR-S-06	1899886	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	7/4/2023	12:00 PM
JC-S-01	1899887	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	7/4/2023	11:00 AM
JCRK-02	1899888	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	7/4/2023	11:30 AM
SWDup	1899889	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	7/4/2023	

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B

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Canada Nickel Company Inc.

Work Order Number: 504663

Method	Lab	Description	Reference
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 504663

WORK ORDER RESULTS

Sample Description	MARLk		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	7/4/2023 10:25 AM		7/4/2023 12:00 PM		7/4/2023 11:00 AM		7/4/2023 11:30 AM			
Lab ID	1899885		1899886		1899887		1899888			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	<0.2 [<0.2]	0.2	1.7	0.2	10.9	0.2	5.1	0.2	mg/L	~
Fluoride	<0.05 [<0.05]	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	<0.5 [<0.5]	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	mg/L	~

Sample Description	SWDup			
Sample Date	7/4/2023			
Lab ID	1899889			
Anions	Result	MDL	Units	Criteria: PWQO
Chloride	<0.2	0.2	mg/L	~
Fluoride	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	mg/L	~
Sulphate	<0.5	0.5	mg/L	~

Sample Description	MARLk		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	7/4/2023 10:25 AM		7/4/2023 12:00 PM		7/4/2023 11:00 AM		7/4/2023 11:30 AM			
Lab ID	1899885		1899886		1899887		1899888			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	5.25	N/A	6.06	N/A	4.21	N/A	5.44	N/A	pH	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 504663

Sample Description	MARLk		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	7/4/2023 10:25 AM		7/4/2023 12:00 PM		7/4/2023 11:00 AM		7/4/2023 11:30 AM			
Lab ID	1899885		1899886		1899887		1899888			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field Temp	18.46	N/A	24.29	N/A	17.52	N/A	20.78	N/A	°C	~

Sample Description	MARLk		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	7/4/2023 10:25 AM		7/4/2023 12:00 PM		7/4/2023 11:00 AM		7/4/2023 11:30 AM			
Lab ID	1899885		1899886		1899887		1899888			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	9	5	8	5	19	5	8	5	mg/L as CaCO3	~
Ammonia (as N)	0.063	0.005	0.047	0.005	0.054	0.005	0.062	0.005	mg/L	~
Conductivity	38	1	95	1	72	1	70	1	µS/cm	~
Dissolved Organic Carbon	34.8	0.4	30.9	0.4	40.2	0.8	38.5	0.8	mg/L	~
Free Cyanide	0.002	0.001	0.002	0.001	0.002	0.001	0.001	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	19	2	46	2	10	2	25	2	mg/L as CaCO3	~
pH	6.45	N/A	7.02	N/A	5.89	N/A	6.69	N/A	pH	~
Strong Acid Dissociable Cyanide	0.006	0.002	0.005	0.002	0.005	0.002	0.005	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	26.0	0.1	52.2	0.1	22.4	0.1	30.8	0.1	mg/L	~
Total Phosphorus (as P)	0.020 [0.021]	0.002	0.033	0.002	<0.002	0.002	0.022	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.003	0.001	0.004	0.001	0.003	0.001	0.002	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 504663

Sample Description	SWDup
Sample Date	7/4/2023
Lab ID	1899889

General Chemistry	Result	MDL	Units	Criteria: PWQO
Acidity	12	5	mg/L as CaCO3	~
Ammonia (as N)	0.068	0.005	mg/L	~
Conductivity	40	1	µS/cm	~
Dissolved Organic Carbon	36.7	0.8	mg/L	~
Free Cyanide	<0.001	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	20	2	mg/L as CaCO3	~
pH	6.58	N/A	pH	~
Strong Acid Dissociable Cyanide	0.005	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	26.3	0.1	mg/L	~
Total Phosphorus (as P)	0.023	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.003	0.001	mg/L	~

Sample Description	MARLk		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	7/4/2023 10:25 AM		7/4/2023 12:00 PM		7/4/2023 11:00 AM		7/4/2023 11:30 AM			
Lab ID	1899885		1899886		1899887		1899888			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	6.91	0.01	3.36	0.01	3.36	0.01	5.89	0.01	ng/L	200

Sample Description	SWDup
Sample Date	7/4/2023
Lab ID	1899889

Mercury (Trace)	Result	MDL	Units	Criteria: PWQO
Total Mercury	7.50	0.01	ng/L	200

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Canada Nickel Company Inc.

Work Order Number: 504663

Sample Description	MARLk		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	7/4/2023 10:25 AM		7/4/2023 12:00 PM		7/4/2023 11:00 AM		7/4/2023 11:30 AM			
Lab ID	1899885		1899886		1899887		1899888			
Mercury by CV	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01 [<0.01]	0.01	<0.01	0.01	<0.01	0.01	<0.01 [<0.01]	0.01	ug/L	0.2

Sample Description	SWDup			
Sample Date	7/4/2023			
Lab ID	1899889			
Mercury by CV	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	ug/L	0.2

Sample Description	MARLk		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	7/4/2023 10:25 AM		7/4/2023 12:00 PM		7/4/2023 11:00 AM		7/4/2023 11:30 AM			
Lab ID	1899885		1899886		1899887		1899888			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.191	0.001	0.065	0.001	0.118	0.001	0.212	0.001	mg/L	~

Sample Description	SWDup			
Sample Date	7/4/2023			
Lab ID	1899889			
Metals (Dissolved - 0.2um)	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.187	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 504663

Sample Description	MARLk	NDR - S - 06	JC - S - 01	JCRK - 02					
Sample Date	7/4/2023 10:25 AM	7/4/2023 12:00 PM	7/4/2023 11:00 AM	7/4/2023 11:30 AM					
Lab ID	1899885	1899886	1899887	1899888					
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.213	0.001	0.105	0.001	0.119	0.001	0.282	0.001	mg/L	~
Dissolved Antimony	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Arsenic	0.0010	0.0001	0.0011	0.0001	0.0008	0.0001	0.0013	0.0001	mg/L	~
Dissolved Barium	0.014	0.001	0.015	0.001	0.014	0.001	0.015	0.001	mg/L	~
Dissolved Beryllium	0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	0.00002	0.00002	mg/L	~
Dissolved Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Boron	0.003	0.002	0.004	0.002	0.003	0.002	0.004	0.002	mg/L	~
Dissolved Cadmium	0.000070	0.000005	0.000020	0.000005	0.000050	0.000005	0.000060	0.000005	mg/L	~
Dissolved Calcium	7.48	0.05	15.00	0.05	6.38	0.05	9.08	0.05	mg/L	~
Dissolved Cerium	0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0009	0.0001	0.0010	0.0001	0.0007	0.0001	0.0011	0.0001	mg/L	~
Dissolved Cobalt	0.0004	0.0001	0.0002	0.0001	0.0002	0.0001	0.0003	0.0001	mg/L	~
Dissolved Copper	0.0024	0.0002	0.0032	0.0002	0.0048	0.0002	0.0044	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.5	0.1	0.47	0.01	0.35	0.01	0.5	0.1	mg/L	~
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	0.00055	0.00005	0.00018	0.00005	0.00083	0.00005	0.00035	0.00005	mg/L	~
Dissolved Lithium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Magnesium	1.900	0.004	3.690	0.004	1.290	0.004	1.940	0.004	mg/L	~
Dissolved Manganese	0.0938	0.0001	0.0974	0.0001	0.0547	0.0001	0.0688	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 504663

Sample Description	MARLk	NDR - S - 06	JC - S - 01	JCRK - 02					
Sample Date	7/4/2023 10:25 AM	7/4/2023 12:00 PM	7/4/2023 11:00 AM	7/4/2023 11:30 AM					
Lab ID	1899885	1899886	1899887	1899888					
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Nickel	0.0011	0.0005	0.0012	0.0005	0.0008	0.0005	0.0011	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.28	0.05	0.23	0.05	<0.05	0.05	0.23	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	0.0011	0.0002	0.0009	0.0002	<0.0002	0.0002	0.0009	0.0002	mg/L	~
Dissolved Scandium	<0.001	0.001	<0.001	0.001	<0.001	0.001	0.002	0.001	mg/L	~
Dissolved Selenium	0.00044	0.00005	0.00019	0.00005	0.00014	0.00005	0.00006	0.00005	mg/L	~
Dissolved Silicon	1.28	0.05	1.46	0.05	1.49	0.05	2.36	0.05	mg/L	~
Dissolved Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Sodium	0.40	0.05	2.07	0.05	7.03	0.05	4.18	0.05	mg/L	~
Dissolved Strontium	0.0135	0.0002	0.0232	0.0002	0.0110	0.0002	0.0177	0.0002	mg/L	~
Dissolved Sulfur	1.6	0.5	2.0	0.5	1.7	0.5	1.5	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	0.0001	0.0001	mg/L	~
Dissolved Tin	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Titanium	0.0067	0.0003	0.0043	0.0003	0.0016	0.0003	0.0084	0.0003	mg/L	~
Dissolved Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Uranium	0.00005	0.00001	0.00004	0.00001	<0.00001	0.00001	0.00005	0.00001	mg/L	~
Dissolved Vanadium	0.0010	0.0005	0.0009	0.0005	<0.0005	0.0005	0.0011	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.007	0.001	0.009	0.001	<0.01	0.01	<0.01	0.01	mg/L	~
Dissolved Zirconium	0.0011	0.0002	0.0010	0.0002	0.0003	0.0002	0.0018	0.0002	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 504663

Sample Description	SWDup
Sample Date	7/4/2023
Lab ID	1899889

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.222	0.001	mg/L	~
Dissolved Antimony	<0.0001	0.0001	mg/L	~
Dissolved Arsenic	0.0010	0.0001	mg/L	~
Dissolved Barium	0.0047	0.0001	mg/L	~
Dissolved Beryllium	0.00002	0.00002	mg/L	~
Dissolved Bismuth	<0.00005	0.00005	mg/L	~
Dissolved Boron	0.003	0.002	mg/L	~
Dissolved Cadmium	0.000080	0.000005	mg/L	~
Dissolved Calcium	7.61	0.05	mg/L	~
Dissolved Cerium	0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0009	0.0001	mg/L	~
Dissolved Cobalt	0.0004	0.0001	mg/L	~
Dissolved Copper	0.0024	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	mg/L	~
Dissolved Iron	0.5	0.1	mg/L	~
Dissolved Lanthanum	<0.001	0.001	mg/L	~
Dissolved Lead	0.00051	0.00005	mg/L	~
Dissolved Lithium	<0.001	0.001	mg/L	~
Dissolved Magnesium	1.920	0.004	mg/L	~
Dissolved Manganese	0.0961	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	<0.00005	0.00005	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 504663

Sample Description	SWDup
Sample Date	7/4/2023
Lab ID	1899889

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Nickel	0.0011	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	mg/L	~
Dissolved Potassium	0.29	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	mg/L	~
Dissolved Rubidium	0.0012	0.0002	mg/L	~
Dissolved Scandium	<0.001	0.001	mg/L	~
Dissolved Selenium	<0.00005	0.00005	mg/L	~
Dissolved Silicon	1.23	0.05	mg/L	~
Dissolved Silver	<0.00001	0.00001	mg/L	~
Dissolved Sodium	0.42	0.05	mg/L	~
Dissolved Strontium	0.0136	0.0002	mg/L	~
Dissolved Sulfur	1.5	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	mg/L	~
Dissolved Thallium	<0.00001	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	mg/L	~
Dissolved Tin	<0.0001	0.0001	mg/L	~
Dissolved Titanium	0.0074	0.0003	mg/L	~
Dissolved Tungsten	<0.0001	0.0001	mg/L	~
Dissolved Uranium	0.00005	0.00001	mg/L	~
Dissolved Vanadium	0.0009	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	mg/L	~
Dissolved Zinc	<0.01	0.01	mg/L	~
Dissolved Zirconium	0.0014	0.0002	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 504663

Sample Description	MARLk		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	7/4/2023 10:25 AM		7/4/2023 12:00 PM		7/4/2023 11:00 AM		7/4/2023 11:30 AM			
Lab ID	1899885		1899886		1899887		1899888			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.308	0.001	0.90	0.01	0.247	0.001	0.612	0.001	mg/L	0.075
Total Antimony	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.02
Total Arsenic	0.0010	0.0001	0.0010	0.0001	0.0008	0.0001	0.0012	0.0001	mg/L	0.005
Total Barium	0.0050	0.0001	0.0119	0.0001	0.0053	0.0001	0.0073	0.0001	mg/L	~
Total Beryllium	0.00002	0.00002	0.00003	0.00002	<0.00002	0.00002	0.00003	0.00002	mg/L	0.011
Total Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Total Boron	0.003	0.002	0.005	0.002	<0.002	0.002	0.003	0.002	mg/L	0.2
Total Cadmium	0.000080	0.000005	0.000050	0.000005	0.000050	0.000005	0.000060	0.000005	mg/L	0.0001
Total Calcium	7.43	0.05	15.10	0.05	6.94	0.05	9.03	0.05	mg/L	~
Total Cerium	0.001	0.001	0.002	0.001	<0.001	0.001	0.001	0.001	mg/L	~
Total Cesium	0.00001	0.00001	0.00009	0.00001	0.00002	0.00001	0.00004	0.00001	mg/L	~
Total Chromium	0.0012	0.0001	0.0024	0.0001	0.0012	0.0001	0.0018	0.0001	mg/L	~
Total Cobalt	0.0004	0.0001	0.0006	0.0001	0.0003	0.0001	0.0004	0.0001	mg/L	0.0009
Total Copper	0.0038	0.0002	0.0046	0.0002	0.0163	0.0002	0.0061	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.7	0.1	1.1	0.1	0.49	0.01	0.8	0.1	mg/L	0.3
Total Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00061	0.00005	0.00065	0.00005	0.00114	0.00005	0.00057	0.00005	mg/L	0.001
Total Lithium	<0.001	0.001	0.002	0.001	<0.001	0.001	0.001	0.001	mg/L	~
Total Magnesium	1.920	0.004	4.040	0.004	1.420	0.004	2.050	0.004	mg/L	~
Total Manganese	0.0963	0.0001	0.1440	0.0001	0.0641	0.0001	0.0765	0.0001	mg/L	~
Total Molybdenum	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	0.04
Total Nickel	0.0011	0.0005	0.0019	0.0005	0.0008	0.0005	0.0014	0.0005	mg/L	0.025

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 504663

Sample Description	MARLk		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	7/4/2023 10:25 AM		7/4/2023 12:00 PM		7/4/2023 11:00 AM		7/4/2023 11:30 AM			
Lab ID	1899885		1899886		1899887		1899888			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.28	0.05	0.45	0.05	0.07	0.05	0.31	0.05	mg/L	~
Total Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	0.0012	0.0002	0.0025	0.0002	0.0003	0.0002	0.0015	0.0002	mg/L	~
Total Scandium	0.001	0.001	0.003	0.001	0.001	0.001	0.002	0.001	mg/L	~
Total Selenium	0.00039	0.00005	0.00013	0.00005	0.00018	0.00005	0.00005	0.00005	mg/L	0.1
Total Silicon	1.56	0.05	3.34	0.05	1.78	0.05	2.95	0.05	mg/L	~
Total Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0001
Total Sodium	0.40	0.05	2.15	0.05	7.28	0.05	5.13	0.05	mg/L	~
Total Strontium	0.0136	0.0002	0.0266	0.0002	0.0122	0.0002	0.0190	0.0002	mg/L	~
Total Sulphur	1.4	0.5	1.5	0.5	1.3	0.5	1.2	0.5	mg/L	~
Total Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Total Thallium	0.00002	0.00001	0.00002	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0003
Total Thorium	0.0001	0.0001	0.0002	0.0001	<0.0001	0.0001	0.0002	0.0001	mg/L	~
Total Tin	0.0002	0.0001	0.0001	0.0001	0.0009	0.0001	0.0002	0.0001	mg/L	~
Total Titanium	0.0138	0.0003	0.0393	0.0003	0.0066	0.0003	0.0215	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00007	0.00001	0.00008	0.00001	<0.00001	0.00001	0.00007	0.00001	mg/L	0.005
Total Vanadium	0.0011	0.0005	0.0022	0.0005	0.0006	0.0005	0.0016	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.008	0.001	0.007	0.001	0.016	0.001	0.010	0.001	mg/L	0.02
Total Zirconium	0.0013	0.0002	0.0027	0.0002	0.0006	0.0002	0.0023	0.0002	mg/L	0.004

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 504663

Sample Description	SWDup
Sample Date	7/4/2023
Lab ID	1899889

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.319	0.001	mg/L	0.075
Total Antimony	<0.0001	0.0001	mg/L	0.02
Total Arsenic	0.0009	0.0001	mg/L	0.005
Total Barium	0.0051	0.0001	mg/L	~
Total Beryllium	<0.00002	0.00002	mg/L	0.011
Total Bismuth	<0.00005	0.00005	mg/L	~
Total Boron	0.003	0.002	mg/L	0.2
Total Cadmium	0.000080	0.000005	mg/L	0.0001
Total Calcium	7.52	0.05	mg/L	~
Total Cerium	0.001	0.001	mg/L	~
Total Cesium	0.00002	0.00001	mg/L	~
Total Chromium	0.0012	0.0001	mg/L	~
Total Cobalt	0.0004	0.0001	mg/L	0.0009
Total Copper	0.0038	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	mg/L	~
Total Gallium	<0.001	0.001	mg/L	~
Total Iron	0.6	0.1	mg/L	0.3
Total Lanthanum	<0.001	0.001	mg/L	~
Total Lead	0.00064	0.00005	mg/L	0.001
Total Lithium	<0.001	0.001	mg/L	~
Total Magnesium	1.920	0.004	mg/L	~
Total Manganese	0.1040	0.0001	mg/L	~
Total Molybdenum	<0.00005	0.00005	mg/L	0.04
Total Nickel	0.0010	0.0005	mg/L	0.025

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 504663

Sample Description	SWDup
Sample Date	7/4/2023
Lab ID	1899889

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Niobium	<0.001	0.001	mg/L	~
Total Potassium	0.29	0.05	mg/L	~
Total Rhodium	<0.001	0.001	mg/L	~
Total Rubidium	0.0013	0.0002	mg/L	~
Total Scandium	0.001	0.001	mg/L	~
Total Selenium	0.00008	0.00005	mg/L	0.1
Total Silicon	1.53	0.05	mg/L	~
Total Silver	<0.00001	0.00001	mg/L	0.0001
Total Sodium	0.41	0.05	mg/L	~
Total Strontium	0.0140	0.0002	mg/L	~
Total Sulphur	1.3	0.5	mg/L	~
Total Tellurium	<0.0002	0.0002	mg/L	~
Total Thallium	<0.00001	0.00001	mg/L	0.0003
Total Thorium	0.0001	0.0001	mg/L	~
Total Tin	0.0004	0.0001	mg/L	~
Total Titanium	0.0128	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00007	0.00001	mg/L	0.005
Total Vanadium	0.0011	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	mg/L	~
Total Zinc	0.011	0.001	mg/L	0.02
Total Zirconium	0.0015	0.0002	mg/L	0.004

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 504663

Sample Description	MARLk		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	7/4/2023 10:25 AM		7/4/2023 12:00 PM		7/4/2023 11:00 AM		7/4/2023 11:30 AM			
Lab ID	1899885		1899886		1899887		1899888			
MethylMercury	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.16	0.02	0.11	0.02	0.22	0.02	0.20	0.02	ng/L	~

Sample Description	SWDup			
Sample Date	7/4/2023			
Lab ID	1899889			
MethylMercury	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.17	0.02	ng/L	~

Sample Description	MARLk		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	7/4/2023 10:25 AM		7/4/2023 12:00 PM		7/4/2023 11:00 AM		7/4/2023 11:30 AM			
Lab ID	1899885		1899886		1899887		1899888			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	115 [115]	10	105	10	125	10	120	10	mg/L	~
Total Suspended Solids	2 [2]	1	11.5	1	1.70	0.67	5.70	0.67	mg/L	~

Sample Description	SWDup			
Sample Date	7/4/2023			
Lab ID	1899889			
Solids	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	105	10	mg/L	~
Total Suspended Solids	3.00	0.67	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 504663

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	504954
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation:	PWQO
		Project #:	Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	Adam Gauthier & David Duciaume
Date Order Received:	7/5/2023	Analysis Started:	7/6/2023
Arrival Temperature:	25 °C	Analysis Completed:	7/13/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
GERLk	1901003	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	7/5/2023	10:55 AM
SUTHLK	1901004	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	7/5/2023	10:02 AM
JCRK-03	1901005	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	7/5/2023	8:50 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 504954

Method	Lab	Description	Reference
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 504954

WORK ORDER RESULTS

Sample Description	GERLk		SUTHLK		JCRK - 03			
Sample Date	7/5/2023 10:55 AM		7/5/2023 10:02 AM		7/5/2023 8:50 AM			
Lab ID	1901003		1901004		1901005			
Anions	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	0.5	0.2	0.4	0.2	4.1	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	1.6	0.5	2.5	0.5	1.0	0.5	mg/L	~

Sample Description	GERLk		SUTHLK		JCRK - 03			
Sample Date	7/5/2023 10:55 AM		7/5/2023 10:02 AM		7/5/2023 8:50 AM			
Lab ID	1901003		1901004		1901005			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	7.67	N/A	7.4	N/A	6.44	N/A	pH	~
Field Temp	27.42	N/A	25.43	N/A	21.15	N/A	°C	~

Sample Description	GERLk		SUTHLK		JCRK - 03			
Sample Date	7/5/2023 10:55 AM		7/5/2023 10:02 AM		7/5/2023 8:50 AM			
Lab ID	1901003		1901004		1901005			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	12	5	7	5	11	5	mg/L as CaCO3	~
Ammonia (as N)	0.024 [0.023]	0.005	0.009	0.005	0.070	0.005	mg/L	~
Conductivity	221	1	213	1	163	1	µS/cm	~

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Work Order Number: 504954

Sample Description	GERLk		SUTHLK		JCRK - 03			
Sample Date	7/5/2023 10:55 AM		7/5/2023 10:02 AM		7/5/2023 8:50 AM			
Lab ID	1901003		1901004		1901005			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Organic Carbon	14.8	0.4	7.7	0.4	28.4	0.8	mg/L	~
Free Cyanide			0.003	0.001	0.002	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	110	2	105	2	72	2	mg/L as CaCO3	~
pH	8	N/A	7.98	N/A	7.41	N/A	pH	~
Strong Acid Dissociable Cyanide			<0.002	0.002	<0.002 [<0.002]	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	105.0	0.1	105.0	0.1	76.5	0.1	mg/L	~
Total Phosphorus (as P)	0.028 [0.028]	0.002	0.044	0.002	0.048	0.002	mg/L	~
Weak Acid Dissociable Cyanide			0.003	0.001	0.004	0.001	mg/L	~

Sample Description	SUTHLK		JCRK - 03			
Sample Date	7/5/2023 10:02 AM		7/5/2023 8:50 AM			
Lab ID	1901004		1901005			
Mercury (Trace)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	0.85	0.01	4.99	0.01	ng/L	200

Sample Description	SUTHLK		JCRK - 03			
Sample Date	7/5/2023 10:02 AM		7/5/2023 8:50 AM			
Lab ID	1901004		1901005			
Mercury by CV	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01	0.01	ug/L	0.2

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Canada Nickel Company Inc.

Work Order Number: 504954

Sample Description	GERLk		SUTHLK		JCRK - 03			
Sample Date	7/5/2023 10:55 AM		7/5/2023 10:02 AM		7/5/2023 8:50 AM			
Lab ID	1901003		1901004		1901005			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.013	0.001	0.010	0.001	0.103	0.001	mg/L	~

Sample Description	GERLk		SUTHLK		JCRK - 03			
Sample Date	7/5/2023 10:55 AM		7/5/2023 10:02 AM		7/5/2023 8:50 AM			
Lab ID	1901003		1901004		1901005			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.015	0.001	0.005	0.001	0.113	0.001	mg/L	~
Dissolved Antimony	0.0004	0.0001	0.0003	0.0001	0.0004	0.0001	mg/L	~
Dissolved Arsenic	0.0004	0.0001	0.0002	0.0001	0.0010	0.0001	mg/L	~
Dissolved Barium	0.0222	0.0001	0.0184	0.0001	0.0205	0.0001	mg/L	~
Dissolved Beryllium	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	mg/L	~
Dissolved Bismuth	0.00009	0.00005	0.00006	0.00005	0.00008	0.00005	mg/L	~
Dissolved Boron	0.007	0.002	0.005	0.002	0.006	0.002	mg/L	~
Dissolved Cadmium	0.000010	0.000005	0.000007	0.000005	0.000030	0.000005	mg/L	~
Dissolved Calcium	31.2	0.5	29.3	0.5	24.2	0.5	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0015	0.0001	0.0013	0.0001	0.0015	0.0001	mg/L	~
Dissolved Cobalt	<0.0001	0.0001	<0.0001	0.0001	0.0001	0.0001	mg/L	~
Dissolved Copper	0.0060	0.0002	0.0008	0.0002	0.0025	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.30	0.01	0.19	0.01	0.58	0.01	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 504954

Sample Description	GERLk		SUTHLK		JCRK - 03			
Sample Date	7/5/2023 10:55 AM		7/5/2023 10:02 AM		7/5/2023 8:50 AM			
Lab ID	1901003		1901004		1901005			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	0.00007	0.00005	<0.00005	0.00005	0.00016	0.00005	mg/L	~
Dissolved Lithium	0.001	0.001	0.001	0.001	0.001	0.001	mg/L	~
Dissolved Magnesium	7.850	0.004	7.520	0.004	5.320	0.004	mg/L	~
Dissolved Manganese	0.0055	0.0001	0.0015	0.0001	0.0724	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00024	0.00005	0.00008	0.00005	0.00012	0.00005	mg/L	~
Dissolved Nickel	0.0006	0.0005	<0.0005	0.0005	0.0010	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.82	0.05	0.81	0.05	0.59	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	0.0012	0.0002	0.0013	0.0002	0.0012	0.0002	mg/L	~
Dissolved Scandium	<0.001	0.001	<0.001	0.001	0.002	0.001	mg/L	~
Dissolved Selenium	<0.00005	0.00005	<0.00005	0.00005	0.00006	0.00005	mg/L	~
Dissolved Silicon	1.91	0.05	1.74	0.05	2.94	0.05	mg/L	~
Dissolved Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Sodium	2.59	0.05	1.20	0.05	4.17	0.05	mg/L	~
Dissolved Strontium	0.0496	0.0002	0.0322	0.0002	0.0413	0.0002	mg/L	~
Dissolved Sulfur	1.9	0.5	2.0	0.5	1.0	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	<0.0001	0.0001	0.0001	0.0001	mg/L	~
Dissolved Tin	0.0003	0.0001	0.0003	0.0001	0.0003	0.0001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 504954

Sample Description	GERLk		SUTHLK		JCRK - 03			
Sample Date	7/5/2023 10:55 AM		7/5/2023 10:02 AM		7/5/2023 8:50 AM			
Lab ID	1901003		1901004		1901005			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Titanium	0.0007	0.0003	0.0005	0.0003	0.0045	0.0003	mg/L	~
Dissolved Tungsten	0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Uranium	0.00003	0.00001	0.00006	0.00001	0.00007	0.00001	mg/L	~
Dissolved Vanadium	0.0006	0.0005	0.0005	0.0005	0.0011	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.003	0.001	0.003	0.001	0.005	0.001	mg/L	~
Dissolved Zirconium	0.0005	0.0002	<0.0002	0.0002	0.0018	0.0002	mg/L	~

Sample Description	GERLk		SUTHLK		JCRK - 03			
Sample Date	7/5/2023 10:55 AM		7/5/2023 10:02 AM		7/5/2023 8:50 AM			
Lab ID	1901003		1901004		1901005			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.026	0.001	0.037	0.001	0.256	0.001	mg/L	0.075
Total Antimony	0.0006	0.0001	0.0004	0.0001	0.0004	0.0001	mg/L	0.02
Total Arsenic	0.0004	0.0001	0.0002	0.0001	0.0010	0.0001	mg/L	0.005
Total Barium	0.0139	0.0001	0.0098	0.0001	0.0110	0.0001	mg/L	~
Total Beryllium	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	mg/L	0.011
Total Bismuth	0.00005	0.00005	0.00007	0.00005	0.00005	0.00005	mg/L	~
Total Boron	0.006	0.002	0.005	0.002	0.006	0.002	mg/L	0.2
Total Cadmium	0.000009	0.000005	0.000005	0.000005	0.000040	0.000005	mg/L	0.0001
Total Calcium	31.3	0.5	28.8	0.5	22.2	0.5	mg/L	~
Total Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Cesium	<0.00001	0.00001	<0.00001	0.00001	0.00002	0.00001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 504954

Sample Description	GERLk		SUTHLK		JCRK - 03			
Sample Date	7/5/2023 10:55 AM		7/5/2023 10:02 AM		7/5/2023 8:50 AM			
Lab ID	1901003		1901004		1901005			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Chromium	0.0005	0.0001	0.0004	0.0001	0.0011	0.0001	mg/L	~
Total Cobalt	<0.0001	0.0001	<0.0001	0.0001	0.0002	0.0001	mg/L	0.0009
Total Copper	0.0008	0.0002	0.0023	0.0002	0.0020	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.33	0.01	0.21	0.01	0.6	0.1	mg/L	0.3
Total Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00016	0.00005	0.00010	0.00005	0.00028	0.00005	mg/L	0.001
Total Lithium	0.002	0.001	0.001	0.001	0.001	0.001	mg/L	~
Total Magnesium	7.920	0.004	7.700	0.004	5.460	0.004	mg/L	~
Total Manganese	0.0157	0.0001	0.0189	0.0001	0.0868	0.0001	mg/L	~
Total Mercury	<0.0001	0.0001					mg/L	0.0002
Total Molybdenum	0.00033	0.00005	0.00008	0.00005	0.00013	0.00005	mg/L	0.04
Total Nickel	<0.0005	0.0005	<0.0005	0.0005	0.0012	0.0005	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.82	0.05	0.85	0.05	0.62	0.05	mg/L	~
Total Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	0.0012	0.0002	0.0013	0.0002	0.0014	0.0002	mg/L	~
Total Scandium	<0.001	0.001	<0.001	0.001	0.002	0.001	mg/L	~
Total Selenium	0.00007	0.00005	0.00005	0.00005	0.00008	0.00005	mg/L	0.1
Total Silicon	1.76	0.05	1.69	0.05	3.07	0.05	mg/L	~
Total Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0001
Total Sodium	2.63	0.05	1.27	0.05	4.22	0.05	mg/L	~
Total Strontium	0.0489	0.0002	0.0326	0.0002	0.0418	0.0002	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 504954

Sample Description	GERLk		SUTHLK		JCRK - 03			
Sample Date	7/5/2023 10:55 AM		7/5/2023 10:02 AM		7/5/2023 8:50 AM			
Lab ID	1901003		1901004		1901005			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Sulphur	1.7	0.5	2.0	0.5	0.6	0.5	mg/L	~
Total Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Total Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0003
Total Thorium	<0.0001	0.0001	<0.0001	0.0001	0.0001	0.0001	mg/L	~
Total Tin	0.0003	0.0001	0.0004	0.0001	0.0004	0.0001	mg/L	~
Total Titanium	0.0012	0.0003	0.0014	0.0003	0.0093	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00003	0.00001	0.00006	0.00001	0.00007	0.00001	mg/L	0.005
Total Vanadium	<0.0005	0.0005	<0.0005	0.0005	0.0011	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.003	0.001	0.009	0.001	0.005	0.001	mg/L	0.02
Total Zirconium	0.0004	0.0002	<0.0002	0.0002	0.0020	0.0002	mg/L	0.004

Sample Description	SUTHLK		JCRK - 03			
Sample Date	7/5/2023 10:02 AM		7/5/2023 8:50 AM			
Lab ID	1901004		1901005			
MethylMercury	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.06	0.02	0.26 [0.27]	0.02	ng/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 504954

Sample Description	GERLk		SUTHLK		JCRK - 03			
Sample Date	7/5/2023 10:55 AM		7/5/2023 10:02 AM		7/5/2023 8:50 AM			
Lab ID	1901003		1901004		1901005			
Solids	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	100	10	90	10	95	10	mg/L	~
Total Suspended Solids	1.30	0.67	2.00	0.67	16.30	0.67	mg/L	~

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	505091
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	AG,DD, DA
Date Order Received:	7/6/2023	Analysis Started:	7/6/2023
Arrival Temperature:	21 °C	Analysis Completed:	7/13/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
WBR-P-03	1901475	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	7/6/2023	10:20 AM
WBR-P-04	1901476	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	7/6/2023	10:50 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 505091

Method	Lab	Description	Reference
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 505091

WORK ORDER RESULTS

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	7/6/2023 10:20 AM		7/6/2023 10:50 AM			
Lab ID	1901475		1901476			
Anions	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	<0.2	0.2	<0.2	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	<0.5	0.5	<0.5	0.5	mg/L	~

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	7/6/2023 10:20 AM		7/6/2023 10:50 AM			
Lab ID	1901475		1901476			
Field Parameters	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	5.01	N/A	4.21	N/A	pH	~
Field Temp	21.89	N/A	17.86	N/A	°C	~

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	7/6/2023 10:20 AM		7/6/2023 10:50 AM			
Lab ID	1901475		1901476			
General Chemistry	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	20	5	20	5	mg/L as CaCO3	~
Ammonia (as N)	0.054	0.005	0.070	0.005	mg/L	~
Conductivity	38	1	28	1	µS/cm	~
Dissolved Organic Carbon	32.4	0.4	53.0	0.8	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 505091

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	7/6/2023 10:20 AM		7/6/2023 10:50 AM			
Lab ID	1901475		1901476			
General Chemistry	Result	MDL	Result	MDL	Units	Criteria: PWQO
M-Alkalinity (pH 4.5)	18	2	6	2	mg/L as CaCO3	~
pH	6.51	N/A	5.27	N/A	pH	~
Total Hardness (as CaCO3) (Calc.)	23.7	0.1	16.9	0.1	mg/L	~
Total Phosphorus (as P)	0.051	0.002	0.021	0.002	mg/L	~

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	7/6/2023 10:20 AM		7/6/2023 10:50 AM			
Lab ID	1901475		1901476			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.129	0.001	0.136 [0.138]	0.001	mg/L	~

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	7/6/2023 10:20 AM		7/6/2023 10:50 AM			
Lab ID	1901475		1901476			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.134	0.001	0.130 [0.129]	0.001	mg/L	~
Dissolved Antimony	0.0003	0.0001	0.0003 [0.0003]	0.0001	mg/L	~
Dissolved Arsenic	0.0009	0.0001	0.0007 [0.0008]	0.0001	mg/L	~
Dissolved Barium	0.0127	0.0001	0.0154 [0.0151]	0.0001	mg/L	~
Dissolved Beryllium	<0.00002	0.00002	<0.00002 [<0.00002]	0.00002	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 505091

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	7/6/2023 10:20 AM		7/6/2023 10:50 AM			
Lab ID	1901475		1901476			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Bismuth	0.00007	0.00005	0.00007 [0.00005]	0.00005	mg/L	~
Dissolved Boron	0.002	0.002	<0.002 [0.002]	0.002	mg/L	~
Dissolved Cadmium	0.000020	0.000005	0.000040 [0.000040]	0.000005	mg/L	~
Dissolved Calcium	6.02	0.05	4.30 [4.26]	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Chromium	0.0008	0.0001	0.0006 [0.0005]	0.0001	mg/L	~
Dissolved Cobalt	0.0004	0.0001	0.0001 [0.0001]	0.0001	mg/L	~
Dissolved Copper	0.0050	0.0002	0.0019 [0.0019]	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Iron	0.52	0.01	0.39 [0.39]	0.01	mg/L	~
Dissolved Lanthanum	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Lead	0.00027	0.00005	0.00063 [0.00061]	0.00005	mg/L	~
Dissolved Lithium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Magnesium	1.680	0.004	1.040 [1.020]	0.004	mg/L	~
Dissolved Manganese	0.1570	0.0001	0.0442 [0.0431]	0.0001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 505091

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	7/6/2023 10:20 AM		7/6/2023 10:50 AM			
Lab ID	1901475		1901476			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Mercury	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	0.0002
Dissolved Molybdenum	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	mg/L	~
Dissolved Nickel	0.0008	0.0005	0.0006 [0.0005]	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05 [<0.05]	0.05	mg/L	~
Dissolved Potassium	0.11	0.05	0.05 [<0.05]	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Rubidium	0.0004	0.0002	<0.0002 [<0.0002]	0.0002	mg/L	~
Dissolved Scandium	<0.001	0.001	0.001 [0.001]	0.001	mg/L	~
Dissolved Selenium	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	mg/L	~
Dissolved Silicon	1.46	0.05	2.54 [2.44]	0.05	mg/L	~
Dissolved Silver	0.00003	0.00001	0.00004 [0.00003]	0.00001	mg/L	~
Dissolved Sodium	0.26	0.05	0.34 [0.33]	0.05	mg/L	~
Dissolved Strontium	0.0120	0.0002	0.0080 [0.0079]	0.0002	mg/L	~
Dissolved Sulfur	<0.5	0.5	<0.5 [<0.5]	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	mg/L	~
Dissolved Thallium	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 505091

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	7/6/2023 10:20 AM		7/6/2023 10:50 AM			
Lab ID	1901475		1901476			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Thorium	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Tin	0.0003	0.0001	0.0003 [0.0003]	0.0001	mg/L	~
Dissolved Titanium	0.0030	0.0003	0.0021 [0.0020]	0.0003	mg/L	~
Dissolved Tungsten	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Uranium	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Vanadium	<0.0005	0.0005	<0.0005 [<0.0005]	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Zinc	0.007	0.001	0.008 [0.008]	0.001	mg/L	~
Dissolved Zirconium	0.0007	0.0002	0.0003 [0.0003]	0.0002	mg/L	~

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	7/6/2023 10:20 AM		7/6/2023 10:50 AM			
Lab ID	1901475		1901476			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.163	0.001	0.147 [0.149]	0.001	mg/L	0.075
Total Antimony	0.0004	0.0001	0.0004 [0.0003]	0.0001	mg/L	0.02
Total Arsenic	0.0010	0.0001	0.0008 [0.0008]	0.0001	mg/L	0.005
Total Barium	0.0044	0.0001	0.0050 [0.0050]	0.0001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 505091

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	7/6/2023 10:20 AM		7/6/2023 10:50 AM			
Lab ID	1901475		1901476			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Beryllium	<0.00002	0.00002	<0.00002 [<0.00002]	0.00002	mg/L	0.011
Total Bismuth	<0.00005	0.00005	0.00006 [0.00006]	0.00005	mg/L	~
Total Boron	<0.002	0.002	<0.002 [0.002]	0.002	mg/L	0.2
Total Cadmium	0.000030	0.000005	0.000040 [0.000040]	0.000005	mg/L	0.0001
Total Calcium	6.39	0.05	4.70 [4.68]	0.05	mg/L	~
Total Cerium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Cesium	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	~
Total Chromium	0.0008	0.0001	0.0006 [0.0006]	0.0001	mg/L	~
Total Cobalt	0.0005	0.0001	0.0002 [0.0002]	0.0001	mg/L	0.0009
Total Copper	0.0006	0.0002	0.0016 [0.0016]	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Iron	0.5	0.1	0.44 [0.45]	0.01	mg/L	0.3
Total Lanthanum	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Lead	0.00039	0.00005	0.00069 [0.00069]	0.00005	mg/L	0.001
Total Lithium	0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Magnesium	1.790	0.004	1.110 [1.120]	0.004	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 505091

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	7/6/2023 10:20 AM		7/6/2023 10:50 AM			
Lab ID	1901475		1901476			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Manganese	0.1950	0.0001	0.0474 [0.0467]	0.0001	mg/L	~
Total Mercury	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	0.0002
Total Molybdenum	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	mg/L	0.04
Total Nickel	0.0008	0.0005	0.0005 [0.0005]	0.0005	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Potassium	0.12	0.05	0.06 [0.07]	0.05	mg/L	~
Total Rhodium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Rubidium	0.0005	0.0002	<0.0002 [<0.0002]	0.0002	mg/L	~
Total Scandium	<0.001	0.001	0.001 [0.001]	0.001	mg/L	~
Total Selenium	0.00011	0.00005	0.00010 [0.00005]	0.00005	mg/L	0.1
Total Silicon	1.63	0.05	2.56 [2.60]	0.05	mg/L	~
Total Silver	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	0.0001
Total Sodium	0.23	0.05	0.35 [0.36]	0.05	mg/L	~
Total Strontium	0.0125	0.0002	0.0084 [0.0085]	0.0002	mg/L	~
Total Sulphur	<0.5	0.5	<0.5 [<0.5]	0.5	mg/L	~
Total Tellurium	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	mg/L	~
Total Thallium	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	0.0003

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 505091

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	7/6/2023 10:20 AM		7/6/2023 10:50 AM			
Lab ID	1901475		1901476			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Thorium	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Total Tin	0.0003	0.0001	0.0004 [0.0004]	0.0001	mg/L	~
Total Titanium	0.0040	0.0003	0.0030 [0.0027]	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	0.03
Total Uranium	0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	0.005
Total Vanadium	0.0005	0.0005	<0.0005 [<0.0005]	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Zinc	0.005	0.001	0.007 [0.008]	0.001	mg/L	0.02
Total Zirconium	0.0006	0.0002	0.0004 [0.0004]	0.0002	mg/L	0.004

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	7/6/2023 10:20 AM		7/6/2023 10:50 AM			
Lab ID	1901475		1901476			
Solids	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	70	10	100	10	mg/L	~
Total Suspended Solids	4.00	0.67	2.30	0.67	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 505091

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

Reproduction of Report: Report shall not be reproduced, except in full, without the approval of Testmark Laboratories Ltd.

ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	505909
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	AG, JP
Date Order Received:	7/13/2023	Analysis Started:	7/13/2023
Arrival Temperature:	10 °C	Analysis Completed:	7/21/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
NDR.S-04b	1904224	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	7/12/2023	2:00 PM
UWC-01	1904225	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	7/12/2023	2:55 PM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test

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Canada Nickel Company Inc.

Work Order Number: 505909

Method	Lab	Description	Reference
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 505909

WORK ORDER RESULTS

Sample Description	NDR.S - 04b		UWC - 01			
Sample Date	7/12/2023 2:00 PM		7/12/2023 2:55 PM			
Lab ID	1904224		1904225			
Anions	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	1.4 [1.4]	0.2	0.3	0.2	mg/L	~
Fluoride	<0.05 [<0.05]	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	<0.5 [<0.5]	0.5	<0.5	0.5	mg/L	~

Sample Description	NDR.S - 04b		UWC - 01			
Sample Date	7/12/2023 2:00 PM		7/12/2023 2:55 PM			
Lab ID	1904224		1904225			
Field Parameters	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	6.37	N/A	5.15	N/A	pH	~
Field Temp	20.7	N/A	24.87	N/A	°C	~

Sample Description	NDR.S - 04b		UWC - 01			
Sample Date	7/12/2023 2:00 PM		7/12/2023 2:55 PM			
Lab ID	1904224		1904225			
General Chemistry	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	8	5	16	5	mg/L as CaCO3	~
Ammonia (as N)	0.053	0.005	0.046	0.005	mg/L	~
Conductivity	101	1	34	1	µS/cm	~

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Canada Nickel Company Inc.

Work Order Number: 505909

Sample Description	NDR.S - 04b		UWC - 01			
Sample Date	7/12/2023 2:00 PM		7/12/2023 2:55 PM			
Lab ID	1904224		1904225			
General Chemistry	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Organic Carbon	30.5	0.4	37.5	0.8	mg/L	~
Free Cyanide	0.003	0.001	0.004	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	46	2	14	2	mg/L as CaCO3	~
pH	6.92	N/A	6.25	N/A	pH	~
Strong Acid Dissociable Cyanide	0.003 [<0.002]	0.002	0.003	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	55.3	0.1	19.5	0.1	mg/L	~
Total Phosphorus (as P)	0.030	0.002	0.012	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.005	0.001	0.005	0.001	mg/L	~

Sample Description	NDR.S - 04b		UWC - 01			
Sample Date	7/12/2023 2:00 PM		7/12/2023 2:55 PM			
Lab ID	1904224		1904225			
Mercury (Trace)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	3.45	0.01	1.97	0.01	ng/L	200

Sample Description	NDR.S - 04b		UWC - 01			
Sample Date	7/12/2023 2:00 PM		7/12/2023 2:55 PM			
Lab ID	1904224		1904225			
Mercury by CV	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01	0.01	ug/L	0.2

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Canada Nickel Company Inc.

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Sample Description	NDR.S - 04b		UWC - 01			
Sample Date	7/12/2023 2:00 PM		7/12/2023 2:55 PM			
Lab ID	1904224		1904225			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.054	0.001	0.069	0.001	mg/L	~

Sample Description	NDR.S - 04b		UWC - 01			
Sample Date	7/12/2023 2:00 PM		7/12/2023 2:55 PM			
Lab ID	1904224		1904225			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.073	0.001	0.073	0.001	mg/L	~
Dissolved Antimony	0.0012	0.0001	0.0010	0.0001	mg/L	~
Dissolved Arsenic	0.0013	0.0001	0.0007	0.0001	mg/L	~
Dissolved Barium	0.0135	0.0001	0.0108	0.0001	mg/L	~
Dissolved Beryllium	<0.00002	0.00002	<0.00002	0.00002	mg/L	~
Dissolved Bismuth	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Boron	0.004	0.002	0.003	0.002	mg/L	~
Dissolved Cadmium	0.000030	0.000005	0.000020	0.000005	mg/L	~
Dissolved Calcium	14.90	0.05	5.06	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0008	0.0001	0.0007	0.0001	mg/L	~
Dissolved Cobalt	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Copper	0.0011	0.0002	0.0035	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.48	0.01	0.47	0.01	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 505909

Sample Description	NDR.S - 04b		UWC - 01			
Sample Date	7/12/2023 2:00 PM		7/12/2023 2:55 PM			
Lab ID	1904224		1904225			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	0.00021	0.00005	0.00032	0.00005	mg/L	~
Dissolved Lithium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Magnesium	3.720	0.004	1.430	0.004	mg/L	~
Dissolved Manganese	0.0856	0.0001	0.0420	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00067	0.00005	0.00030	0.00005	mg/L	~
Dissolved Nickel	0.0009	0.0005	0.0006	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.22	0.05	0.07	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	0.0007	0.0002	0.0002	0.0002	mg/L	~
Dissolved Scandium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Selenium	0.00060	0.00005	0.00016	0.00005	mg/L	~
Dissolved Silicon	1.45	0.05	0.82	0.05	mg/L	~
Dissolved Silver	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Sodium	1.68	0.05	0.24	0.05	mg/L	~
Dissolved Strontium	0.0240	0.0002	0.0102	0.0002	mg/L	~
Dissolved Sulfur	0.5	0.5	<0.5	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Thallium	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Tin	<0.0001	0.0001	0.0004	0.0001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 505909

Sample Description	NDR.S - 04b		UWC - 01			
Sample Date	7/12/2023 2:00 PM		7/12/2023 2:55 PM			
Lab ID	1904224		1904225			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Titanium	0.0027	0.0003	0.0012	0.0003	mg/L	~
Dissolved Tungsten	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Uranium	0.00003	0.00001	0.00002	0.00001	mg/L	~
Dissolved Vanadium	0.0008	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.002	0.001	0.006	0.001	mg/L	~
Dissolved Zirconium	0.0011	0.0002	0.0003	0.0002	mg/L	~

Sample Description	NDR.S - 04b		UWC - 01			
Sample Date	7/12/2023 2:00 PM		7/12/2023 2:55 PM			
Lab ID	1904224		1904225			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.451	0.001	0.095	0.001	mg/L	0.075
Total Antimony	0.0011	0.0001	0.0012	0.0001	mg/L	0.02
Total Arsenic	0.0012	0.0001	0.0007	0.0001	mg/L	0.005
Total Barium	0.0081	0.0001	0.0036	0.0001	mg/L	~
Total Beryllium	0.00002	0.00002	<0.00002	0.00002	mg/L	0.011
Total Bismuth	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Total Boron	0.004	0.002	<0.002	0.002	mg/L	0.2
Total Cadmium	0.000040	0.000005	0.000020	0.000005	mg/L	0.0001
Total Calcium	14.20	0.05	4.74	0.05	mg/L	~
Total Cerium	0.001	0.001	<0.001	0.001	mg/L	~
Total Cesium	0.00004	0.00001	<0.00001	0.00001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 505909

Sample Description	NDR.S - 04b		UWC - 01			
Sample Date	7/12/2023 2:00 PM		7/12/2023 2:55 PM			
Lab ID	1904224		1904225			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Chromium	0.0014	0.0001	0.0007	0.0001	mg/L	~
Total Cobalt	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0009
Total Copper	0.0009	0.0002	0.0003	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.9	0.1	0.51	0.01	mg/L	0.3
Total Lanthanum	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00035	0.00005	0.00042	0.00005	mg/L	0.001
Total Lithium	0.001	0.001	<0.001	0.001	mg/L	~
Total Magnesium	3.750	0.004	1.380	0.004	mg/L	~
Total Manganese	0.0985	0.0001	0.0415	0.0001	mg/L	~
Total Molybdenum	0.00071	0.00005	0.00025	0.00005	mg/L	0.04
Total Nickel	0.0012	0.0005	<0.0005	0.0005	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.29	0.05	0.06	0.05	mg/L	~
Total Rhodium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	0.0013	0.0002	0.0002	0.0002	mg/L	~
Total Scandium	0.001	0.001	<0.001	0.001	mg/L	~
Total Selenium	0.00033	0.00005	0.00014	0.00005	mg/L	0.1
Total Silicon	2.22	0.05	0.93	0.05	mg/L	~
Total Silver	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0001
Total Sodium	1.65	0.05	0.29	0.05	mg/L	~
Total Strontium	0.0245	0.0002	0.0086	0.0002	mg/L	~
Total Sulphur	<0.5	0.5	0.5	0.5	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 505909

Sample Description	NDR.S - 04b		UWC - 01			
Sample Date	7/12/2023 2:00 PM		7/12/2023 2:55 PM			
Lab ID	1904224		1904225			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Tellurium	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Total Thallium	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0003
Total Thorium	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Total Tin	0.0002	0.0001	0.0004	0.0001	mg/L	~
Total Titanium	0.0153	0.0003	0.0020	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00005	0.00001	<0.00001	0.00001	mg/L	0.005
Total Vanadium	0.0013	0.0005	<0.0005	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.003	0.001	0.005	0.001	mg/L	0.02
Total Zirconium	0.0017	0.0002	0.0003	0.0002	mg/L	0.004

Sample Description	NDR.S - 04b		UWC - 01			
Sample Date	7/12/2023 2:00 PM		7/12/2023 2:55 PM			
Lab ID	1904224		1904225			
MethylMercury	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.18	0.02	0.07	0.02	ng/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 505909

Sample Description	NDR.S - 04b		UWC - 01			
Sample Date	7/12/2023 2:00 PM		7/12/2023 2:55 PM			
Lab ID	1904224		1904225			
Solids	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	100 [105]	10	95	10	mg/L	~
Total Suspended Solids	7.5 [8.5]	1	1.00	0.67	mg/L	~

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	506589
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	
Date Order Received:	7/19/2023	Analysis Started:	7/20/2023
Arrival Temperature:	23 °C	Analysis Completed:	8/1/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
MATR-REF	1906645	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	7/19/2023	9:10 AM
MATR-01	1906646	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	7/16/2023	11:15 AM
MATR-02	1906647	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	7/16/2023	10:30 AM
WBR-S-04	1906648	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	7/14/2023	3:30 PM
WBR-S-06	1906649	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	7/15/2023	4:00 PM
JCRK-01	1906650	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	7/19/2023	8:50 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A

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Canada Nickel Company Inc.

Work Order Number: 506589

Method	Lab	Description	Reference
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (0.2um) (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 506589

WORK ORDER RESULTS

Sample Description	MATR - REF		MATR - 01		MATR - 02		WBR - S - 04			
Sample Date	7/19/2023 9:10 AM		7/16/2023 11:15 AM		7/16/2023 10:30 AM		7/14/2023 3:30 PM			
Lab ID	1906645		1906646		1906647		1906648			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	3.1	0.2	2.9	0.2	2.8	0.2	<0.2	0.2	mg/L	~
Fluoride	0.06	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	3.8	0.5	3.6	0.5	3.5	0.5	0.8	0.5	mg/L	~

Sample Description	WBR - S - 06		JCRK - 01			
Sample Date	7/15/2023 4:00 PM		7/19/2023 8:50 AM			
Lab ID	1906649		1906650			
Anions	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	0.2	0.2	3.1	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	0.9	0.5	3.7	0.5	mg/L	~

Sample Description	MATR - REF		MATR - 01		MATR - 02		WBR - S - 04			
Sample Date	7/19/2023 9:10 AM		7/16/2023 11:15 AM		7/16/2023 10:30 AM		7/14/2023 3:30 PM			
Lab ID	1906645		1906646		1906647		1906648			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	5.98	N/A	7.62	N/A	7.53	N/A	6.52	N/A	pH	~

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Work Order Number: 506589

Sample Description	MATR - REF		MATR - 01		MATR - 02		WBR - S - 04			
Sample Date	7/19/2023 9:10 AM		7/16/2023 11:15 AM		7/16/2023 10:30 AM		7/14/2023 3:30 PM			
Lab ID	1906645		1906646		1906647		1906648			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field Temp	21.63	N/A	21.7	N/A	21.5	N/A	19.8	N/A	°C	~

Sample Description	WBR - S - 06		JCRK - 01			
Sample Date	7/15/2023 4:00 PM		7/19/2023 8:50 AM			
Lab ID	1906649		1906650			
Field Parameters	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	7.13	N/A	5.89	N/A	pH	~
Field Temp	20.3	N/A	21.47	N/A	°C	~

Sample Description	MATR - REF		MATR - 01		MATR - 02		WBR - S - 04			
Sample Date	7/19/2023 9:10 AM		7/16/2023 11:15 AM		7/16/2023 10:30 AM		7/14/2023 3:30 PM			
Lab ID	1906645		1906646		1906647		1906648			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	5	5	6	5	7	5	7	5	mg/L as CaCO3	~
Ammonia (as N)	0.028	0.005	0.039	0.005	0.033 [0.033]	0.005	0.034	0.005	mg/L	~
Conductivity	134	1	127	1	131	1	81	1	µS/cm	~
Dissolved Organic Carbon	12.4	0.4	13.0	0.4	13.0	0.4	33.4	0.8	mg/L	~
Free Cyanide			0.001	0.001			0.002	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	62	2	55	2	55	2	40	2	mg/L as CaCO3	~
pH	7.63	N/A	7.47	N/A	7.51	N/A	7.28	N/A	pH	~
Strong Acid Dissociable Cyanide			0.002 [0.002]	0.002			0.004	0.002	mg/L	~

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Sample Description	MATR - REF		MATR - 01		MATR - 02		WBR - S - 04			
Sample Date	7/19/2023 9:10 AM		7/16/2023 11:15 AM		7/16/2023 10:30 AM		7/14/2023 3:30 PM			
Lab ID	1906645		1906646		1906647		1906648			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Hardness (as CaCO3) (Calc.)	60.7	0.1	57.6	0.1	57.5	0.1	47.4	0.1	mg/L	~
Total Phosphorus (as P)	0.015 [0.014]	0.002	0.016	0.002	0.016	0.002	0.022	0.002	mg/L	~
Weak Acid Dissociable Cyanide			0.004	0.001			0.007	0.001	mg/L	~

Sample Description	WBR - S - 06		JCRK - 01			
Sample Date	7/15/2023 4:00 PM		7/19/2023 8:50 AM			
Lab ID	1906649		1906650			
General Chemistry	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	8	5	7	5	mg/L as CaCO3	~
Ammonia (as N)	0.070	0.005	0.030	0.005	mg/L	~
Conductivity	87	1	133	1	µS/cm	~
Dissolved Organic Carbon	37.1	0.8	13.2 [13.0]	0.4	mg/L	~
Free Cyanide	0.004	0.001	0.002	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	42	2	79	2	mg/L as CaCO3	~
pH	7.11	N/A	7.33	N/A	pH	~
Strong Acid Dissociable Cyanide	0.005	0.002	<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	50.7	0.1	60.4	0.1	mg/L	~
Total Phosphorus (as P)	0.041	0.002	0.016	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.012	0.001	0.006	0.001	mg/L	~

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Work Order Number: 506589

Sample Description	MATR - 01		WBR - S - 04		WBR - S - 06		JCRK - 01			
Sample Date	7/16/2023 11:15 AM		7/14/2023 3:30 PM		7/15/2023 4:00 PM		7/19/2023 8:50 AM			
Lab ID	1906646		1906648		1906649		1906650			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	2.26	0.01	6.43	0.01	6.17	0.01	2.25	0.01	ng/L	200

Sample Description	MATR - 01		WBR - S - 04		WBR - S - 06		JCRK - 01			
Sample Date	7/16/2023 11:15 AM		7/14/2023 3:30 PM		7/15/2023 4:00 PM		7/19/2023 8:50 AM			
Lab ID	1906646		1906648		1906649		1906650			
Mercury by CV	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	ug/L	0.2

Sample Description	MATR - REF		MATR - 01		MATR - 02		WBR - S - 04			
Sample Date	7/19/2023 9:10 AM		7/16/2023 11:15 AM		7/16/2023 10:30 AM		7/14/2023 3:30 PM			
Lab ID	1906645		1906646		1906647		1906648			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.027	0.001	0.032	0.001	0.032	0.001	0.181	0.001	mg/L	~

Sample Description	WBR - S - 06		JCRK - 01			
Sample Date	7/15/2023 4:00 PM		7/19/2023 8:50 AM			
Lab ID	1906649		1906650			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.165	0.001	0.026 [0.029]	0.001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 506589

Sample Description	MATR - REF		MATR - 01		MATR - 02		WBR - S - 04			
Sample Date	7/19/2023 9:10 AM		7/16/2023 11:15 AM		7/16/2023 10:30 AM		7/14/2023 3:30 PM			
Lab ID	1906645		1906646		1906647		1906648			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.034	0.001	0.050	0.001	0.049	0.001	0.267	0.001	mg/L	~
Dissolved Antimony	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Arsenic	0.0008	0.0001	0.0007	0.0001	0.0007	0.0001	0.0014	0.0001	mg/L	~
Dissolved Barium	0.0158	0.0001	0.0079	0.0001	0.0115	0.0001	0.0084	0.0001	mg/L	~
Dissolved Beryllium	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	0.00003	0.00002	mg/L	~
Dissolved Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Boron	0.013	0.002	0.010	0.002	0.010	0.002	0.005	0.002	mg/L	~
Dissolved Cadmium	0.000009	0.000005	0.000010	0.000005	0.000010	0.000005	0.000040	0.000005	mg/L	~
Dissolved Calcium	17.80	0.05	16.90	0.05	16.70	0.05	13.70	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0011	0.0001	0.0010	0.0001	0.0009	0.0001	0.0013	0.0001	mg/L	~
Dissolved Cobalt	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	0.0002	0.0001	mg/L	~
Dissolved Copper	0.0020	0.0002	0.0012	0.0002	0.0053	0.0002	0.0019	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.26	0.01	0.25	0.01	0.25	0.01	0.8	0.1	mg/L	~
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	0.00007	0.00005	0.00008	0.00005	0.00007	0.00005	0.00025	0.00005	mg/L	~
Dissolved Lithium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Magnesium	3.880	0.004	3.690	0.004	3.650	0.004	2.940	0.004	mg/L	~
Dissolved Manganese	0.0019	0.0001	0.0027	0.0001	0.0022	0.0001	0.0556	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00008	0.00005	0.00007	0.00005	0.00008	0.00005	0.00006	0.00005	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 506589

Sample Description	MATR - REF		MATR - 01		MATR - 02		WBR - S - 04			
Sample Date	7/19/2023 9:10 AM		7/16/2023 11:15 AM		7/16/2023 10:30 AM		7/14/2023 3:30 PM			
Lab ID	1906645		1906646		1906647		1906648			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Nickel	0.0011	0.0005	0.0009	0.0005	0.0010	0.0005	0.0013	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.48	0.05	0.48	0.05	0.48	0.05	0.28	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	0.0012	0.0002	0.0012	0.0002	0.0012	0.0002	0.0009	0.0002	mg/L	~
Dissolved Scandium	0.002	0.001	0.002	0.001	0.002	0.001	0.001	0.001	mg/L	~
Dissolved Selenium	0.00011	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Silicon	2.88	0.05	3.01	0.05	2.97	0.05	2.49	0.05	mg/L	~
Dissolved Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Sodium	2.79	0.05	2.66	0.05	2.61	0.05	1.10	0.05	mg/L	~
Dissolved Strontium	0.0252	0.0002	0.0243	0.0002	0.0241	0.0002	0.0239	0.0002	mg/L	~
Dissolved Sulfur	3.1	0.5	3.2	0.5	3.4	0.5	2.2	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Tin	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Titanium	0.0015	0.0003	0.0021	0.0003	0.0022	0.0003	0.0078	0.0003	mg/L	~
Dissolved Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Uranium	0.00005	0.00001	0.00005	0.00001	0.00005	0.00001	0.00005	0.00001	mg/L	~
Dissolved Vanadium	0.0007	0.0005	0.0006	0.0005	0.0007	0.0005	0.0013	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.004	0.001	<0.001	0.001	0.002	0.001	0.003	0.001	mg/L	~
Dissolved Zirconium	0.0005	0.0002	0.0005	0.0002	0.0006	0.0002	0.0023	0.0002	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 506589

Sample Description	WBR - S - 06		JCRK - 01			
Sample Date	7/15/2023 4:00 PM		7/19/2023 8:50 AM			
Lab ID	1906649		1906650			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.228	0.001	0.038 [0.036]	0.001	mg/L	~
Dissolved Antimony	<0.0001	0.0001	0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Arsenic	0.0014	0.0001	0.0008 [0.0007]	0.0001	mg/L	~
Dissolved Barium	0.0088	0.0001	0.0170 [0.0171]	0.0001	mg/L	~
Dissolved Beryllium	0.00002	0.00002	<0.00002 [<0.00002]	0.00002	mg/L	~
Dissolved Bismuth	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	mg/L	~
Dissolved Boron	0.006	0.002	0.011 [0.011]	0.002	mg/L	~
Dissolved Cadmium	0.000040	0.000005	0.000010 [0.000007]	0.000005	mg/L	~
Dissolved Calcium	14.40	0.05	17.00 [16.80]	0.05	mg/L	~
Dissolved Cerium	0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Chromium	0.0112	0.0001	0.0012 [0.0011]	0.0001	mg/L	~
Dissolved Cobalt	0.0002	0.0001	0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Copper	0.0018	0.0002	0.0015 [0.0015]	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Iron	0.8	0.1	0.24 [0.23]	0.01	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 506589

Sample Description	WBR - S - 06		JCRK - 01			
Sample Date	7/15/2023 4:00 PM		7/19/2023 8:50 AM			
Lab ID	1906649		1906650			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Lanthanum	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Lead	0.00030	0.00005	0.00005 [<0.00005]	0.00005	mg/L	~
Dissolved Lithium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Magnesium	3.130	0.004	3.690 [3.600]	0.004	mg/L	~
Dissolved Manganese	0.0641	0.0001	0.0031 [0.0030]	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00006	0.00005	0.00036 [0.00029]	0.00005	mg/L	~
Dissolved Nickel	0.0014	0.0005	0.0008 [0.0007]	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05 [<0.05]	0.05	mg/L	~
Dissolved Potassium	0.31	0.05	0.48 [0.47]	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Rubidium	0.0010	0.0002	0.0012 [0.0012]	0.0002	mg/L	~
Dissolved Scandium	0.002	0.001	0.002 [0.002]	0.001	mg/L	~
Dissolved Selenium	<0.00005	0.00005	0.00013 [0.00010]	0.00005	mg/L	~
Dissolved Silicon	2.39	0.05	3.04 [2.89]	0.05	mg/L	~
Dissolved Silver	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 506589

Sample Description	WBR - S - 06		JCRK - 01			
Sample Date	7/15/2023 4:00 PM		7/19/2023 8:50 AM			
Lab ID	1906649		1906650			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Sodium	1.26	0.05	2.74 [2.68]	0.05	mg/L	~
Dissolved Strontium	0.0255	0.0002	0.0242 [0.0236]	0.0002	mg/L	~
Dissolved Sulfur	2.5	0.5	3.3 [3.0]	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	mg/L	~
Dissolved Thallium	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Tin	<0.0001	0.0001	0.0002 [0.0003]	0.0001	mg/L	~
Dissolved Titanium	0.0073	0.0003	0.0018 [0.0018]	0.0003	mg/L	~
Dissolved Tungsten	<0.0001	0.0001	0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Uranium	0.00005	0.00001	0.00007 [0.00007]	0.00001	mg/L	~
Dissolved Vanadium	0.0012	0.0005	0.0007 [0.0006]	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Zinc	0.004	0.001	0.003 [0.003]	0.001	mg/L	~
Dissolved Zirconium	0.0024	0.0002	0.0009 [0.0009]	0.0002	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 506589

Sample Description	MATR - REF		MATR - 01		MATR - 02		WBR - S - 04			
Sample Date	7/19/2023 9:10 AM		7/16/2023 11:15 AM		7/16/2023 10:30 AM		7/14/2023 3:30 PM			
Lab ID	1906645		1906646		1906647		1906648			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.110	0.001	0.169	0.001	0.108	0.001	0.343	0.001	mg/L	0.075
Total Antimony	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	mg/L	0.02
Total Arsenic	0.0008	0.0001	0.0007	0.0001	0.0007	0.0001	0.0012	0.0001	mg/L	0.005
Total Barium	0.0075	0.0001	0.0073	0.0001	0.0072	0.0001	0.0079	0.0001	mg/L	~
Total Beryllium	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	0.00003	0.00002	mg/L	0.011
Total Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Total Boron	0.011	0.002	0.010	0.002	0.009	0.002	0.004	0.002	mg/L	0.2
Total Cadmium	0.000010	0.000005	0.000020	0.000005	0.000010	0.000005	0.000050	0.000005	mg/L	0.0001
Total Calcium	17.40	0.05	16.40	0.05	16.20	0.05	13.10	0.05	mg/L	~
Total Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	0.002	0.001	mg/L	~
Total Cesium	0.00001	0.00001	0.00002	0.00001	0.00001	0.00001	0.00002	0.00001	mg/L	~
Total Chromium	0.0009	0.0001	0.0010	0.0001	0.0009	0.0001	0.0015	0.0001	mg/L	~
Total Cobalt	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0003	0.0001	mg/L	0.0009
Total Copper	0.0013	0.0002	0.0012	0.0002	0.0012	0.0002	0.0021	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.36	0.01	0.39	0.01	0.34	0.01	1.0	0.1	mg/L	0.3
Total Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00011	0.00005	0.00012	0.00005	0.00011	0.00005	0.00088	0.00005	mg/L	0.001
Total Lithium	<0.001	0.001	<0.001	0.001	<0.001	0.001	0.001	0.001	mg/L	~
Total Magnesium	3.820	0.004	3.600	0.004	3.490	0.004	2.860	0.004	mg/L	~
Total Manganese	0.0194	0.0001	0.0181	0.0001	0.0178	0.0001	0.0636	0.0001	mg/L	~
Total Mercury	<0.0001	0.0001			<0.0001	0.0001			mg/L	0.0002
Total Molybdenum	0.00026	0.00005	0.00023	0.00005	0.00020	0.00005	0.00016	0.00005	mg/L	0.04

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 506589

Sample Description	MATR - REF		MATR - 01		MATR - 02		WBR - S - 04			
Sample Date	7/19/2023 9:10 AM		7/16/2023 11:15 AM		7/16/2023 10:30 AM		7/14/2023 3:30 PM			
Lab ID	1906645		1906646		1906647		1906648			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Nickel	0.0006	0.0005	0.0006	0.0005	<0.0005	0.0005	0.0013	0.0005	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.48	0.05	0.49	0.05	0.46	0.05	0.27	0.05	mg/L	~
Total Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	0.0013	0.0002	0.0014	0.0002	0.0013	0.0002	0.0011	0.0002	mg/L	~
Total Scandium	0.002	0.001	0.002	0.001	0.002	0.001	0.002	0.001	mg/L	~
Total Selenium	0.00029	0.00005	0.00021	0.00005	0.00012	0.00005	0.00016	0.00005	mg/L	0.1
Total Silicon	2.90	0.05	3.10	0.05	2.94	0.05	2.34	0.05	mg/L	~
Total Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0001
Total Sodium	2.76	0.05	2.63	0.05	2.52	0.05	1.07	0.05	mg/L	~
Total Strontium	0.0245	0.0002	0.0239	0.0002	0.0235	0.0002	0.0234	0.0002	mg/L	~
Total Sulphur	3.0	0.5	3.1	0.5	3.2	0.5	2.1	0.5	mg/L	~
Total Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Total Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0003
Total Thorium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Total Tin	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	0.0002	0.0001	mg/L	~
Total Titanium	0.0043	0.0003	0.0068	0.0003	0.0046	0.0003	0.0105	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00007	0.00001	0.00007	0.00001	0.00007	0.00001	0.00007	0.00001	mg/L	0.005
Total Vanadium	0.0007	0.0005	0.0008	0.0005	0.0007	0.0005	0.0015	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.002	0.001	0.002	0.001	0.002	0.001	0.004	0.001	mg/L	0.02
Total Zirconium	0.0008	0.0002	0.0010	0.0002	0.0009	0.0002	0.0029	0.0002	mg/L	0.004

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 506589

Sample Description	WBR - S - 06		JCRK - 01			
Sample Date	7/15/2023 4:00 PM		7/19/2023 8:50 AM			
Lab ID	1906649		1906650			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.359	0.001	0.139 [0.154]	0.001	mg/L	0.075
Total Antimony	0.0002	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	0.02
Total Arsenic	0.0013	0.0001	0.0007 [0.0006]	0.0001	mg/L	0.005
Total Barium	0.0087	0.0001	0.0076 [0.0076]	0.0001	mg/L	~
Total Beryllium	0.00003	0.00002	<0.00002 [<0.00002]	0.00002	mg/L	0.011
Total Bismuth	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	mg/L	~
Total Boron	0.005	0.002	0.010 [0.011]	0.002	mg/L	0.2
Total Cadmium	0.000060	0.000005	0.000010 [0.000020]	0.000005	mg/L	0.0001
Total Calcium	14.20	0.05	17.10 [17.20]	0.05	mg/L	~
Total Cerium	0.002	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Cesium	0.00002	0.00001	0.00001 [0.00001]	0.00001	mg/L	~
Total Chromium	0.0015	0.0001	0.0008 [0.0009]	0.0001	mg/L	~
Total Cobalt	0.0003	0.0001	0.0001 [0.0001]	0.0001	mg/L	0.0009
Total Copper	0.0020	0.0002	0.0020 [0.0021]	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Iron	0.9	0.1	0.37 [0.39]	0.01	mg/L	0.3

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 506589

Sample Description	WBR - S - 06		JCRK - 01			
Sample Date	7/15/2023 4:00 PM		7/19/2023 8:50 AM			
Lab ID	1906649		1906650			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Lanthanum	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Lead	0.00059	0.00005	0.00015 [0.00017]	0.00005	mg/L	0.001
Total Lithium	0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Magnesium	3.100	0.004	3.670 [3.740]	0.004	mg/L	~
Total Manganese	0.0719	0.0001	0.0243 [0.0245]	0.0001	mg/L	~
Total Molybdenum	0.00015	0.00005	0.00018 [0.00021]	0.00005	mg/L	0.04
Total Nickel	0.0015	0.0005	<0.0005 [0.0005]	0.0005	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Potassium	0.31	0.05	0.48 [0.50]	0.05	mg/L	~
Total Rhodium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Rubidium	0.0013	0.0002	0.0014 [0.0014]	0.0002	mg/L	~
Total Scandium	0.002	0.001	0.002 [0.002]	0.001	mg/L	~
Total Selenium	0.00024	0.00005	0.00016 [0.00011]	0.00005	mg/L	0.1
Total Silicon	2.44	0.05	2.94 [3.08]	0.05	mg/L	~
Total Silver	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	0.0001
Total Sodium	1.23	0.05	2.70 [2.75]	0.05	mg/L	~
Total Strontium	0.0259	0.0002	0.0245 [0.0250]	0.0002	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 506589

Sample Description	WBR - S - 06		JCRK - 01			
Sample Date	7/15/2023 4:00 PM		7/19/2023 8:50 AM			
Lab ID	1906649		1906650			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Sulphur	2.3	0.5	3.0 [3.1]	0.5	mg/L	~
Total Tellurium	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	mg/L	~
Total Thallium	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	0.0003
Total Thorium	0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Total Tin	0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Total Titanium	0.0118	0.0003	0.0053 [0.0094]	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	0.03
Total Uranium	0.00008	0.00001	0.00007 [0.00007]	0.00001	mg/L	0.005
Total Vanadium	0.0016	0.0005	0.0007 [0.0008]	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Zinc	0.005	0.001	0.003 [0.004]	0.001	mg/L	0.02
Total Zirconium	0.0032	0.0002	0.0010 [0.0010]	0.0002	mg/L	0.004

Sample Description	MATR - 01		WBR - S - 04		WBR - S - 06		JCRK - 01			
Sample Date	7/16/2023 11:15 AM		7/14/2023 3:30 PM		7/15/2023 4:00 PM		7/19/2023 8:50 AM			
Lab ID	1906646		1906648		1906649		1906650			
MethylMercury	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.11	0.02	0.27	0.02	0.29	0.02	0.13 [0.12]	0.02	ng/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 506589

Sample Description	MATR - REF		MATR - 01		MATR - 02		WBR - S - 04			
Sample Date	7/19/2023 9:10 AM		7/16/2023 11:15 AM		7/16/2023 10:30 AM		7/14/2023 3:30 PM			
Lab ID	1906645		1906646		1906647		1906648			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	75	10	15	10	<10	10	45	10	mg/L	~
Total Suspended Solids	3.70	0.67	3.00	0.67	4.00	0.67	7.67	0.67	mg/L	~

Sample Description	WBR - S - 06		JCRK - 01			
Sample Date	7/15/2023 4:00 PM		7/19/2023 8:50 AM			
Lab ID	1906649		1906650			
Solids	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	25	10	35	10	mg/L	~
Total Suspended Solids	9.33	0.67	3.70	0.67	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 506589

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

Reproduction of Report: Report shall not be reproduced, except in full, without the approval of Testmark Laboratories Ltd.

ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	506922
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	WSP
Date Order Received:	7/24/2023	Analysis Started:	7/25/2023
Arrival Temperature:	24 °C	Analysis Completed:	8/4/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
WBR-S-07	1907861	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	7/17/2023	4:00 PM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237

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Canada Nickel Company Inc.

Work Order Number: 506922

Method	Lab	Description	Reference
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 506922

WORK ORDER RESULTS

Sample Description	WBR - S - 07
Sample Date	7/17/2023 4:00 PM
Lab ID	1907861

Anions	Result	MDL	Units	Criteria: PWQO
Chloride	0.2	0.2	mg/L	~
Fluoride	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	mg/L	~
Sulphate	0.8	0.5	mg/L	~

Sample Description	WBR - S - 07
Sample Date	7/17/2023 4:00 PM
Lab ID	1907861

Field Parameters	Result	MDL	Units	Criteria: PWQO
Field pH	6.59	N/A	pH	~
Field Temp	21.8	N/A	°C	~

Sample Description	WBR - S - 07
Sample Date	7/17/2023 4:00 PM
Lab ID	1907861

General Chemistry	Result	MDL	Units	Criteria: PWQO
Acidity	6	5	mg/L as CaCO3	~
Ammonia (as N)	0.06	0.01	mg/L	~
Conductivity	91	1	µS/cm	~
Dissolved Organic Carbon	36.0	0.8	mg/L	~

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Work Order Number: 506922

Sample Description	WBR - S - 07
Sample Date	7/17/2023 4:00 PM
Lab ID	1907861

General Chemistry	Result	MDL	Units	Criteria: PWQO
Free Cyanide	0.002 [0.002]	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	51	2	mg/L as CaCO3	~
pH	7.26	N/A	pH	~
Strong Acid Dissociable Cyanide	0.003	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	56.9	0.1	mg/L	~
Total Phosphorus (as P)	0.039 [0.037]	0.002	mg/L	~
Weak Acid Dissociable Cyanide	<0.001	0.001	mg/L	~

Sample Description	WBR - S - 07
Sample Date	7/17/2023 4:00 PM
Lab ID	1907861

Mercury (Trace)	Result	MDL	Units	Criteria: PWQO
Total Mercury	4.38	0.01	ng/L	200

Sample Description	WBR - S - 07
Sample Date	7/17/2023 4:00 PM
Lab ID	1907861

Mercury by CV	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01 [<0.01]	0.01	ug/L	0.2

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Canada Nickel Company Inc.

Work Order Number: 506922

Sample Description	WBR - S - 07
Sample Date	7/17/2023 4:00 PM
Lab ID	1907861

Metals (Dissolved - 0.2um)	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.122 [0.123]	0.001	mg/L	~

Sample Description	WBR - S - 07
Sample Date	7/17/2023 4:00 PM
Lab ID	1907861

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.133 [0.133]	0.001	mg/L	~
Dissolved Antimony	0.0001 [0.0001]	0.0001	mg/L	~
Dissolved Arsenic	0.0009 [0.0009]	0.0001	mg/L	~
Dissolved Barium	0.0127 [0.0126]	0.0001	mg/L	~
Dissolved Beryllium	<0.00002 [<0.00002]	0.00002	mg/L	~
Dissolved Bismuth	<0.00005 [<0.00005]	0.00005	mg/L	~
Dissolved Boron	0.004 [0.004]	0.002	mg/L	~
Dissolved Cadmium	0.000030 [0.000040]	0.000005	mg/L	~
Dissolved Calcium	15.70 [15.50]	0.05	mg/L	~
Dissolved Cerium	0.001 [0.001]	0.001	mg/L	~
Dissolved Cesium	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Chromium	0.0013 [0.0012]	0.0001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 506922

Sample Description	WBR - S - 07
Sample Date	7/17/2023 4:00 PM
Lab ID	1907861

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Cobalt	0.0002 [0.0002]	0.0001	mg/L	~
Dissolved Copper	0.0072 [0.0072]	0.0002	mg/L	~
Dissolved Europium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Gallium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Iron	0.5 [0.5]	0.1	mg/L	~
Dissolved Lanthanum	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Lead	0.00028 [0.00030]	0.00005	mg/L	~
Dissolved Lithium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Magnesium	3.450 [3.400]	0.004	mg/L	~
Dissolved Manganese	0.0635 [0.0619]	0.0001	mg/L	~
Dissolved Mercury	<0.0001 [<0.0001]	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00015 [0.00015]	0.00005	mg/L	~
Dissolved Nickel	0.0009 [0.0010]	0.0005	mg/L	~
Dissolved Niobium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Phosphorus	<0.05 [<0.05]	0.05	mg/L	~
Dissolved Potassium	0.26 [0.25]	0.05	mg/L	~
Dissolved Rhodium	<0.001 [<0.001]	0.001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 506922

Sample Description	WBR - S - 07
Sample Date	7/17/2023 4:00 PM
Lab ID	1907861

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Rubidium	0.0009 [0.0009]	0.0002	mg/L	~
Dissolved Scandium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Selenium	<0.00005 [<0.00005]	0.00005	mg/L	~
Dissolved Silicon	1.58 [1.53]	0.05	mg/L	~
Dissolved Silver	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Sodium	1.34 [1.32]	0.05	mg/L	~
Dissolved Strontium	0.0242 [0.0259]	0.0002	mg/L	~
Dissolved Sulfur	<0.5 [<0.5]	0.5	mg/L	~
Dissolved Tellurium	<0.0002 [<0.0002]	0.0002	mg/L	~
Dissolved Thallium	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Thorium	0.0001 [0.0002]	0.0001	mg/L	~
Dissolved Tin	0.0003 [0.0003]	0.0001	mg/L	~
Dissolved Titanium	0.0053 [0.0058]	0.0003	mg/L	~
Dissolved Tungsten	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Uranium	0.00008 [0.00008]	0.00001	mg/L	~
Dissolved Vanadium	0.0014 [0.0014]	0.0005	mg/L	~
Dissolved Yttrium	<0.001 [<0.001]	0.001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 506922

Sample Description	WBR - S - 07
Sample Date	7/17/2023 4:00 PM
Lab ID	1907861

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Zinc	0.004 [0.004]	0.001	mg/L	~
Dissolved Zirconium	0.0014 [0.0017]	0.0002	mg/L	~

Sample Description	WBR - S - 07
Sample Date	7/17/2023 4:00 PM
Lab ID	1907861

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.486 [0.486]	0.001	mg/L	0.075
Total Antimony	0.0003 [0.0003]	0.0001	mg/L	0.02
Total Arsenic	0.0012 [0.0012]	0.0001	mg/L	0.005
Total Barium	0.0095 [0.0094]	0.0001	mg/L	~
Total Beryllium	0.00004 [0.00004]	0.00002	mg/L	0.011
Total Bismuth	0.00025 [0.00017]	0.00005	mg/L	~
Total Boron	0.005 [0.005]	0.002	mg/L	0.2
Total Cadmium	0.000050 [0.000050]	0.000005	mg/L	0.0001
Total Calcium	16.20 [16.20]	0.05	mg/L	~
Total Cerium	0.002 [0.002]	0.001	mg/L	~
Total Cesium	0.00003 [0.00003]	0.00001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 506922

Sample Description	WBR - S - 07
Sample Date	7/17/2023 4:00 PM
Lab ID	1907861

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Chromium	0.0017 [0.0016]	0.0001	mg/L	~
Total Cobalt	0.0005 [0.0006]	0.0001	mg/L	0.0009
Total Copper	0.0023 [0.0023]	0.0002	mg/L	0.001
Total Europium	<0.001 [<0.001]	0.001	mg/L	~
Total Gallium	<0.001 [<0.001]	0.001	mg/L	~
Total Iron	1.23 [1.23]	0.01	mg/L	0.3
Total Lanthanum	<0.001 [<0.001]	0.001	mg/L	~
Total Lead	0.00064 [0.00064]	0.00005	mg/L	0.001
Total Lithium	0.001 [0.001]	0.001	mg/L	~
Total Magnesium	3.640 [3.590]	0.004	mg/L	~
Total Manganese	0.1020 [0.1020]	0.0001	mg/L	~
Total Molybdenum	0.00026 [0.00020]	0.00005	mg/L	0.04
Total Nickel	0.0016 [0.0015]	0.0005	mg/L	0.025
Total Niobium	<0.001 [<0.001]	0.001	mg/L	~
Total Potassium	0.33 [0.32]	0.05	mg/L	~
Total Rhodium	<0.001 [<0.001]	0.001	mg/L	~
Total Rubidium	0.0016 [0.0016]	0.0002	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 506922

Sample Description	WBR - S - 07
Sample Date	7/17/2023 4:00 PM
Lab ID	1907861

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Scandium	<0.001 [<0.001]	0.001	mg/L	~
Total Selenium	0.00029 [0.00014]	0.00005	mg/L	0.1
Total Silicon	2.03 [2.03]	0.05	mg/L	~
Total Silver	0.00001 [0.00001]	0.00001	mg/L	0.0001
Total Sodium	1.36 [1.34]	0.05	mg/L	~
Total Strontium	0.0285 [0.0286]	0.0002	mg/L	~
Total Sulphur	<0.5 [<0.5]	0.5	mg/L	~
Total Tellurium	<0.0002 [0.0002]	0.0002	mg/L	~
Total Thallium	0.00001 [<0.00001]	0.00001	mg/L	0.0003
Total Thorium	0.0003 [0.0003]	0.0001	mg/L	~
Total Tin	0.0005 [0.0003]	0.0001	mg/L	~
Total Titanium	0.0145 [0.0144]	0.0003	mg/L	~
Total Tungsten	0.0003 [0.0003]	0.0001	mg/L	0.03
Total Uranium	0.00009 [0.00010]	0.00001	mg/L	0.005
Total Vanadium	0.0020 [0.0020]	0.0005	mg/L	0.006
Total Yttrium	<0.001 [<0.001]	0.001	mg/L	~
Total Zinc	0.009 [0.010]	0.001	mg/L	0.02

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 506922

Sample Description	WBR - S - 07			
Sample Date	7/17/2023 4:00 PM			
Lab ID	1907861			
Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Zirconium	0.0039 [0.0040]	0.0002	mg/L	0.004

Sample Description	WBR - S - 07			
Sample Date	7/17/2023 4:00 PM			
Lab ID	1907861			
MethylMercury	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.24 [0.23]	0.02	ng/L	~

Sample Description	WBR - S - 07			
Sample Date	7/17/2023 4:00 PM			
Lab ID	1907861			
Solids	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	120	10	mg/L	~
Total Suspended Solids	12.70	0.67	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 506922

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	507838
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	AG,DD, DA,JP
Date Order Received:	7/31/2023	Analysis Started:	8/1/2023
Arrival Temperature:	21 °C	Analysis Completed:	8/30/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
NDR-S-02	1911305	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	7/31/2023	8:30 AM
PC-01	1911306	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	7/31/2023	12:45 PM
WBR-S-Ref	1911307	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	7/31/2023	12:30 PM
BS-SW-01	1911308	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	7/31/2023	10:20 AM
Field Blank	1911309	Water	Grab		7/31/2023	12:00 AM
Travel Blank	1911538	Water	Grab		7/31/2023	12:00 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 507838

Method	Lab	Description	Reference
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (0.2um) (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 507838

WORK ORDER RESULTS

Sample Description	NDR - S - 02		PC - 01		WBR - S - Ref		BS - SW - 01			
Sample Date	7/31/2023 8:30 AM		7/31/2023 12:45 PM		7/31/2023 12:30 PM		7/31/2023 10:20 AM			
Lab ID	1911305		1911306		1911307		1911308			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	1.9	0.2	0.3 [0.3]	0.2	0.3	0.2	0.3	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05 [<0.05]	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1 [<0.1]	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01 [<0.01]	0.01	mg/L	~
Sulphate	<0.5	0.5	0.5 [0.5]	0.5	0.8	0.5	<0.5	0.5	mg/L	~

Sample Description	Field Blank		Travel Blank			
Sample Date	7/31/2023 12:00 AM		7/31/2023 12:00 AM			
Lab ID	1911309		1911538			
Anions	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	<0.2	0.2	<0.2	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	<0.5	0.5	<0.5	0.5	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 507838

Sample Description	NDR - S - 02		PC - 01		WBR - S - Ref		BS - SW - 01			
Sample Date	7/31/2023 8:30 AM		7/31/2023 12:45 PM		7/31/2023 12:30 PM		7/31/2023 10:20 AM			
Lab ID	1911305		1911306		1911307		1911308			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	5.42	N/A	5.45	N/A	5.07	N/A	3.72	N/A	pH	~
Field Temp	17.44	N/A	14.53	N/A	18.71	N/A	15.62	N/A	°C	~

Sample Description	NDR - S - 02		PC - 01		WBR - S - Ref		BS - SW - 01			
Sample Date	7/31/2023 8:30 AM		7/31/2023 12:45 PM		7/31/2023 12:30 PM		7/31/2023 10:20 AM			
Lab ID	1911305		1911306		1911307		1911308			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	8	5	8	5	7	5	21	5	mg/L as CaCO3	~
Ammonia (as N)	0.039	0.005	0.044	0.005	0.056	0.005	0.069	0.005	mg/L	~
Conductivity	124	1	125	1	107	1	39	1	µS/cm	~
Dissolved Organic Carbon	25	2	23	2	35	2	41	2	mg/L	~
Free Cyanide			0.003	0.001	0.006	0.001	0.003	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	56	2	62	2	51	2	13	2	mg/L as CaCO3	~
pH	7.24	N/A	7.27	N/A	7.31	N/A	5.63	N/A	pH	~
Strong Acid Dissociable Cyanide			0.006	0.002	0.006	0.002	0.005	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	66.1	0.1	67.1	0.1	61.9	0.1	22.2	0.1	mg/L	~
Total Phosphorus (as P)	0.039	0.002	0.022	0.002	0.052	0.002	0.022	0.002	mg/L	~
Weak Acid Dissociable Cyanide			0.007	0.001	0.008	0.001	0.007	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 507838

Sample Description	Field Blank		Travel Blank			
Sample Date	7/31/2023 12:00 AM		7/31/2023 12:00 AM			
Lab ID	1911309		1911538			
General Chemistry	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	<5	5	<5	5	mg/L as CaCO3	~
Ammonia (as N)	<0.005	0.005	<0.005 [<0.005]	0.005	mg/L	~
Conductivity	7	1	2	1	µS/cm	~
Dissolved Organic Carbon	0.4	0.4	0.4	0.4	mg/L	~
Free Cyanide	0.002	0.001	<0.001	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	4	2	3	2	mg/L as CaCO3	~
pH	5.75	N/A	5.33	N/A	pH	~
Strong Acid Dissociable Cyanide	0.003 [0.002]	0.002	<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	<0.1	0.1	<0.1	0.1	mg/L	~
Total Phosphorus (as P)	0.005	0.002	<0.002	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.005	0.001	0.006	0.001	mg/L	~

Sample Description	PC - 01		WBR - S - Ref		BS - SW - 01		Field Blank			
Sample Date	7/31/2023 12:45 PM		7/31/2023 12:30 PM		7/31/2023 10:20 AM		7/31/2023 12:00 AM			
Lab ID	1911306		1911307		1911308		1911309			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	3.16	0.01	4.57	0.01	1.65	0.01	0.11	0.01	ng/L	200

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 507838

Sample Description	Travel Blank			
Sample Date	7/31/2023 12:00 AM			
Lab ID	1911538			
Mercury (Trace)	Result	MDL	Units	Criteria: PWQO
Total Mercury	0.11	0.01	ng/L	200

Sample Description	PC - 01		WBR - S - Ref		BS - SW - 01		Field Blank			
Sample Date	7/31/2023 12:45 PM		7/31/2023 12:30 PM		7/31/2023 10:20 AM		7/31/2023 12:00 AM			
Lab ID	1911306		1911307		1911308		1911309			
Mercury by CV	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	ug/L	0.2

Sample Description	Travel Blank			
Sample Date	7/31/2023 12:00 AM			
Lab ID	1911538			
Mercury by CV	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	ug/L	0.2

Sample Description	NDR - S - 02		PC - 01		WBR - S - Ref		BS - SW - 01			
Sample Date	7/31/2023 8:30 AM		7/31/2023 12:45 PM		7/31/2023 12:30 PM		7/31/2023 10:20 AM			
Lab ID	1911305		1911306		1911307		1911308			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.028	0.001	0.046	0.001	0.096	0.001	0.112	0.001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 507838

Sample Description	Field Blank		Travel Blank			
Sample Date	7/31/2023 12:00 AM		7/31/2023 12:00 AM			
Lab ID	1911309		1911538			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~

Sample Description	NDR - S - 02		PC - 01		WBR - S - Ref		BS - SW - 01			
Sample Date	7/31/2023 8:30 AM		7/31/2023 12:45 PM		7/31/2023 12:30 PM		7/31/2023 10:20 AM			
Lab ID	1911305		1911306		1911307		1911308			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.045	0.001	0.073	0.001	0.131	0.001	0.100	0.001	mg/L	~
Dissolved Antimony	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Arsenic	0.0009	0.0001	0.0008	0.0001	0.0014	0.0001	0.0008	0.0001	mg/L	~
Dissolved Barium	0.0171	0.0001	0.0074	0.0001	0.0129	0.0001	0.0085	0.0001	mg/L	~
Dissolved Beryllium	<0.00002	0.00002	<0.00002	0.00002	0.00002	0.00002	<0.00002	0.00002	mg/L	~
Dissolved Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Boron	<0.002	0.002	0.004	0.002	0.004	0.002	<0.002	0.002	mg/L	~
Dissolved Cadmium	0.000009	0.000005	0.000020	0.000005	0.000030	0.000005	0.000020	0.000005	mg/L	~
Dissolved Calcium	17.30	0.05	17.70	0.05	16.60	0.05	5.61	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001	0.001	0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0009	0.0001	0.0010	0.0001	0.0011	0.0001	0.0010	0.0001	mg/L	~
Dissolved Cobalt	0.0001	0.0001	0.0002	0.0001	0.0002	0.0001	0.0003	0.0001	mg/L	~
Dissolved Copper	0.0015	0.0002	0.0021	0.0002	0.0026	0.0002	0.0031	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.30	0.01	0.39	0.01	0.62	0.01	0.48	0.01	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 507838

Sample Description	NDR - S - 02		PC - 01		WBR - S - Ref		BS - SW - 01			
Sample Date	7/31/2023 8:30 AM		7/31/2023 12:45 PM		7/31/2023 12:30 PM		7/31/2023 10:20 AM			
Lab ID	1911305		1911306		1911307		1911308			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	0.00015	0.00005	0.00012	0.00005	0.00026	0.00005	0.00030	0.00005	mg/L	~
Dissolved Lithium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Magnesium	3.910	0.004	4.210	0.004	3.390	0.004	1.400	0.004	mg/L	~
Dissolved Manganese	0.0776	0.0001	0.0451	0.0001	0.0437	0.0001	0.0562	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00018	0.00005	0.00018	0.00005	0.00007	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Nickel	0.0006	0.0005	0.0006	0.0005	0.0010	0.0005	0.0006	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.25	0.05	0.43	0.05	0.32	0.05	0.05	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	0.0006	0.0002	0.0014	0.0002	0.0010	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Scandium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Selenium	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Silicon	1.06	0.05	1.62	0.05	1.40	0.05	1.71	0.05	mg/L	~
Dissolved Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Sodium	1.77	0.05	1.75	0.05	1.17	0.05	0.05	0.05	mg/L	~
Dissolved Strontium	0.0241	0.0002	0.0327	0.0002	0.0260	0.0002	0.0099	0.0002	mg/L	~
Dissolved Sulfur	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	<0.0001	0.0001	0.0002	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Tin	0.0002	0.0001	0.0003	0.0001	0.0005	0.0001	0.0002	0.0001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 507838

Sample Description	NDR - S - 02		PC - 01		WBR - S - Ref		BS - SW - 01			
Sample Date	7/31/2023 8:30 AM		7/31/2023 12:45 PM		7/31/2023 12:30 PM		7/31/2023 10:20 AM			
Lab ID	1911305		1911306		1911307		1911308			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Titanium	0.0024	0.0003	0.0023	0.0003	0.0061	0.0003	0.0030	0.0003	mg/L	~
Dissolved Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Uranium	0.00005	0.00001	0.00006	0.00001	0.00008	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Vanadium	0.0007	0.0005	0.0006	0.0005	0.0010	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.003	0.001	0.003	0.001	0.003	0.001	0.006	0.001	mg/L	~
Dissolved Zirconium	0.0010	0.0002	0.0012	0.0002	0.0027	0.0002	0.0006	0.0002	mg/L	~

Sample Description	Field Blank		Travel Blank			
Sample Date	7/31/2023 12:00 AM		7/31/2023 12:00 AM			
Lab ID	1911309		1911538			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Antimony	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Arsenic	<0.0001 [<0.0001]	0.0001	0.0004	0.0001	mg/L	~
Dissolved Barium	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Beryllium	<0.00002 [<0.00002]	0.00002	<0.00002	0.00002	mg/L	~
Dissolved Bismuth	<0.00005 [<0.00005]	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Boron	<0.002 [<0.002]	0.002	<0.002	0.002	mg/L	~
Dissolved Cadmium	<0.000005 [<0.000005]	0.000005	<0.000005	0.000005	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 507838

Sample Description	Field Blank		Travel Blank			
Sample Date	7/31/2023 12:00 AM		7/31/2023 12:00 AM			
Lab ID	1911309		1911538			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Calcium	<0.05 [<0.05]	0.05	<0.05	0.05	mg/L	~
Dissolved Cerium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Cobalt	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Copper	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Europium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	<0.01 [<0.01]	0.01	<0.01	0.01	mg/L	~
Dissolved Lanthanum	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	<0.00005 [<0.00005]	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Lithium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Magnesium	<0.004 [<0.004]	0.004	<0.004	0.004	mg/L	~
Dissolved Manganese	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Mercury	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	<0.00005 [<0.00005]	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Nickel	<0.0005 [<0.0005]	0.0005	<0.0005	0.0005	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 507838

Sample Description	Field Blank		Travel Blank			
Sample Date	7/31/2023 12:00 AM		7/31/2023 12:00 AM			
Lab ID	1911309		1911538			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Niobium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05 [<0.05]	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	<0.05 [<0.05]	0.05	<0.05	0.05	mg/L	~
Dissolved Rhodium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Scandium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Selenium	<0.00005 [<0.00005]	0.00005	0.00108	0.00005	mg/L	~
Dissolved Silicon	0.10 [<0.05]	0.05	<0.05	0.05	mg/L	~
Dissolved Silver	0.00002 [0.00002]	0.00001	0.00001	0.00001	mg/L	~
Dissolved Sodium	<0.05 [<0.05]	0.05	<0.05	0.05	mg/L	~
Dissolved Strontium	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Sulfur	<0.5 [<0.5]	0.5	<0.5	0.5	mg/L	~
Dissolved Tellurium	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Thallium	<0.00001 [<0.00001]	0.00001	0.00002	0.00001	mg/L	~
Dissolved Thorium	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Tin	0.0001 [0.0001]	0.0001	0.0001	0.0001	mg/L	~
Dissolved Titanium	<0.0003 [<0.0003]	0.0003	<0.0003	0.0003	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 507838

Sample Description	Field Blank		Travel Blank			
Sample Date	7/31/2023 12:00 AM		7/31/2023 12:00 AM			
Lab ID	1911309		1911538			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Tungsten	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Uranium	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Vanadium	<0.0005 [<0.0005]	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Yttrium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Zirconium	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	mg/L	~

Sample Description	NDR - S - 02		PC - 01		WBR - S - Ref		BS - SW - 01			
Sample Date	7/31/2023 8:30 AM		7/31/2023 12:45 PM		7/31/2023 12:30 PM		7/31/2023 10:20 AM			
Lab ID	1911305		1911306		1911307		1911308			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.273	0.001	0.128	0.001	0.378	0.001	0.119	0.001	mg/L	0.075
Total Antimony	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.02
Total Arsenic	0.0010	0.0001	0.0008	0.0001	0.0014	0.0001	0.0008	0.0001	mg/L	0.005
Total Barium	0.0080	0.0001	0.0074	0.0001	0.0087	0.0001	0.0037	0.0001	mg/L	~
Total Beryllium	<0.00002	0.00002	<0.00002	0.00002	0.00004	0.00002	<0.00002	0.00002	mg/L	0.011
Total Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Total Boron	<0.002	0.002	0.003	0.002	0.004	0.002	<0.002	0.002	mg/L	0.2
Total Cadmium	0.000030	0.000005	0.000020	0.000005	0.000050	0.000005	0.000020	0.000005	mg/L	0.0001
Total Calcium	17.40	0.05	17.50	0.05	16.80	0.05	5.75	0.05	mg/L	~
Total Cerium	<0.001	0.001	<0.001	0.001	0.002	0.001	<0.001	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 507838

Sample Description	NDR - S - 02		PC - 01		WBR - S - Ref		BS - SW - 01			
Sample Date	7/31/2023 8:30 AM		7/31/2023 12:45 PM		7/31/2023 12:30 PM		7/31/2023 10:20 AM			
Lab ID	1911305		1911306		1911307		1911308			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Cesium	0.00002	0.00001	<0.00001	0.00001	0.00003	0.00001	<0.00001	0.00001	mg/L	~
Total Chromium	0.0008	0.0001	0.0006	0.0001	0.0012	0.0001	0.0006	0.0001	mg/L	~
Total Cobalt	0.0003	0.0001	0.0002	0.0001	0.0004	0.0001	0.0003	0.0001	mg/L	0.0009
Total Copper	0.0012	0.0002	0.0012	0.0002	0.0029	0.0002	0.0010	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.58	0.01	0.48	0.01	0.8	0.1	0.5	0.1	mg/L	0.3
Total Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00037	0.00005	0.00014	0.00005	0.00054	0.00005	0.00033	0.00005	mg/L	0.001
Total Lithium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Magnesium	4.030	0.004	4.150	0.004	3.510	0.004	1.420	0.004	mg/L	~
Total Manganese	0.1010	0.0001	0.0456	0.0001	0.0631	0.0001	0.0584	0.0001	mg/L	~
Total Mercury	<0.0001	0.0001							mg/L	0.0002
Total Molybdenum	0.00011	0.00005	0.00015	0.00005	0.00007	0.00005	0.00005	0.00005	mg/L	0.04
Total Nickel	0.0005	0.0005	<0.0005	0.0005	0.0013	0.0005	<0.0005	0.0005	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.29	0.05	0.45	0.05	0.36	0.05	<0.05	0.05	mg/L	~
Total Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	0.0010	0.0002	0.0015	0.0002	0.0014	0.0002	<0.0002	0.0002	mg/L	~
Total Scandium	<0.001	0.001	<0.001	0.001	0.001	0.001	<0.001	0.001	mg/L	~
Total Selenium	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	0.1
Total Silicon	1.23	0.05	1.61	0.05	1.64	0.05	1.51	0.05	mg/L	~
Total Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0001
Total Sodium	1.80	0.05	1.77	0.05	1.19	0.05	0.06	0.05	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 507838

Sample Description	NDR - S - 02		PC - 01		WBR - S - Ref		BS - SW - 01			
Sample Date	7/31/2023 8:30 AM		7/31/2023 12:45 PM		7/31/2023 12:30 PM		7/31/2023 10:20 AM			
Lab ID	1911305		1911306		1911307		1911308			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Strontium	0.0249	0.0002	0.0334	0.0002	0.0266	0.0002	0.0098	0.0002	mg/L	~
Total Sulphur	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	mg/L	~
Total Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Total Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0003
Total Thorium	<0.0001	0.0001	<0.0001	0.0001	0.0002	0.0001	<0.0001	0.0001	mg/L	~
Total Tin	0.0002	0.0001	0.0003	0.0001	0.0002	0.0001	0.0002	0.0001	mg/L	~
Total Titanium	0.0094	0.0003	0.0047	0.0003	0.0119	0.0003	0.0039	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00006	0.00001	0.00006	0.00001	0.00009	0.00001	0.00001	0.00001	mg/L	0.005
Total Vanadium	0.0010	0.0005	0.0006	0.0005	0.0015	0.0005	<0.0005	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.004	0.001	0.008	0.001	0.005	0.001	0.008	0.001	mg/L	0.02
Total Zirconium	0.0020	0.0002	0.0011	0.0002	0.0040	0.0002	0.0006	0.0002	mg/L	0.004

Sample Description	Field Blank		Travel Blank			
Sample Date	7/31/2023 12:00 AM		7/31/2023 12:00 AM			
Lab ID	1911309		1911538			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.002 [0.002]	0.001	0.003	0.001	mg/L	0.075
Total Antimony	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	0.02
Total Arsenic	<0.0001 [<0.0001]	0.0001	0.0004	0.0001	mg/L	0.005
Total Barium	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 507838

Sample Description	Field Blank		Travel Blank			
Sample Date	7/31/2023 12:00 AM		7/31/2023 12:00 AM			
Lab ID	1911309		1911538			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Beryllium	<0.00002 [<0.00002]	0.00002	<0.00002	0.00002	mg/L	0.011
Total Bismuth	<0.00005 [<0.00005]	0.00005	<0.00005	0.00005	mg/L	~
Total Boron	<0.002 [<0.002]	0.002	<0.002	0.002	mg/L	0.2
Total Cadmium	<0.000005 [<0.000005]	0.000005	<0.000005	0.000005	mg/L	0.0001
Total Calcium	<0.05 [<0.05]	0.05	<0.05	0.05	mg/L	~
Total Cerium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Total Cesium	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	mg/L	~
Total Chromium	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	~
Total Cobalt	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	0.0009
Total Copper	<0.0002 [<0.0002]	0.0002	0.0002	0.0002	mg/L	0.001
Total Europium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Total Iron	<0.01 [<0.01]	0.01	<0.01	0.01	mg/L	0.3
Total Lanthanum	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00005 [<0.00005]	0.00005	<0.00005	0.00005	mg/L	0.001
Total Lithium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Total Magnesium	<0.004 [<0.004]	0.004	<0.004	0.004	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 507838

Sample Description	Field Blank		Travel Blank			
Sample Date	7/31/2023 12:00 AM		7/31/2023 12:00 AM			
Lab ID	1911309		1911538			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Manganese	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	~
Total Molybdenum	<0.00005 [<0.00005]	0.00005	0.00180	0.00005	mg/L	0.04
Total Nickel	<0.0005 [<0.0005]	0.0005	<0.0005	0.0005	mg/L	0.025
Total Niobium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Total Potassium	<0.05 [<0.05]	0.05	<0.05	0.05	mg/L	~
Total Rhodium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Total Rubidium	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	mg/L	~
Total Scandium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Total Selenium	<0.00005 [<0.00005]	0.00005	0.00081	0.00005	mg/L	0.1
Total Silicon	0.06 [0.06]	0.05	0.06	0.05	mg/L	~
Total Silver	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	mg/L	0.0001
Total Sodium	<0.05 [<0.05]	0.05	<0.05	0.05	mg/L	~
Total Strontium	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	mg/L	~
Total Sulphur	<0.5 [<0.5]	0.5	<0.5	0.5	mg/L	~
Total Tellurium	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	mg/L	~
Total Thallium	<0.00001 [<0.00001]	0.00001	0.00001	0.00001	mg/L	0.0003
Total Thorium	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 507838

Sample Description	Field Blank		Travel Blank			
Sample Date	7/31/2023 12:00 AM		7/31/2023 12:00 AM			
Lab ID	1911309		1911538			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Tin	0.0002 [0.0001]	0.0001	0.0002	0.0001	mg/L	~
Total Titanium	<0.0003 [<0.0003]	0.0003	<0.0003	0.0003	mg/L	~
Total Tungsten	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	mg/L	0.005
Total Vanadium	<0.0005 [<0.0005]	0.0005	<0.0005	0.0005	mg/L	0.006
Total Yttrium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Total Zinc	<0.001 [<0.001]	0.001	0.002	0.001	mg/L	0.02
Total Zirconium	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	mg/L	0.004

Sample Description	PC - 01		WBR - S - Ref		BS - SW - 01		Field Blank			
Sample Date	7/31/2023 12:45 PM		7/31/2023 12:30 PM		7/31/2023 10:20 AM		7/31/2023 12:00 AM			
Lab ID	1911306		1911307		1911308		1911309			
MethylMercury	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.25	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	ng/L	~

Sample Description	Travel Blank			
Sample Date	7/31/2023 12:00 AM			
Lab ID	1911538			
MethylMercury	Result	MDL	Units	Criteria: PWQO
Methyl mercury	<0.02	0.02	ng/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 507838

Sample Description	NDR - S - 02		PC - 01		WBR - S - Ref		BS - SW - 01			
Sample Date	7/31/2023 8:30 AM		7/31/2023 12:45 PM		7/31/2023 12:30 PM		7/31/2023 10:20 AM			
Lab ID	1911305		1911306		1911307		1911308			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	130	10	115	10	145	10	110	10	mg/L	~
Total Suspended Solids	9	2	5.30	0.67	11.0	1.3	5.3	1.3	mg/L	~

Sample Description	Field Blank		Travel Blank			
Sample Date	7/31/2023 12:00 AM		7/31/2023 12:00 AM			
Lab ID	1911309		1911538			
Solids	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	<10	10	1010	10	mg/L	~
Total Suspended Solids	<0.67	0.67	1.00	0.67	mg/L	~

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Organic Soil Analysis: Data reported for organic analysis in soils samples are corrected for moisture content.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	507996
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	AG,DD, DA,JP
Date Order Received:	8/2/2023	Analysis Started:	8/2/2023
Arrival Temperature:	18 °C	Analysis Completed:	8/30/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
MARLk	1911839	Water	Grab		8/2/2023	9:45 AM
NDR-S-06	1911840	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	8/2/2023	10:15 AM
JC-S-01	1911841	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	8/2/2023	10:45 AM
WBR-S-04	1911842	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	8/1/2023	9:45 AM
WBR-P-03	1911843	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	8/1/2023	1:35 PM
WBR-P-04	1911844	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	8/1/2023	2:15 PM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A

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Canada Nickel Company Inc.

Work Order Number: 507996

Method	Lab	Description	Reference
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (0.2um) (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

1335 Riverside Drive, Timmins, ON, P4R 1A6
Phone: (705) 531-1121 Fax: (705) 531-1125 Web: www.testmark.ca

CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 507996

WORK ORDER RESULTS

Sample Description	MARLk		NDR - S - 06		JC - S - 01		WBR - S - 04			
Sample Date	8/2/2023 9:45 AM		8/2/2023 10:15 AM		8/2/2023 10:45 AM		8/1/2023 9:45 AM			
Lab ID	1911839		1911840		1911841		1911842			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	0.2	0.2	3.5	0.2	34.5	0.2	0.3	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	<0.5	0.5	<0.5	0.5	<0.5	0.5	0.8	0.5	mg/L	~

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	8/1/2023 1:35 PM		8/1/2023 2:15 PM			
Lab ID	1911843		1911844			
Anions	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	<0.2	0.2	<0.2	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	<0.5	0.5	<0.5	0.5	mg/L	~

Sample Description	MARLk		NDR - S - 06		JC - S - 01		WBR - S - 04			
Sample Date	8/2/2023 9:45 AM		8/2/2023 10:15 AM		8/2/2023 10:45 AM		8/1/2023 9:45 AM			
Lab ID	1911839		1911840		1911841		1911842			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	5.57	N/A	5.8	N/A	4.53	N/A	7.34	N/A	pH	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 507996

Sample Description	MARLk		NDR - S - 06		JC - S - 01		WBR - S - 04			
Sample Date	8/2/2023 9:45 AM		8/2/2023 10:15 AM		8/2/2023 10:45 AM		8/1/2023 9:45 AM			
Lab ID	1911839		1911840		1911841		1911842			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field Temp	17.05	N/A	17.69	N/A	15	N/A	15.2	N/A	°C	~

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	8/1/2023 1:35 PM		8/1/2023 2:15 PM			
Lab ID	1911843		1911844			
Field Parameters	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	7.57	N/A	5.42	N/A	pH	~
Field Temp	23.4	N/A	17	N/A	°C	~

Sample Description	MARLk		NDR - S - 06		JC - S - 01		WBR - S - 04			
Sample Date	8/2/2023 9:45 AM		8/2/2023 10:15 AM		8/2/2023 10:45 AM		8/1/2023 9:45 AM			
Lab ID	1911839		1911840		1911841		1911842			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	7	5	9	5	11	5	8	5	mg/L as CaCO3	~
Ammonia (as N)	0.021	0.005	0.040	0.005	0.059	0.005	0.044	0.005	mg/L	~
Conductivity	108	1	154	1	158	1	128	1	µS/cm	~
Dissolved Organic Carbon	19.7	0.4	30	2	46	2	33	2	mg/L	~
Free Cyanide	0.004	0.001	0.005	0.001	0.005 [0.005]	0.001	0.004	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	54	2	69	2	14	2	62	2	mg/L as CaCO3	~
pH	7.32	N/A	7.34	N/A	6	N/A	7.34	N/A	pH	~
Strong Acid Dissociable Cyanide	0.003	0.002	0.003	0.002	0.003	0.002	0.003	0.002	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 507996

Sample Description	MARLk		NDR - S - 06		JC - S - 01		WBR - S - 04			
Sample Date	8/2/2023 9:45 AM		8/2/2023 10:15 AM		8/2/2023 10:45 AM		8/1/2023 9:45 AM			
Lab ID	1911839		1911840		1911841		1911842			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Hardness (as CaCO3) (Calc.)	57.5	0.1	78.5	0.1	30.4	0.1	66.9	0.1	mg/L	~
Total Phosphorus (as P)	0.014	0.002	0.047	0.002	0.013	0.002	0.040	0.002	mg/L	~
Weak Acid Dissociable Cyanide	<0.001	0.001	<0.001	0.001	0.003	0.001	0.005	0.001	mg/L	~

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	8/1/2023 1:35 PM		8/1/2023 2:15 PM			
Lab ID	1911843		1911844			
General Chemistry	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	9	5	14	5	mg/L as CaCO3	~
Ammonia (as N)	0.046	0.005	0.055	0.005	mg/L	~
Conductivity	39	1	31	1	µS/cm	~
Dissolved Organic Carbon	36	2	45 [45]	2	mg/L	~
M-Alkalinity (pH 4.5)	16	2	6	2	mg/L as CaCO3	~
pH	6.33	N/A	5.27	N/A	pH	~
Total Hardness (as CaCO3) (Calc.)	23.8	0.1	16.3	0.1	mg/L	~
Total Phosphorus (as P)	0.027	0.002	0.023	0.002	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 507996

Sample Description	MARLk		NDR - S - 06		JC - S - 01		WBR - S - 04			
Sample Date	8/2/2023 9:45 AM		8/2/2023 10:15 AM		8/2/2023 10:45 AM		8/1/2023 9:45 AM			
Lab ID	1911839		1911840		1911841		1911842			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	1.94	0.01	2.05	0.01	2.84	0.01	3.28	0.01	ng/L	200

Sample Description	MARLk		NDR - S - 06		JC - S - 01		WBR - S - 04			
Sample Date	8/2/2023 9:45 AM		8/2/2023 10:15 AM		8/2/2023 10:45 AM		8/1/2023 9:45 AM			
Lab ID	1911839		1911840		1911841		1911842			
Mercury by CV	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	ug/L	0.2

Sample Description	MARLk		NDR - S - 06		JC - S - 01		WBR - S - 04			
Sample Date	8/2/2023 9:45 AM		8/2/2023 10:15 AM		8/2/2023 10:45 AM		8/1/2023 9:45 AM			
Lab ID	1911839		1911840		1911841		1911842			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.018	0.001	0.037	0.001	0.130	0.001	0.079	0.001	mg/L	~

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	8/1/2023 1:35 PM		8/1/2023 2:15 PM			
Lab ID	1911843		1911844			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.133	0.001	0.106	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 507996

Sample Description	MARLk		NDR - S - 06		JC - S - 01		WBR - S - 04			
Sample Date	8/2/2023 9:45 AM		8/2/2023 10:15 AM		8/2/2023 10:45 AM		8/1/2023 9:45 AM			
Lab ID	1911839		1911840		1911841		1911842			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.024	0.001	0.069	0.001	0.133	0.001	0.117	0.001	mg/L	~
Dissolved Antimony	<0.0001	0.0001	0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Arsenic	0.0006	0.0001	0.0011	0.0001	0.0008	0.0001	0.0012	0.0001	mg/L	~
Dissolved Barium	0.0146	0.0001	0.0184	0.0001	0.0179	0.0001	0.0107	0.0001	mg/L	~
Dissolved Beryllium	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	0.00002	0.00002	mg/L	~
Dissolved Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Boron	<0.002	0.002	0.003	0.002	<0.002	0.002	0.005	0.002	mg/L	~
Dissolved Cadmium	0.000010	0.000005	0.000030	0.000005	0.000050	0.000005	0.000030	0.000005	mg/L	~
Dissolved Calcium	17.20	0.05	22.5	0.5	9.50	0.05	18.6	0.5	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0005	0.0001	0.0008	0.0001	0.0006	0.0001	0.0010	0.0001	mg/L	~
Dissolved Cobalt	<0.0001	0.0001	0.0002	0.0001	0.0002	0.0001	0.0001	0.0001	mg/L	~
Dissolved Copper	0.0013	0.0002	0.0020	0.0002	0.0017	0.0002	0.0018	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.20	0.01	0.43	0.01	0.52	0.01	0.65	0.01	mg/L	~
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	<0.00005	0.00005	0.00018	0.00005	0.00068	0.00005	0.00026	0.00005	mg/L	~
Dissolved Lithium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Magnesium	3.910	0.004	5.430	0.004	1.670	0.004	4.600	0.004	mg/L	~
Dissolved Manganese	0.0254	0.0001	0.0906	0.0001	0.0529	0.0001	0.0462	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	<0.00005	0.00005	0.00032	0.00005	<0.00005	0.00005	0.00007	0.00005	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 507996

Sample Description	MARLk		NDR - S - 06		JC - S - 01		WBR - S - 04			
Sample Date	8/2/2023 9:45 AM		8/2/2023 10:15 AM		8/2/2023 10:45 AM		8/1/2023 9:45 AM			
Lab ID	1911839		1911840		1911841		1911842			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Nickel	0.0007	0.0005	0.0010	0.0005	0.0007	0.0005	0.0012	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.32	0.05	0.29	0.05	0.15	0.05	0.37	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	0.0007	0.0002	0.0009	0.0002	0.0003	0.0002	0.0010	0.0002	mg/L	~
Dissolved Scandium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Selenium	<0.00005	0.00005	<0.00005	0.00005	0.00025	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Silicon	0.65	0.05	1.10	0.05	1.88	0.05	0.72	0.05	mg/L	~
Dissolved Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Sodium	1.00	0.05	3.36	0.05	20.00	0.05	2.04	0.05	mg/L	~
Dissolved Strontium	0.0234	0.0002	0.0323	0.0002	0.0157	0.0002	0.0341	0.0002	mg/L	~
Dissolved Sulfur	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	0.0001	0.0001	mg/L	~
Dissolved Tin	0.0001	0.0001	0.0003	0.0001	0.0003	0.0001	0.0001	0.0001	mg/L	~
Dissolved Titanium	0.0007	0.0003	0.0044	0.0003	0.0023	0.0003	0.0062	0.0003	mg/L	~
Dissolved Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Uranium	0.00002	0.00001	0.00004	0.00001	<0.00001	0.00001	0.00006	0.00001	mg/L	~
Dissolved Vanadium	<0.0005	0.0005	0.0007	0.0005	<0.0005	0.0005	0.0010	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.003	0.001	0.003	0.001	0.013	0.001	0.001	0.001	mg/L	~
Dissolved Zirconium	0.0005	0.0002	0.0016	0.0002	0.0007	0.0002	0.0026	0.0002	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 507996

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	8/1/2023 1:35 PM		8/1/2023 2:15 PM			
Lab ID	1911843		1911844			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.147	0.001	0.106	0.001	mg/L	~
Dissolved Antimony	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Arsenic	0.0009	0.0001	0.0008	0.0001	mg/L	~
Dissolved Barium	0.0062	0.0001	0.0075	0.0001	mg/L	~
Dissolved Beryllium	<0.00002	0.00002	<0.00002	0.00002	mg/L	~
Dissolved Bismuth	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Boron	<0.002	0.002	<0.002	0.002	mg/L	~
Dissolved Cadmium	0.000020	0.000005	0.000040	0.000005	mg/L	~
Dissolved Calcium	6.61	0.05	4.66	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0007	0.0001	0.0004	0.0001	mg/L	~
Dissolved Cobalt	0.0002	0.0001	0.0001	0.0001	mg/L	~
Dissolved Copper	0.0008	0.0002	0.0012	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.43	0.01	0.41	0.01	mg/L	~
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	0.00028	0.00005	0.00055	0.00005	mg/L	~
Dissolved Lithium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Magnesium	1.790	0.004	1.080	0.004	mg/L	~
Dissolved Manganese	0.0605	0.0001	0.0481	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	<0.00005	0.00005	<0.00005	0.00005	mg/L	~

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Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	8/1/2023 1:35 PM		8/1/2023 2:15 PM			
Lab ID	1911843		1911844			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Nickel	0.0008	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Scandium	<0.001	0.001	0.001	0.001	mg/L	~
Dissolved Selenium	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Silicon	1.95	0.05	2.89	0.05	mg/L	~
Dissolved Silver	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Sodium	0.28	0.05	0.31	0.05	mg/L	~
Dissolved Strontium	0.0115	0.0002	0.0086	0.0002	mg/L	~
Dissolved Sulfur	<0.5	0.5	<0.5	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Thallium	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Tin	0.0002	0.0001	0.0003	0.0001	mg/L	~
Dissolved Titanium	0.0033	0.0003	0.0018	0.0003	mg/L	~
Dissolved Tungsten	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Uranium	0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Vanadium	0.0005	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.005	0.001	0.005	0.001	mg/L	~
Dissolved Zirconium	0.0008	0.0002	0.0003	0.0002	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 507996

Sample Description	MARLk		NDR - S - 06		JC - S - 01		WBR - S - 04			
Sample Date	8/2/2023 9:45 AM		8/2/2023 10:15 AM		8/2/2023 10:45 AM		8/1/2023 9:45 AM			
Lab ID	1911839		1911840		1911841		1911842			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.043	0.001	1.33	0.01	0.148	0.001	0.91	0.01	mg/L	0.075
Total Antimony	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.02
Total Arsenic	0.0005	0.0001	0.0012	0.0001	0.0009	0.0001	0.0012	0.0001	mg/L	0.005
Total Barium	0.0050	0.0001	0.0157	0.0001	0.0057	0.0001	0.0130	0.0001	mg/L	~
Total Beryllium	<0.00002	0.00002	0.00005	0.00002	<0.00002	0.00002	0.00005	0.00002	mg/L	0.011
Total Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Total Boron	<0.002	0.002	0.002	0.002	<0.002	0.002	0.004	0.002	mg/L	0.2
Total Cadmium	0.000007	0.000005	0.000040	0.000005	0.000040	0.000005	0.000050	0.000005	mg/L	0.0001
Total Calcium	15.80	0.05	20.6	0.5	8.99	0.05	19.90	0.05	mg/L	~
Total Cerium	<0.001	0.001	0.002	0.001	<0.001	0.001	0.002	0.001	mg/L	~
Total Cesium	<0.00001	0.00001	0.00013	0.00001	<0.00001	0.00001	0.00008	0.00001	mg/L	~
Total Chromium	0.0004	0.0001	0.0026	0.0001	0.0007	0.0001	0.0021	0.0001	mg/L	~
Total Cobalt	<0.0001	0.0001	0.0007	0.0001	0.0003	0.0001	0.0005	0.0001	mg/L	0.0009
Total Copper	0.0006	0.0002	0.0018	0.0002	0.0009	0.0002	0.0021	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.21	0.01	1.5	0.1	0.54	0.01	1.3	0.1	mg/L	0.3
Total Lanthanum	<0.001	0.001	0.001	0.001	<0.001	0.001	0.001	0.001	mg/L	~
Total Lead	0.00006	0.00005	0.00064	0.00005	0.00070	0.00005	0.00057	0.00005	mg/L	0.001
Total Lithium	<0.001	0.001	0.002	0.001	<0.001	0.001	0.002	0.001	mg/L	~
Total Magnesium	3.710	0.004	5.510	0.004	1.660	0.004	4.680	0.004	mg/L	~
Total Manganese	0.0210	0.0001	0.1290	0.0001	0.0515	0.0001	0.0639	0.0001	mg/L	~
Total Molybdenum	0.00022	0.00005	0.00016	0.00005	<0.00005	0.00005	0.00006	0.00005	mg/L	0.04

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 507996

Sample Description	MARLk		NDR - S - 06		JC - S - 01		WBR - S - 04			
Sample Date	8/2/2023 9:45 AM		8/2/2023 10:15 AM		8/2/2023 10:45 AM		8/1/2023 9:45 AM			
Lab ID	1911839		1911840		1911841		1911842			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Nickel	0.0008	0.0005	0.0019	0.0005	0.0007	0.0005	0.0016	0.0005	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.31	0.05	0.59	0.05	0.14	0.05	0.57	0.05	mg/L	~
Total Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	0.0007	0.0002	0.0031	0.0002	0.0004	0.0002	0.0024	0.0002	mg/L	~
Total Scandium	<0.001	0.001	0.002	0.001	<0.001	0.001	0.001	0.001	mg/L	~
Total Selenium	<0.00005	0.00005	<0.00005	0.00005	0.00019	0.00005	<0.00005	0.00005	mg/L	0.1
Total Silicon	0.67	0.05	3.45	0.05	1.88	0.05	2.33	0.05	mg/L	~
Total Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0001
Total Sodium	0.97	0.05	3.26	0.05	19.00	0.05	2.04	0.05	mg/L	~
Total Strontium	0.0225	0.0002	0.0361	0.0002	0.0152	0.0002	0.0369	0.0002	mg/L	~
Total Sulphur	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	mg/L	~
Total Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Total Thallium	<0.00001	0.00001	0.00002	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0003
Total Thorium	<0.0001	0.0001	0.0003	0.0001	<0.0001	0.0001	0.0003	0.0001	mg/L	~
Total Tin	0.0003	0.0001	0.0002	0.0001	0.0003	0.0001	0.0003	0.0001	mg/L	~
Total Titanium	0.0015	0.0003	0.0484	0.0003	0.0036	0.0003	0.0344	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00003	0.00001	0.00008	0.00001	<0.00001	0.00001	0.00008	0.00001	mg/L	0.005
Total Vanadium	<0.0005	0.0005	0.0027	0.0005	<0.0005	0.0005	0.0023	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.013	0.001	0.008	0.001	0.014	0.001	0.011	0.001	mg/L	0.02
Total Zirconium	0.0006	0.0002	0.0056	0.0002	0.0007	0.0002	0.0050	0.0002	mg/L	0.004

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 507996

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	8/1/2023 1:35 PM		8/1/2023 2:15 PM			
Lab ID	1911843		1911844			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.217	0.001	0.111	0.001	mg/L	0.075
Total Antimony	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.02
Total Arsenic	0.0008	0.0001	0.0008	0.0001	mg/L	0.005
Total Barium	0.0042	0.0001	0.0043	0.0001	mg/L	~
Total Beryllium	<0.00002	0.00002	<0.00002	0.00002	mg/L	0.011
Total Bismuth	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Total Boron	<0.002	0.002	<0.002	0.002	mg/L	0.2
Total Cadmium	0.000020	0.000005	0.000030	0.000005	mg/L	0.0001
Total Calcium	6.19	0.05	4.45	0.05	mg/L	~
Total Cerium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Cesium	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Total Chromium	0.0009	0.0001	0.0004	0.0001	mg/L	~
Total Cobalt	0.0003	0.0001	0.0001	0.0001	mg/L	0.0009
Total Copper	0.0007	0.0002	0.0005	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.53	0.01	0.43	0.01	mg/L	0.3
Total Lanthanum	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00042	0.00005	0.00059	0.00005	mg/L	0.001
Total Lithium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Magnesium	1.700	0.004	1.080	0.004	mg/L	~
Total Manganese	0.0612	0.0001	0.0494	0.0001	mg/L	~
Total Mercury	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Total Molybdenum	<0.00005	0.00005	<0.00005	0.00005	mg/L	0.04

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 507996

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	8/1/2023 1:35 PM		8/1/2023 2:15 PM			
Lab ID	1911843		1911844			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Nickel	0.0008	0.0005	<0.0005	0.0005	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	<0.05	0.05	0.05	0.05	mg/L	~
Total Rhodium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	0.0003	0.0002	0.0002	0.0002	mg/L	~
Total Scandium	<0.001	0.001	0.001	0.001	mg/L	~
Total Selenium	<0.00005	0.00005	<0.00005	0.00005	mg/L	0.1
Total Silicon	2.08	0.05	2.90	0.05	mg/L	~
Total Silver	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0001
Total Sodium	0.30	0.05	0.28	0.05	mg/L	~
Total Strontium	0.0115	0.0002	0.0084	0.0002	mg/L	~
Total Sulphur	<0.5	0.5	<0.5	0.5	mg/L	~
Total Tellurium	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Total Thallium	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0003
Total Thorium	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Total Tin	0.0003	0.0001	0.0003	0.0001	mg/L	~
Total Titanium	0.0064	0.0003	0.0023	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00002	0.00001	<0.00001	0.00001	mg/L	0.005
Total Vanadium	0.0006	0.0005	<0.0005	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.008	0.001	0.014	0.001	mg/L	0.02
Total Zirconium	0.0008	0.0002	0.0004	0.0002	mg/L	0.004

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 507996

Sample Description	MARLk		NDR - S - 06		JC - S - 01		WBR - S - 04			
Sample Date	8/2/2023 9:45 AM		8/2/2023 10:15 AM		8/2/2023 10:45 AM		8/1/2023 9:45 AM			
Lab ID	1911839		1911840		1911841		1911842			
MethylMercury	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.31	0.02	0.08	0.02	0.47	0.02	0.23 [0.24]	0.02	ng/L	~

Sample Description	MARLk		NDR - S - 06		JC - S - 01		WBR - S - 04			
Sample Date	8/2/2023 9:45 AM		8/2/2023 10:15 AM		8/2/2023 10:45 AM		8/1/2023 9:45 AM			
Lab ID	1911839		1911840		1911841		1911842			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	70	10	120 [110]	10	125	10	80	10	mg/L	~
Total Suspended Solids	1.30	0.67	12.5 [11.5]	1	1.00	0.67	6.30	0.67	mg/L	~

Sample Description	WBR - P - 03		WBR - P - 04			
Sample Date	8/1/2023 1:35 PM		8/1/2023 2:15 PM			
Lab ID	1911843		1911844			
Solids	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	85	10	75	10	mg/L	~
Total Suspended Solids	2.70	0.67	2.30	0.67	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 507996

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Organic Soil Analysis: Data reported for organic analysis in soils samples are corrected for moisture content.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	508852
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	AG,DD, DA
Date Order Received:	8/10/2023	Analysis Started:	8/10/2023
Arrival Temperature:	16 °C	Analysis Completed:	8/30/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
JCRK-02	1914996	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	8/8/2023	9:50 AM
JCRK-03	1914997	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	8/8/2023	1:40 PM
SWDup	1914998	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	8/8/2023	12:00 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Kirkland Lake	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 508852

Method	Lab	Description	Reference
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (0.2um) (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 508852

WORK ORDER RESULTS

Sample Description	JCRK - 02		JCRK - 03		SWDup			
Sample Date	8/8/2023 9:50 AM		8/8/2023 1:40 PM		8/8/2023 12:00 AM			
Lab ID	1914996		1914997		1914998			
Anions	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	2.0	0.2	4.2	0.2	4.5	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	0.03	0.01	0.03	0.01	0.03	0.01	mg/L	~
Sulphate	<0.5	0.5	0.9	0.5	1.1	0.5	mg/L	~

Sample Description	JCRK - 02		JCRK - 03			
Sample Date	8/8/2023 9:50 AM		8/8/2023 1:40 PM			
Lab ID	1914996		1914997			
Field Parameters	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	4.91	N/A	6.17	N/A	pH	~
Field Temp	16.44	N/A	17.47	N/A	°C	~

Sample Description	JCRK - 02		JCRK - 03		SWDup			
Sample Date	8/8/2023 9:50 AM		8/8/2023 1:40 PM		8/8/2023 12:00 AM			
Lab ID	1914996		1914997		1914998			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	7	5	8	5	7	5	mg/L as CaCO3	~
Ammonia (as N)	0.071	0.005	0.054	0.005	0.056	0.005	mg/L	~
Conductivity	67	1	180	1	180	1	µS/cm	~
Dissolved Organic Carbon	19.9	0.8	23.3	0.8	24.4	0.8	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 508852

Sample Description	JCRK - 02		JCRK - 03		SWDup			
Sample Date	8/8/2023 9:50 AM		8/8/2023 1:40 PM		8/8/2023 12:00 AM			
Lab ID	1914996		1914997		1914998			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Free Cyanide	0.003	0.001	0.001	0.001	0.001	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	29	2	84	2	88	2	mg/L as CaCO3	~
pH	6.94	N/A	7.45	N/A	7.57	N/A	pH	~
Strong Acid Dissociable Cyanide	<0.002	0.002	0.002 [<0.002]	0.002	<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	36.7	0.1	89.9	0.1	88.8	0.1	mg/L	~
Total Phosphorus (as P)	0.034	0.002	0.028	0.002	0.034	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.008	0.001	0.008	0.001	0.007	0.001	mg/L	~

Sample Description	JCRK - 02		JCRK - 03		SWDup			
Sample Date	8/8/2023 9:50 AM		8/8/2023 1:40 PM		8/8/2023 12:00 AM			
Lab ID	1914996		1914997		1914998			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	4.80	0.01	3.24	0.01	3.03	0.01	ng/L	200

Sample Description	JCRK - 02		JCRK - 03		SWDup			
Sample Date	8/8/2023 9:50 AM		8/8/2023 1:40 PM		8/8/2023 12:00 AM			
Lab ID	1914996		1914997		1914998			
Mercury by CV	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01	0.01	<0.01	0.01	ug/L	0.2

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 508852

Sample Description	JCRK - 02		JCRK - 03		SWDup			
Sample Date	8/8/2023 9:50 AM		8/8/2023 1:40 PM		8/8/2023 12:00 AM			
Lab ID	1914996		1914997		1914998			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.172 [0.160]	0.001	0.075	0.001	0.076	0.001	mg/L	~

Sample Description	JCRK - 02		JCRK - 03		SWDup			
Sample Date	8/8/2023 9:50 AM		8/8/2023 1:40 PM		8/8/2023 12:00 AM			
Lab ID	1914996		1914997		1914998			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.226	0.001	0.098	0.001	0.095	0.001	mg/L	~
Dissolved Antimony	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Arsenic	0.0012	0.0001	0.0010	0.0001	0.0010	0.0001	mg/L	~
Dissolved Barium	0.0156	0.0001	0.0094	0.0001	0.0206	0.0001	mg/L	~
Dissolved Beryllium	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	mg/L	~
Dissolved Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Boron	<0.002	0.002	0.002	0.002	0.003	0.002	mg/L	~
Dissolved Cadmium	0.000040	0.000005	0.000030	0.000005	0.000030	0.000005	mg/L	~
Dissolved Calcium	11.40	0.05	26.6	0.5	26.0	0.5	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0017	0.0001	0.0022	0.0001	0.0021	0.0001	mg/L	~
Dissolved Cobalt	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Copper	0.0027	0.0002	0.0013	0.0002	0.0019	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.7	0.1	0.63	0.01	0.62	0.01	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 508852

Sample Description	JCRK - 02		JCRK - 03		SWDup			
Sample Date	8/8/2023 9:50 AM		8/8/2023 1:40 PM		8/8/2023 12:00 AM			
Lab ID	1914996		1914997		1914998			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	0.00026	0.00005	0.00013	0.00005	0.00014	0.00005	mg/L	~
Dissolved Lithium	<0.001	0.001	0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Magnesium	2.460	0.004	6.260	0.004	6.300	0.004	mg/L	~
Dissolved Manganese	0.0347	0.0001	0.0351	0.0001	0.0355	0.0001	mg/L	~
Dissolved Mercury	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Nickel	0.0015	0.0005	0.0011	0.0005	0.0013	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.26	0.05	0.68	0.05	0.68	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	0.0009	0.0002	0.0012	0.0002	0.0011	0.0002	mg/L	~
Dissolved Scandium	0.001	0.001	0.002	0.001	0.002	0.001	mg/L	~
Dissolved Selenium	0.00015	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Silicon	2.77	0.05	3.70	0.05	3.63	0.05	mg/L	~
Dissolved Silver	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	mg/L	~
Dissolved Sodium	2.66	0.05	4.49	0.05	4.51	0.05	mg/L	~
Dissolved Strontium	0.0196	0.0002	0.0443	0.0002	0.0440	0.0002	mg/L	~
Dissolved Sulfur	1.8	0.5	2.1	0.5	2.3	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Thorium	0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Tin	0.0006	0.0001	0.0002	0.0001	0.0005	0.0001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 508852

Sample Description	JCRK - 02		JCRK - 03		SWDup			
Sample Date	8/8/2023 9:50 AM		8/8/2023 1:40 PM		8/8/2023 12:00 AM			
Lab ID	1914996		1914997		1914998			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Titanium	0.0081	0.0003	0.0047	0.0003	0.0048	0.0003	mg/L	~
Dissolved Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Uranium	0.00005	0.00001	0.00008	0.00001	0.00007	0.00001	mg/L	~
Dissolved Vanadium	0.0011	0.0005	0.0011	0.0005	0.0011	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.010	0.001	0.003	0.001	0.004	0.001	mg/L	~
Dissolved Zirconium	0.0023	0.0002	0.0019	0.0002	0.0019	0.0002	mg/L	~

Sample Description	JCRK - 02		JCRK - 03		SWDup			
Sample Date	8/8/2023 9:50 AM		8/8/2023 1:40 PM		8/8/2023 12:00 AM			
Lab ID	1914996		1914997		1914998			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.614	0.001	0.567	0.001	0.515	0.001	mg/L	0.075
Total Antimony	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.02
Total Arsenic	0.0012	0.0001	0.0010	0.0001	0.0010	0.0001	mg/L	0.005
Total Barium	0.0078	0.0001	0.0148	0.0001	0.0130	0.0001	mg/L	~
Total Beryllium	<0.00002	0.00002	0.00002	0.00002	<0.00002	0.00002	mg/L	0.011
Total Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Total Boron	<0.002	0.002	0.002	0.002	0.002	0.002	mg/L	0.2
Total Cadmium	0.000050	0.000005	0.000030	0.000005	0.000040	0.000005	mg/L	0.0001
Total Calcium	11.40	0.05	27.6	0.5	27.0	0.5	mg/L	~
Total Cerium	0.001	0.001	0.001	0.001	0.001	0.001	mg/L	~
Total Cesium	0.00005	0.00001	0.00005	0.00001	0.00004	0.00001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 508852

Sample Description	JCRK - 02		JCRK - 03		SWDup			
Sample Date	8/8/2023 9:50 AM		8/8/2023 1:40 PM		8/8/2023 12:00 AM			
Lab ID	1914996		1914997		1914998			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Chromium	0.0025	0.0001	0.0019	0.0001	0.0018	0.0001	mg/L	~
Total Cobalt	0.0002	0.0001	0.0003	0.0001	0.0002	0.0001	mg/L	0.0009
Total Copper	0.0021	0.0002	0.0018	0.0002	0.0018	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	1.0	0.1	1.1	0.1	1.0	0.1	mg/L	0.3
Total Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00040	0.00005	0.00035	0.00005	0.00041	0.00005	mg/L	0.001
Total Lithium	<0.001	0.001	0.001	0.001	0.001	0.001	mg/L	~
Total Magnesium	2.610	0.004	6.660	0.004	6.600	0.004	mg/L	~
Total Manganese	0.0420	0.0001	0.0589	0.0001	0.0555	0.0001	mg/L	~
Total Molybdenum	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	0.04
Total Nickel	0.0015	0.0005	0.0016	0.0005	0.0015	0.0005	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.37	0.05	0.83	0.05	0.80	0.05	mg/L	~
Total Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	0.0015	0.0002	0.0019	0.0002	0.0018	0.0002	mg/L	~
Total Scandium	0.002	0.001	0.002	0.001	0.002	0.001	mg/L	~
Total Selenium	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	0.1
Total Silicon	3.84	0.05	4.89	0.05	4.77	0.05	mg/L	~
Total Silver	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	mg/L	0.0001
Total Sodium	2.89	0.05	4.52	0.05	4.58	0.05	mg/L	~
Total Strontium	0.0202	0.0002	0.0468	0.0002	0.0459	0.0002	mg/L	~
Total Sulphur	1.5	0.5	2.2	0.5	2.3	0.5	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 508852

Sample Description	JCRK - 02		JCRK - 03		SWDup			
Sample Date	8/8/2023 9:50 AM		8/8/2023 1:40 PM		8/8/2023 12:00 AM			
Lab ID	1914996		1914997		1914998			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Total Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0003
Total Thorium	0.0002	0.0001	0.0002	0.0001	0.0002	0.0001	mg/L	~
Total Tin	0.0004	0.0001	0.0005	0.0001	0.0004	0.0001	mg/L	~
Total Titanium	0.0228	0.0003	0.0241	0.0003	0.0222	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00006	0.00001	0.00008	0.00001	0.00008	0.00001	mg/L	0.005
Total Vanadium	0.0016	0.0005	0.0015	0.0005	0.0014	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.010	0.001	0.007	0.001	0.007	0.001	mg/L	0.02
Total Zirconium	0.0031	0.0002	0.0028	0.0002	0.0027	0.0002	mg/L	0.004

Sample Description	JCRK - 02		JCRK - 03		SWDup			
Sample Date	8/8/2023 9:50 AM		8/8/2023 1:40 PM		8/8/2023 12:00 AM			
Lab ID	1914996		1914997		1914998			
MethylMercury	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.15	0.02	0.17	0.02	0.20	0.02	ng/L	~

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Canada Nickel Company Inc.

Work Order Number: 508852

Sample Description	JCRK - 02		JCRK - 03		SWDup			
Sample Date	8/8/2023 9:50 AM		8/8/2023 1:40 PM		8/8/2023 12:00 AM			
Lab ID	1914996		1914997		1914998			
Solids	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	105	10	150	10	130	10	mg/L	~
Total Suspended Solids	8.67	0.67	9.00	0.67	11.70	0.67	mg/L	~

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Organic Soil Analysis: Data reported for organic analysis in soils samples are corrected for moisture content.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

Reproduction of Report: Report shall not be reproduced, except in full, without the approval of Testmark Laboratories Ltd.

ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	509147
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	DD, DA
Date Order Received:	8/14/2023	Analysis Started:	8/15/2023
Arrival Temperature:	20 °C	Analysis Completed:	8/30/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
MATR-REF	1916180	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	8/14/2023	11:30 AM
JCRK-01	1916181	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	8/14/2023	11:50 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Kirkland Lake	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test

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Canada Nickel Company Inc.

Work Order Number: 509147

Method	Lab	Description	Reference
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (0.2um) (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 509147

WORK ORDER RESULTS

Sample Description	MATR - REF		JCRK - 01			
Sample Date	8/14/2023 11:30 AM		8/14/2023 11:50 AM			
Lab ID	1916180		1916181			
Anions	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	2.6	0.2	2.7	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	0.04	0.01	0.05	0.01	mg/L	~
Sulphate	3.2	0.5	3.4	0.5	mg/L	~

Sample Description	MATR - REF		JCRK - 01			
Sample Date	8/14/2023 11:30 AM		8/14/2023 11:50 AM			
Lab ID	1916180		1916181			
Field Parameters	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	6.15	N/A	6.29	N/A	pH	~
Field Temp	20.65	N/A	21.05	N/A	°C	~

Sample Description	MATR - REF		JCRK - 01			
Sample Date	8/14/2023 11:30 AM		8/14/2023 11:50 AM			
Lab ID	1916180		1916181			
General Chemistry	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	9	5	<5	5	mg/L as CaCO3	~
Ammonia (as N)	0.028	0.005	0.030	0.005	mg/L	~
Conductivity	126	1	132	1	µS/cm	~
Dissolved Organic Carbon	10.0	0.4	10.3	0.4	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 509147

Sample Description	MATR - REF		JCRK - 01			
Sample Date	8/14/2023 11:30 AM		8/14/2023 11:50 AM			
Lab ID	1916180		1916181			
General Chemistry	Result	MDL	Result	MDL	Units	Criteria: PWQO
Free Cyanide			0.003	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	57	2	59	2	mg/L as CaCO3	~
pH	7.59	N/A	7.64	N/A	pH	~
Strong Acid Dissociable Cyanide			<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	58.4	0.1	60.5	0.1	mg/L	~
Total Phosphorus (as P)	0.012	0.002	0.017	0.002	mg/L	~
Weak Acid Dissociable Cyanide			0.007	0.001	mg/L	~

Sample Description	JCRK - 01			
Sample Date	8/14/2023 11:50 AM			
Lab ID	1916181			
Mercury (Trace)	Result	MDL	Units	Criteria: PWQO
Total Mercury	1.43	0.01	ng/L	200

Sample Description	JCRK - 01			
Sample Date	8/14/2023 11:50 AM			
Lab ID	1916181			
Mercury by CV	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01 [<0.01]	0.01	ug/L	0.2

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 509147

Sample Description	MATR - REF		JCRK - 01			
Sample Date	8/14/2023 11:30 AM		8/14/2023 11:50 AM			
Lab ID	1916180		1916181			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.014 [0.014]	0.001	0.015	0.001	mg/L	~

Sample Description	MATR - REF		JCRK - 01			
Sample Date	8/14/2023 11:30 AM		8/14/2023 11:50 AM			
Lab ID	1916180		1916181			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.022 [0.021]	0.001	0.025	0.001	mg/L	~
Dissolved Antimony	0.0002 [0.0002]	0.0001	0.0003	0.0001	mg/L	~
Dissolved Arsenic	0.0006 [0.0007]	0.0001	0.0009	0.0001	mg/L	~
Dissolved Barium	0.0127 [0.0132]	0.0001	0.0158	0.0001	mg/L	~
Dissolved Beryllium	<0.00002 [<0.00002]	0.00002	<0.00002	0.00002	mg/L	~
Dissolved Bismuth	0.00007 [0.00007]	0.00005	0.00006	0.00005	mg/L	~
Dissolved Boron	0.008 [0.007]	0.002	0.007	0.002	mg/L	~
Dissolved Cadmium	0.000007 [0.000006]	0.000005	0.000010	0.000005	mg/L	~
Dissolved Calcium	16.30 [16.60]	0.05	17.00	0.05	mg/L	~
Dissolved Cerium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0008 [0.0010]	0.0001	0.0011	0.0001	mg/L	~

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Sample Description	MATR - REF		JCRK - 01			
Sample Date	8/14/2023 11:30 AM		8/14/2023 11:50 AM			
Lab ID	1916180		1916181			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Cobalt	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Copper	0.0057 [0.0058]	0.0002	0.0020	0.0002	mg/L	~
Dissolved Europium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.12 [0.12]	0.01	0.13	0.01	mg/L	~
Dissolved Lanthanum	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	<0.00005 [<0.00005]	0.00005	0.00007	0.00005	mg/L	~
Dissolved Lithium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Magnesium	3.710 [3.690]	0.004	3.720	0.004	mg/L	~
Dissolved Manganese	0.0029 [0.0029]	0.0001	0.0060	0.0001	mg/L	~
Dissolved Mercury	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00048 [0.00048]	0.00005	0.00363	0.00005	mg/L	~
Dissolved Nickel	<0.0005 [<0.0005]	0.0005	0.0007	0.0005	mg/L	~
Dissolved Niobium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05 [<0.05]	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.41 [0.43]	0.05	0.45	0.05	mg/L	~
Dissolved Rhodium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~

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Canada Nickel Company Inc.

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Sample Description	MATR - REF		JCRK - 01			
Sample Date	8/14/2023 11:30 AM		8/14/2023 11:50 AM			
Lab ID	1916180		1916181			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Rubidium	0.0012 [0.0012]	0.0002	0.0012	0.0002	mg/L	~
Dissolved Scandium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Selenium	<0.00005 [<0.00005]	0.00005	0.00131	0.00005	mg/L	~
Dissolved Silicon	1.70 [1.75]	0.05	1.77	0.05	mg/L	~
Dissolved Silver	0.00001 [0.00001]	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Sodium	2.41 [2.39]	0.05	2.48	0.05	mg/L	~
Dissolved Strontium	0.0240 [0.0237]	0.0002	0.0245	0.0002	mg/L	~
Dissolved Sulfur	1.1 [1.0]	0.5	0.9	0.5	mg/L	~
Dissolved Tellurium	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Thallium	<0.00001 [<0.00001]	0.00001	0.00001	0.00001	mg/L	~
Dissolved Thorium	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Tin	0.0004 [0.0004]	0.0001	0.0004	0.0001	mg/L	~
Dissolved Titanium	0.0008 [0.0008]	0.0003	0.0010	0.0003	mg/L	~
Dissolved Tungsten	0.0002 [0.0002]	0.0001	0.0002	0.0001	mg/L	~
Dissolved Uranium	0.00006 [0.00006]	0.00001	0.00006	0.00001	mg/L	~
Dissolved Vanadium	<0.0005 [0.0006]	0.0005	0.0006	0.0005	mg/L	~
Dissolved Yttrium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 509147

Sample Description	MATR - REF		JCRK - 01			
Sample Date	8/14/2023 11:30 AM		8/14/2023 11:50 AM			
Lab ID	1916180		1916181			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Zinc	0.003 [0.003]	0.001	0.004	0.001	mg/L	~
Dissolved Zirconium	0.0005 [0.0005]	0.0002	0.0005	0.0002	mg/L	~

Sample Description	MATR - REF		JCRK - 01			
Sample Date	8/14/2023 11:30 AM		8/14/2023 11:50 AM			
Lab ID	1916180		1916181			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.084 [0.083]	0.001	0.112	0.001	mg/L	0.075
Total Antimony	0.0001 [0.0001]	0.0001	0.0002	0.0001	mg/L	0.02
Total Arsenic	0.0006 [0.0006]	0.0001	0.0009	0.0001	mg/L	0.005
Total Barium	0.0061 [0.0062]	0.0001	0.0064	0.0001	mg/L	~
Total Beryllium	<0.00002 [<0.00002]	0.00002	<0.00002	0.00002	mg/L	0.011
Total Bismuth	<0.00005 [<0.00005]	0.00005	<0.00005	0.00005	mg/L	~
Total Boron	0.008 [0.008]	0.002	0.008	0.002	mg/L	0.2
Total Cadmium	0.000007 [0.000009]	0.000005	0.000010	0.000005	mg/L	0.0001
Total Calcium	15.90 [16.40]	0.05	16.60	0.05	mg/L	~
Total Cerium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Total Cesium	0.00001 [0.00001]	0.00001	0.00001	0.00001	mg/L	~

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Canada Nickel Company Inc.

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Sample Description	MATR - REF		JCRK - 01			
Sample Date	8/14/2023 11:30 AM		8/14/2023 11:50 AM			
Lab ID	1916180		1916181			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Chromium	0.0005 [0.0005]	0.0001	0.0005	0.0001	mg/L	~
Total Cobalt	<0.0001 [<0.0001]	0.0001	0.0001	0.0001	mg/L	0.0009
Total Copper	0.0011 [0.0011]	0.0002	0.0017	0.0002	mg/L	0.001
Total Europium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Total Iron	0.22 [0.22]	0.01	0.26	0.01	mg/L	0.3
Total Lanthanum	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00011 [0.00011]	0.00005	0.00016	0.00005	mg/L	0.001
Total Lithium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Total Magnesium	3.710 [3.760]	0.004	3.800	0.004	mg/L	~
Total Manganese	0.0264 [0.0269]	0.0001	0.0297	0.0001	mg/L	~
Total Mercury	<0.0001 [<0.0001]	0.0001			mg/L	0.0002
Total Molybdenum	0.00041 [0.00028]	0.00005	0.00265	0.00005	mg/L	0.04
Total Nickel	<0.0005 [<0.0005]	0.0005	<0.0005	0.0005	mg/L	0.025
Total Niobium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.44 [0.43]	0.05	0.45	0.05	mg/L	~
Total Rhodium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~

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Sample Description	MATR - REF		JCRK - 01			
Sample Date	8/14/2023 11:30 AM		8/14/2023 11:50 AM			
Lab ID	1916180		1916181			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Rubidium	0.0013 [0.0013]	0.0002	0.0014	0.0002	mg/L	~
Total Scandium	<0.001 [<0.001]	0.001	0.001	0.001	mg/L	~
Total Selenium	<0.00005 [<0.00005]	0.00005	0.00108	0.00005	mg/L	0.1
Total Silicon	1.75 [1.83]	0.05	1.88	0.05	mg/L	~
Total Silver	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	mg/L	0.0001
Total Sodium	2.48 [2.39]	0.05	2.44	0.05	mg/L	~
Total Strontium	0.0239 [0.0242]	0.0002	0.0248	0.0002	mg/L	~
Total Sulphur	0.8 [1.1]	0.5	0.9	0.5	mg/L	~
Total Tellurium	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	mg/L	~
Total Thallium	<0.00001 [<0.00001]	0.00001	0.00001	0.00001	mg/L	0.0003
Total Thorium	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	~
Total Tin	0.0003 [0.0003]	0.0001	0.0004	0.0001	mg/L	~
Total Titanium	0.0029 [0.0033]	0.0003	0.0041	0.0003	mg/L	~
Total Tungsten	0.0001 [0.0001]	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00007 [0.00007]	0.00001	0.00007	0.00001	mg/L	0.005
Total Vanadium	<0.0005 [<0.0005]	0.0005	<0.0005	0.0005	mg/L	0.006
Total Yttrium	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~

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Sample Description	MATR - REF		JCRK - 01			
Sample Date	8/14/2023 11:30 AM		8/14/2023 11:50 AM			
Lab ID	1916180		1916181			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Zinc	0.003 [0.003]	0.001	0.004	0.001	mg/L	0.02
Total Zirconium	0.0006 [0.0006]	0.0002	0.0009	0.0002	mg/L	0.004

Sample Description	JCRK - 01			
Sample Date	8/14/2023 11:50 AM			
Lab ID	1916181			
MethylMercury	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.12	0.02	ng/L	~

Sample Description	MATR - REF		JCRK - 01			
Sample Date	8/14/2023 11:30 AM		8/14/2023 11:50 AM			
Lab ID	1916180		1916181			
Solids	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	85	10	90 [90]	10	mg/L	~
Total Suspended Solids	2.70	0.67	5 [2.5]	1	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 509147

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Organic Soil Analysis: Data reported for organic analysis in soils samples are corrected for moisture content.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	509308
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation:	PWQO
		Project #:	Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	Adam Gauthier & David Duciaume
Date Order Received:	8/15/2023	Analysis Started:	8/15/2023
Arrival Temperature:	23 °C	Analysis Completed:	8/30/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
NDR-S-02	1916743	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	8/15/2023	10:45 AM
NDR.S-04b	1916744	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	8/15/2023	11:30 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Kirkland Lake	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test

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Method	Lab	Description	Reference
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (0.2um) (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 509308

WORK ORDER RESULTS

Sample Description	NDR - S - 02		NDR.S - 04b			
Sample Date	8/15/2023 10:45 AM		8/15/2023 11:30 AM			
Lab ID	1916743		1916744			
Anions	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	4.3 [4.3]	0.2	5.9	0.2	mg/L	~
Fluoride	<0.05 [<0.05]	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	0.01	0.01	0.01	0.01	mg/L	~
Sulphate	0.6 [0.6]	0.5	0.6	0.5	mg/L	~

Sample Description	NDR - S - 02		NDR.S - 04b			
Sample Date	8/15/2023 10:45 AM		8/15/2023 11:30 AM			
Lab ID	1916743		1916744			
Field Parameters	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	5.72	N/A	5.83	N/A	pH	~
Field Temp	17.53	N/A	15.92	N/A	°C	~

Sample Description	NDR - S - 02		NDR.S - 04b			
Sample Date	8/15/2023 10:45 AM		8/15/2023 11:30 AM			
Lab ID	1916743		1916744			
General Chemistry	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	8	5	10	5	mg/L as CaCO3	~
Ammonia (as N)	0.058	0.005	0.064	0.005	mg/L	~
Conductivity	100	1	107	1	µS/cm	~

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Canada Nickel Company Inc.

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Sample Description	NDR - S - 02		NDR.S - 04b			
Sample Date	8/15/2023 10:45 AM		8/15/2023 11:30 AM			
Lab ID	1916743		1916744			
General Chemistry	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Organic Carbon	26.5	0.8	28.6	0.8	mg/L	~
Free Cyanide			0.004 [0.005]	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	44	2	44	2	mg/L as CaCO3	~
pH	7.33	N/A	7.38	N/A	pH	~
Strong Acid Dissociable Cyanide			0.004 [0.004]	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	52.8	0.1	52.6	0.1	mg/L	~
Total Phosphorus (as P)	0.026	0.002	0.034	0.002	mg/L	~
Weak Acid Dissociable Cyanide			0.004	0.001	mg/L	~

Sample Description	NDR.S - 04b			
Sample Date	8/15/2023 11:30 AM			
Lab ID	1916744			
Mercury (Trace)	Result	MDL	Units	Criteria: PWQO
Total Mercury	4.56	0.01	ng/L	200

Sample Description	NDR.S - 04b			
Sample Date	8/15/2023 11:30 AM			
Lab ID	1916744			
Mercury by CV	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	ug/L	0.2

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 509308

Sample Description	NDR - S - 02		NDR.S - 04b			
Sample Date	8/15/2023 10:45 AM		8/15/2023 11:30 AM			
Lab ID	1916743		1916744			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.090	0.001	0.107	0.001	mg/L	~

Sample Description	NDR - S - 02		NDR.S - 04b			
Sample Date	8/15/2023 10:45 AM		8/15/2023 11:30 AM			
Lab ID	1916743		1916744			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.106	0.001	0.135	0.001	mg/L	~
Dissolved Antimony	0.0002	0.0001	0.0002	0.0001	mg/L	~
Dissolved Arsenic	0.0009	0.0001	0.0009	0.0001	mg/L	~
Dissolved Barium	0.0157	0.0001	0.0164	0.0001	mg/L	~
Dissolved Beryllium	<0.00002	0.00002	<0.00002	0.00002	mg/L	~
Dissolved Bismuth	0.00007	0.00005	0.00007	0.00005	mg/L	~
Dissolved Boron	<0.002	0.002	<0.002	0.002	mg/L	~
Dissolved Cadmium	0.000010	0.000005	0.000020	0.000005	mg/L	~
Dissolved Calcium	13.50	0.05	14.10	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0010	0.0001	0.0011	0.0001	mg/L	~
Dissolved Cobalt	0.0001	0.0001	0.0001	0.0001	mg/L	~
Dissolved Copper	0.0018	0.0002	0.0018	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.44	0.01	0.51	0.01	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 509308

Sample Description	NDR - S - 02		NDR.S - 04b			
Sample Date	8/15/2023 10:45 AM		8/15/2023 11:30 AM			
Lab ID	1916743		1916744			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	0.00020	0.00005	0.00018	0.00005	mg/L	~
Dissolved Lithium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Magnesium	3.350	0.004	3.610	0.004	mg/L	~
Dissolved Manganese	0.0424	0.0001	0.0575	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00138	0.00005	0.00086	0.00005	mg/L	~
Dissolved Nickel	0.0008	0.0005	0.0009	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.19	0.05	0.18	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	0.0006	0.0002	0.0007	0.0002	mg/L	~
Dissolved Scandium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Selenium	0.00020	0.00005	0.00008	0.00005	mg/L	~
Dissolved Silicon	1.05	0.05	1.47	0.05	mg/L	~
Dissolved Silver	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Sodium	3.20	0.05	4.49	0.05	mg/L	~
Dissolved Strontium	0.0209	0.0002	0.0221	0.0002	mg/L	~
Dissolved Sulfur	<0.5	0.5	<0.5	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Thallium	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Tin	0.0004	0.0001	0.0005	0.0001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 509308

Sample Description	NDR - S - 02		NDR.S - 04b			
Sample Date	8/15/2023 10:45 AM		8/15/2023 11:30 AM			
Lab ID	1916743		1916744			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Titanium	0.0034	0.0003	0.0045	0.0003	mg/L	~
Dissolved Tungsten	0.0002	0.0001	0.0002	0.0001	mg/L	~
Dissolved Uranium	0.00003	0.00001	0.00004	0.00001	mg/L	~
Dissolved Vanadium	0.0007	0.0005	0.0008	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.006	0.001	0.006	0.001	mg/L	~
Dissolved Zirconium	0.0013	0.0002	0.0020	0.0002	mg/L	~

Sample Description	NDR - S - 02		NDR.S - 04b			
Sample Date	8/15/2023 10:45 AM		8/15/2023 11:30 AM			
Lab ID	1916743		1916744			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.260	0.001	0.301	0.001	mg/L	0.075
Total Antimony	0.0001	0.0001	0.0001	0.0001	mg/L	0.02
Total Arsenic	0.0008	0.0001	0.0009	0.0001	mg/L	0.005
Total Barium	0.0061	0.0001	0.0078	0.0001	mg/L	~
Total Beryllium	<0.00002	0.00002	<0.00002	0.00002	mg/L	0.011
Total Bismuth	<0.00005	0.00005	0.00006	0.00005	mg/L	~
Total Boron	<0.002	0.002	<0.002	0.002	mg/L	0.2
Total Cadmium	0.000020	0.000005	0.000030	0.000005	mg/L	0.0001
Total Calcium	13.80	0.05	14.00	0.05	mg/L	~
Total Cerium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Cesium	0.00002	0.00001	0.00002	0.00001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 509308

Sample Description	NDR - S - 02		NDR.S - 04b			
Sample Date	8/15/2023 10:45 AM		8/15/2023 11:30 AM			
Lab ID	1916743		1916744			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Chromium	0.0009	0.0001	0.0010	0.0001	mg/L	~
Total Cobalt	0.0002	0.0001	0.0003	0.0001	mg/L	0.0009
Total Copper	0.0010	0.0002	0.0025	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.63	0.01	0.6	0.1	mg/L	0.3
Total Lanthanum	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00032	0.00005	0.00054	0.00005	mg/L	0.001
Total Lithium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Magnesium	3.520	0.004	3.720	0.004	mg/L	~
Total Manganese	0.0497	0.0001	0.0732	0.0001	mg/L	~
Total Mercury	<0.0001	0.0001			mg/L	0.0002
Total Molybdenum	0.00100	0.00005	0.00060	0.00005	mg/L	0.04
Total Nickel	0.0008	0.0005	0.0008	0.0005	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.22	0.05	0.21	0.05	mg/L	~
Total Rhodium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	0.0009	0.0002	0.0009	0.0002	mg/L	~
Total Scandium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Selenium	0.00032	0.00005	0.00010	0.00005	mg/L	0.1
Total Silicon	1.30	0.05	1.67	0.05	mg/L	~
Total Silver	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0001
Total Sodium	3.23	0.05	4.33	0.05	mg/L	~
Total Strontium	0.0219	0.0002	0.0222	0.0002	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 509308

Sample Description	NDR - S - 02		NDR.S - 04b			
Sample Date	8/15/2023 10:45 AM		8/15/2023 11:30 AM			
Lab ID	1916743		1916744			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Sulphur	<0.5	0.5	<0.5	0.5	mg/L	~
Total Tellurium	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Total Thallium	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0003
Total Thorium	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Total Tin	0.0004	0.0001	0.0002	0.0001	mg/L	~
Total Titanium	0.0086	0.0003	0.0105	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00004	0.00001	0.00005	0.00001	mg/L	0.005
Total Vanadium	0.0008	0.0005	0.0009	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.005	0.001	0.008	0.001	mg/L	0.02
Total Zirconium	0.0017	0.0002	0.0020	0.0002	mg/L	0.004

Sample Description	NDR.S - 04b			
Sample Date	8/15/2023 11:30 AM			
Lab ID	1916744			
MethylMercury	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.24	0.02	ng/L	~

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Canada Nickel Company Inc.

Work Order Number: 509308

Sample Description	NDR - S - 02		NDR.S - 04b			
Sample Date	8/15/2023 10:45 AM		8/15/2023 11:30 AM			
Lab ID	1916743		1916744			
Solids	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	85	10	90	10	mg/L	~
Total Suspended Solids	11.70	0.67	9.00	0.67	mg/L	~

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Organic Soil Analysis: Data reported for organic analysis in soils samples are corrected for moisture content.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	510423
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	DD, DA
Date Order Received:	8/24/2023	Analysis Started:	8/24/2023
Arrival Temperature:	18 °C	Analysis Completed:	9/18/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
PC-01	1920565	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	8/24/2023	10:20 AM
WBR-S-Ref	1920566	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	8/24/2023	10:10 AM
WBR-S-06	1920567	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	8/24/2023	11:25 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 510423

Method	Lab	Description	Reference
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (0.2um) (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 510423

WORK ORDER RESULTS

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 06			
Sample Date	8/24/2023 10:20 AM		8/24/2023 10:10 AM		8/24/2023 11:25 AM			
Lab ID	1920565		1920566		1920567			
Anions	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	0.4	0.2	1.2	0.2	0.5	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	0.8	0.1	0.1	0.1	0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	0.8	0.5	6.1	0.5	1.8	0.5	mg/L	~

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 06			
Sample Date	8/24/2023 10:20 AM		8/24/2023 10:10 AM		8/24/2023 11:25 AM			
Lab ID	1920565		1920566		1920567			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	6.5	N/A	5.67	N/A	5.84	N/A	pH	~
Field Temp	15.13	N/A	17.75	N/A	17.76	N/A	°C	~

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 06			
Sample Date	8/24/2023 10:20 AM		8/24/2023 10:10 AM		8/24/2023 11:25 AM			
Lab ID	1920565		1920566		1920567			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	6	5	13	5	8	5	mg/L as CaCO3	~
Ammonia (as N)	0.046	0.005	0.057	0.005	0.064	0.005	mg/L	~
Conductivity	131	1	107	1	111	1	µS/cm	~
Dissolved Organic Carbon	19.8	0.4	31.5	0.4	31.9	0.4	mg/L	~

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Work Order Number: 510423

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 06			
Sample Date	8/24/2023 10:20 AM		8/24/2023 10:10 AM		8/24/2023 11:25 AM			
Lab ID	1920565		1920566		1920567			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Free Cyanide	0.003	0.001	0.004	0.001	0.004	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	72	2	50	2	59	2	mg/L as CaCO3	~
pH	7.36	N/A	7.17	N/A	7.2	N/A	pH	~
Strong Acid Dissociable Cyanide	0.006 [0.005]	0.002	0.004	0.002	0.004	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	68.1	0.1	56.7	0.1	62.7	0.1	mg/L	~
Total Phosphorus (as P)	0.018	0.002	0.041	0.002	0.041	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.004	0.001	0.004	0.001	0.004	0.001	mg/L	~

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 06			
Sample Date	8/24/2023 10:20 AM		8/24/2023 10:10 AM		8/24/2023 11:25 AM			
Lab ID	1920565		1920566		1920567			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	2.57	0.01	4.15	0.01	4.57	0.01	ng/L	200

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 06			
Sample Date	8/24/2023 10:20 AM		8/24/2023 10:10 AM		8/24/2023 11:25 AM			
Lab ID	1920565		1920566		1920567			
Mercury by CV	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01	0.01	<0.01	0.01	ug/L	0.2

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 510423

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 06			
Sample Date	8/24/2023 10:20 AM		8/24/2023 10:10 AM		8/24/2023 11:25 AM			
Lab ID	1920565		1920566		1920567			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.036	0.001	0.091	0.001	0.075 [0.074]	0.001	mg/L	~

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 06			
Sample Date	8/24/2023 10:20 AM		8/24/2023 10:10 AM		8/24/2023 11:25 AM			
Lab ID	1920565		1920566		1920567			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.047	0.001	0.134	0.001	0.124 [0.127]	0.001	mg/L	~
Dissolved Antimony	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Arsenic	0.0005	0.0001	0.0011	0.0001	0.0010 [0.0010]	0.0001	mg/L	~
Dissolved Barium	0.0167	0.0001	0.0155	0.0001	0.0179 [0.0170]	0.0001	mg/L	~
Dissolved Beryllium	<0.00002	0.00002	<0.00002	0.00002	<0.00002 [0.00002]	0.00002	mg/L	~
Dissolved Bismuth	0.00007	0.00005	0.00006	0.00005	0.00006 [<0.00005]	0.00005	mg/L	~
Dissolved Boron	<0.002	0.002	0.011	0.002	0.003 [0.003]	0.002	mg/L	~
Dissolved Cadmium	0.000010	0.000005	0.000020	0.000005	0.000030 [0.000030]	0.000005	mg/L	~
Dissolved Calcium	19.30	0.05	16.00	0.05	17.60 [17.60]	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Chromium	0.0016	0.0001	0.0018	0.0001	0.0017 [0.0018]	0.0001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 510423

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 06			
Sample Date	8/24/2023 10:20 AM		8/24/2023 10:10 AM		8/24/2023 11:25 AM			
Lab ID	1920565		1920566		1920567			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Cobalt	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Copper	0.0016	0.0002	0.0024	0.0002	0.0021 [0.0021]	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Iron	0.35	0.01	0.56	0.01	0.61 [0.60]	0.01	mg/L	~
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Lead	0.00007	0.00005	0.00022	0.00005	0.00022 [0.00023]	0.00005	mg/L	~
Dissolved Lithium	<0.001	0.001	<0.001	0.001	0.001 [0.001]	0.001	mg/L	~
Dissolved Magnesium	4.540	0.004	3.460	0.004	3.890 [3.930]	0.004	mg/L	~
Dissolved Manganese	0.0329	0.0001	0.0286	0.0001	0.0391 [0.0392]	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	0.0002
Dissolved Molybdenum	<0.00005	0.00005	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	mg/L	~
Dissolved Nickel	0.0010	0.0005	0.0012	0.0005	0.0012 [0.0012]	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05	0.05	<0.05 [<0.05]	0.05	mg/L	~
Dissolved Potassium	0.49	0.05	0.55	0.05	0.42 [0.43]	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 510423

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 06			
Sample Date	8/24/2023 10:20 AM		8/24/2023 10:10 AM		8/24/2023 11:25 AM			
Lab ID	1920565		1920566		1920567			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Rubidium	0.0016	0.0002	0.0016	0.0002	0.0012 [0.0012]	0.0002	mg/L	~
Dissolved Scandium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Selenium	<0.00005	0.00005	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	mg/L	~
Dissolved Silicon	1.07	0.05	0.86	0.05	1.04 [1.11]	0.05	mg/L	~
Dissolved Silver	0.00005	0.00001	0.00003	0.00001	0.00002 [0.00002]	0.00001	mg/L	~
Dissolved Sodium	2.28	0.05	2.91	0.05	1.88 [1.88]	0.05	mg/L	~
Dissolved Strontium	0.0426	0.0002	0.0308	0.0002	0.0331 [0.0331]	0.0002	mg/L	~
Dissolved Sulfur	1.5	0.5	2.7	0.5	1.7 [1.8]	0.5	mg/L	~
Dissolved Tellurium	0.0002	0.0002	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	mg/L	~
Dissolved Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	0.0002	0.0001	0.0001 [0.0002]	0.0001	mg/L	~
Dissolved Tin	0.0003	0.0001	0.0005	0.0001	0.0003 [0.0003]	0.0001	mg/L	~
Dissolved Titanium	0.0014	0.0003	0.0053	0.0003	0.0053 [0.0055]	0.0003	mg/L	~
Dissolved Tungsten	0.0002	0.0001	0.0002	0.0001	0.0001 [0.0001]	0.0001	mg/L	~
Dissolved Uranium	0.00005	0.00001	0.00005	0.00001	0.00005 [0.00005]	0.00001	mg/L	~
Dissolved Vanadium	0.0008	0.0005	0.0012	0.0005	0.0011 [0.0011]	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 510423

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 06			
Sample Date	8/24/2023 10:20 AM		8/24/2023 10:10 AM		8/24/2023 11:25 AM			
Lab ID	1920565		1920566		1920567			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Zinc	0.003	0.001	0.004	0.001	0.004 [0.004]	0.001	mg/L	~
Dissolved Zirconium	0.0009	0.0002	0.0027	0.0002	0.0025 [0.0025]	0.0002	mg/L	~

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 06			
Sample Date	8/24/2023 10:20 AM		8/24/2023 10:10 AM		8/24/2023 11:25 AM			
Lab ID	1920565		1920566		1920567			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.133	0.001	0.364	0.001	0.500 [0.501]	0.001	mg/L	0.075
Total Antimony	0.0012	0.0001	0.0011	0.0001	0.0009 [0.0007]	0.0001	mg/L	0.02
Total Arsenic	0.0005	0.0001	0.0011	0.0001	0.0011 [0.0010]	0.0001	mg/L	0.005
Total Barium	0.0081	0.0001	0.0083	0.0001	0.0110 [0.0108]	0.0001	mg/L	~
Total Beryllium	<0.00002	0.00002	0.00002	0.00002	0.00004 [0.00003]	0.00002	mg/L	0.011
Total Bismuth	0.00005	0.00005	0.00007	0.00005	<0.00005 [<0.00005]	0.00005	mg/L	~
Total Boron	<0.002	0.002	0.011	0.002	<0.002 [0.002]	0.002	mg/L	0.2
Total Cadmium	0.000010	0.000005	0.000040	0.000005	0.000040 [0.000040]	0.000005	mg/L	0.0001
Total Calcium	19.00	0.05	16.30	0.05	17.90 [18.00]	0.05	mg/L	~
Total Cerium	<0.001	0.001	0.001	0.001	0.002 [0.002]	0.001	mg/L	~
Total Cesium	<0.00001	0.00001	0.00003	0.00001	0.00004 [0.00004]	0.00001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 510423

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 06			
Sample Date	8/24/2023 10:20 AM		8/24/2023 10:10 AM		8/24/2023 11:25 AM			
Lab ID	1920565		1920566		1920567			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Chromium	0.0010	0.0001	0.0017	0.0001	0.0018 [0.0019]	0.0001	mg/L	~
Total Cobalt	0.0001	0.0001	0.0003	0.0001	0.0004 [0.0004]	0.0001	mg/L	0.0009
Total Copper	0.0012	0.0002	0.0029	0.0002	0.0019 [0.0018]	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Iron	0.47	0.01	0.9	0.1	1.0 [1.0]	0.1	mg/L	0.3
Total Lanthanum	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Lead	0.00010	0.00005	0.00045	0.00005	0.00049 [0.00049]	0.00005	mg/L	0.001
Total Lithium	0.001	0.001	0.001	0.001	0.002 [0.002]	0.001	mg/L	~
Total Magnesium	4.720	0.004	3.680	0.004	4.040 [4.090]	0.004	mg/L	~
Total Manganese	0.0399	0.0001	0.0453	0.0001	0.0758 [0.0755]	0.0001	mg/L	~
Total Molybdenum	<0.00005	0.00005	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	mg/L	0.04
Total Nickel	0.0009	0.0005	0.0015	0.0005	0.0016 [0.0016]	0.0005	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Potassium	0.51	0.05	0.59	0.05	0.52 [0.51]	0.05	mg/L	~
Total Rhodium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Rubidium	0.0017	0.0002	0.0021	0.0002	0.0019 [0.0019]	0.0002	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 510423

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 06			
Sample Date	8/24/2023 10:20 AM		8/24/2023 10:10 AM		8/24/2023 11:25 AM			
Lab ID	1920565		1920566		1920567			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Scandium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Selenium	<0.00005	0.00005	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	mg/L	0.1
Total Silicon	1.22	0.05	1.16	0.05	1.67 [1.65]	0.05	mg/L	~
Total Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	0.0001
Total Sodium	2.37	0.05	2.96	0.05	1.90 [1.90]	0.05	mg/L	~
Total Strontium	0.0432	0.0002	0.0326	0.0002	0.0344 [0.0347]	0.0002	mg/L	~
Total Sulphur	1.6	0.5	2.6	0.5	1.4 [1.4]	0.5	mg/L	~
Total Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	mg/L	~
Total Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	0.0003
Total Thorium	<0.0001	0.0001	0.0002	0.0001	0.0002 [0.0002]	0.0001	mg/L	~
Total Tin	0.0004	0.0001	0.0004	0.0001	0.0004 [0.0005]	0.0001	mg/L	~
Total Titanium	0.0044	0.0003	0.0115	0.0003	0.0173 [0.0170]	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	0.03
Total Uranium	0.00005	0.00001	0.00006	0.00001	0.00006 [0.00006]	0.00001	mg/L	0.005
Total Vanadium	0.0007	0.0005	0.0016	0.0005	0.0016 [0.0016]	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Zinc	0.002	0.001	0.008	0.001	0.006 [0.006]	0.001	mg/L	0.02

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 510423

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 06			
Sample Date	8/24/2023 10:20 AM		8/24/2023 10:10 AM		8/24/2023 11:25 AM			
Lab ID	1920565		1920566		1920567			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Zirconium	0.0009	0.0002	0.0034	0.0002	0.0034 [0.0033]	0.0002	mg/L	0.004

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 06			
Sample Date	8/24/2023 10:20 AM		8/24/2023 10:10 AM		8/24/2023 11:25 AM			
Lab ID	1920565		1920566		1920567			
MethylMercury	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.20	0.02	0.25	0.02	0.23	0.02	ng/L	~

Sample Description	PC - 01		WBR - S - Ref		WBR - S - 06			
Sample Date	8/24/2023 10:20 AM		8/24/2023 10:10 AM		8/24/2023 11:25 AM			
Lab ID	1920565		1920566		1920567			
Solids	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	110	10	125	10	140	10	mg/L	~
Total Suspended Solids	2.30	0.67	8.67	0.67	14.00	0.67	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 510423

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Organic Soil Analysis: Data reported for organic analysis in soils samples are corrected for moisture content.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	510587
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	AG, JP
Date Order Received:	8/28/2023	Analysis Started:	8/28/2023
Arrival Temperature:	10 °C	Analysis Completed:	9/18/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
MATR-01	1920988	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	8/26/2023	12:35 PM
BS-SW-01	1920989	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	8/26/2023	2:50 PM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test

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Method	Lab	Description	Reference
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (0.2um) (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 510587

WORK ORDER RESULTS

Sample Description	MATR - 01		BS - SW - 01			
Sample Date	8/26/2023 12:35 PM		8/26/2023 2:50 PM			
Lab ID	1920988		1920989			
Anions	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	2.6 [2.6]	0.2	0.4	0.2	mg/L	~
Fluoride	<0.05 [<0.05]	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	4.1 [4.1]	0.5	<0.5	0.5	mg/L	~

Sample Description	MATR - 01		BS - SW - 01			
Sample Date	8/26/2023 12:35 PM		8/26/2023 2:50 PM			
Lab ID	1920988		1920989			
Field Parameters	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	5.31	N/A	3.46	N/A	pH	~
Field Temp	19.41	N/A	15.17	N/A	°C	~

Sample Description	MATR - 01		BS - SW - 01			
Sample Date	8/26/2023 12:35 PM		8/26/2023 2:50 PM			
Lab ID	1920988		1920989			
General Chemistry	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	<5	5	29	5	mg/L as CaCO3	~
Ammonia (as N)	0.030	0.005	0.076	0.005	mg/L	~
Conductivity	121	1	37	1	µS/cm	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 510587

Sample Description	MATR - 01		BS - SW - 01			
Sample Date	8/26/2023 12:35 PM		8/26/2023 2:50 PM			
Lab ID	1920988		1920989			
General Chemistry	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Organic Carbon	10.0	0.4	48.5	0.8	mg/L	~
Free Cyanide	0.002	0.001	0.003 [0.004]	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	57	2	8	2	mg/L as CaCO3	~
pH	7.44	N/A	5.32	N/A	pH	~
Strong Acid Dissociable Cyanide	<0.002	0.002	<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	56.3	0.1	20.9	0.1	mg/L	~
Total Phosphorus (as P)	0.017	0.002	0.020	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.003	0.001	0.004	0.001	mg/L	~

Sample Description	MATR - 01		BS - SW - 01			
Sample Date	8/26/2023 12:35 PM		8/26/2023 2:50 PM			
Lab ID	1920988		1920989			
Mercury (Trace)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	1.21	0.01	2.12	0.01	ng/L	200

Sample Description	MATR - 01		BS - SW - 01			
Sample Date	8/26/2023 12:35 PM		8/26/2023 2:50 PM			
Lab ID	1920988		1920989			
Mercury by CV	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01	0.01	ug/L	0.2

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 510587

Sample Description	MATR - 01		BS - SW - 01			
Sample Date	8/26/2023 12:35 PM		8/26/2023 2:50 PM			
Lab ID	1920988		1920989			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.016	0.001	0.128	0.001	mg/L	~

Sample Description	MATR - 01		BS - SW - 01			
Sample Date	8/26/2023 12:35 PM		8/26/2023 2:50 PM			
Lab ID	1920988		1920989			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.021	0.001	0.140	0.001	mg/L	~
Dissolved Antimony	0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Arsenic	0.0009	0.0001	0.0007	0.0001	mg/L	~
Dissolved Barium	0.0153	0.0001	0.0112	0.0001	mg/L	~
Dissolved Beryllium	<0.00002	0.00002	<0.00002	0.00002	mg/L	~
Dissolved Bismuth	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Boron	0.005	0.002	<0.002	0.002	mg/L	~
Dissolved Cadmium	0.000008	0.000005	0.000030	0.000005	mg/L	~
Dissolved Calcium	16.00	0.05	5.90	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0008	0.0001	0.0010	0.0001	mg/L	~
Dissolved Cobalt	<0.0001	0.0001	0.0003	0.0001	mg/L	~
Dissolved Copper	0.0016	0.0002	0.0015	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.12	0.01	0.8	0.1	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 510587

Sample Description	MATR - 01		BS - SW - 01			
Sample Date	8/26/2023 12:35 PM		8/26/2023 2:50 PM			
Lab ID	1920988		1920989			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	0.00005	0.00005	0.00043	0.00005	mg/L	~
Dissolved Lithium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Magnesium	3.520	0.004	1.520	0.004	mg/L	~
Dissolved Manganese	0.0115	0.0001	0.0739	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Nickel	0.0006	0.0005	0.0008	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.39	0.05	<0.05	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	0.0011	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Scandium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Selenium	0.00095	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Silicon	1.43	0.05	0.54	0.05	mg/L	~
Dissolved Silver	0.00008	0.00001	0.00002	0.00001	mg/L	~
Dissolved Sodium	2.16	0.05	0.40	0.05	mg/L	~
Dissolved Strontium	0.0254	0.0002	0.0119	0.0002	mg/L	~
Dissolved Sulfur	2.1	0.5	0.9	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Thallium	0.00002	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Tin	0.0004	0.0001	0.0005	0.0001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 510587

Sample Description	MATR - 01		BS - SW - 01			
Sample Date	8/26/2023 12:35 PM		8/26/2023 2:50 PM			
Lab ID	1920988		1920989			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Titanium	0.0008	0.0003	0.0035	0.0003	mg/L	~
Dissolved Tungsten	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Uranium	0.00005	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Vanadium	0.0005	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.004	0.001	0.013	0.001	mg/L	~
Dissolved Zirconium	0.0005	0.0002	0.0007	0.0002	mg/L	~

Sample Description	MATR - 01		BS - SW - 01			
Sample Date	8/26/2023 12:35 PM		8/26/2023 2:50 PM			
Lab ID	1920988		1920989			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.134	0.001	0.153	0.001	mg/L	0.075
Total Antimony	0.0006	0.0001	0.0005	0.0001	mg/L	0.02
Total Arsenic	0.0009	0.0001	0.0007	0.0001	mg/L	0.005
Total Barium	0.0062	0.0001	0.0043	0.0001	mg/L	~
Total Beryllium	<0.00002	0.00002	<0.00002	0.00002	mg/L	0.011
Total Bismuth	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Total Boron	0.004	0.002	<0.002	0.002	mg/L	0.2
Total Cadmium	0.000010	0.000005	0.000030	0.000005	mg/L	0.0001
Total Calcium	16.40	0.05	5.62	0.05	mg/L	~
Total Cerium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Cesium	0.00001	0.00001	<0.00001	0.00001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 510587

Sample Description	MATR - 01		BS - SW - 01			
Sample Date	8/26/2023 12:35 PM		8/26/2023 2:50 PM			
Lab ID	1920988		1920989			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Chromium	0.0009	0.0001	0.0012	0.0001	mg/L	~
Total Cobalt	0.0001	0.0001	0.0004	0.0001	mg/L	0.0009
Total Copper	0.0011	0.0002	0.0006	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.25	0.01	0.9	0.1	mg/L	0.3
Total Lanthanum	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00008	0.00005	0.00060	0.00005	mg/L	0.001
Total Lithium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Magnesium	3.700	0.004	1.550	0.004	mg/L	~
Total Manganese	0.0261	0.0001	0.0748	0.0001	mg/L	~
Total Molybdenum	0.00059	0.00005	<0.00005	0.00005	mg/L	0.04
Total Nickel	0.0006	0.0005	0.0009	0.0005	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.42	0.05	<0.05	0.05	mg/L	~
Total Rhodium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	0.0013	0.0002	<0.0002	0.0002	mg/L	~
Total Scandium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Selenium	0.00074	0.00005	<0.00005	0.00005	mg/L	0.1
Total Silicon	1.72	0.05	0.63	0.05	mg/L	~
Total Silver	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0001
Total Sodium	2.27	0.05	0.37	0.05	mg/L	~
Total Strontium	0.0264	0.0002	0.0112	0.0002	mg/L	~
Total Sulphur	2.3	0.5	0.8	0.5	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 510587

Sample Description	MATR - 01		BS - SW - 01			
Sample Date	8/26/2023 12:35 PM		8/26/2023 2:50 PM			
Lab ID	1920988		1920989			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Tellurium	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Total Thallium	0.00001	0.00001	<0.00001	0.00001	mg/L	0.0003
Total Thorium	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Total Tin	0.0004	0.0001	0.0004	0.0001	mg/L	~
Total Titanium	0.0049	0.0003	0.0042	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00005	0.00001	<0.00001	0.00001	mg/L	0.005
Total Vanadium	0.0006	0.0005	<0.0005	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.007	0.001	0.016	0.001	mg/L	0.02
Total Zirconium	0.0008	0.0002	0.0007	0.0002	mg/L	0.004

Sample Description	MATR - 01		BS - SW - 01			
Sample Date	8/26/2023 12:35 PM		8/26/2023 2:50 PM			
Lab ID	1920988		1920989			
MethylMercury	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.02	0.02	0.03	0.02	ng/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 510587

Sample Description	MATR - 01		BS - SW - 01			
Sample Date	8/26/2023 12:35 PM		8/26/2023 2:50 PM			
Lab ID	1920988		1920989			
Solids	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	85	10	80	10	mg/L	~
Total Suspended Solids	3.00	0.67	2.30	0.67	mg/L	~

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Organic Soil Analysis: Data reported for organic analysis in soils samples are corrected for moisture content.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	511255
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	Adam Gauthier & David Duciaume
Date Order Received:	9/1/2023	Analysis Started:	9/5/2023
Arrival Temperature:	22 °C	Analysis Completed:	9/29/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
PRSLK	1923365	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	9/1/2023	2:35 PM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237

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Canada Nickel Company Inc.

Work Order Number: 511255

Method	Lab	Description	Reference
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (0.2um) (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 511255

WORK ORDER RESULTS

Sample Description	PRSLK			
Sample Date	9/1/2023 2:35 PM			
Lab ID	1923365			
Anions	Result	MDL	Units	Criteria: PWQO
Chloride	0.5 [0.5]	0.2	mg/L	~
Fluoride	<0.05 [<0.05]	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	mg/L	~
Nitrite (as N)	0.03	0.01	mg/L	~
Sulphate	1.1 [1.2]	0.5	mg/L	~

Sample Description	PRSLK			
Sample Date	9/1/2023 2:35 PM			
Lab ID	1923365			
Field Parameters	Result	MDL	Units	Criteria: PWQO
Field pH	4.35	N/A	pH	~
Field Temp	20.14	N/A	°C	~

Sample Description	PRSLK			
Sample Date	9/1/2023 2:35 PM			
Lab ID	1923365			
General Chemistry	Result	MDL	Units	Criteria: PWQO
Acidity	6	5	mg/L as CaCO3	~
Ammonia (as N)	0.046 [0.046]	0.005	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 511255

Sample Description	PRSLK			
Sample Date	9/1/2023 2:35 PM			
Lab ID	1923365			
General Chemistry	**Result**	**MDL**	**Units**	**Criteria: PWQO**
Conductivity	153	1	µS/cm	~
Dissolved Organic Carbon	18.5	0.4	mg/L	~
Free Cyanide	0.003	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	75	2	mg/L as CaCO3	~
pH	7.68	N/A	pH	~
Strong Acid Dissociable Cyanide	0.003 [<0.002]	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	72.4	0.1	mg/L	~
Total Phosphorus (as P)	0.015	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.002	0.001	mg/L	~

Sample Description	PRSLK			
Sample Date	9/1/2023 2:35 PM			
Lab ID	1923365			
Mercury (Trace)	**Result**	**MDL**	**Units**	**Criteria: PWQO**
Total Mercury	2.98	0.01	ng/L	200

Sample Description	PRSLK			
Sample Date	9/1/2023 2:35 PM			
Lab ID	1923365			
Mercury by CV	**Result**	**MDL**	**Units**	**Criteria: PWQO**
Mercury	<0.01	0.01	ug/L	0.2

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Canada Nickel Company Inc.

Work Order Number: 511255

Sample Description	PRSLK			
Sample Date	9/1/2023 2:35 PM			
Lab ID	1923365			
Metals (Dissolved - 0.2um)	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.061 [0.062]	0.001	mg/L	~

Sample Description	PRSLK			
Sample Date	9/1/2023 2:35 PM			
Lab ID	1923365			
Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.067 [0.067]	0.001	mg/L	~
Dissolved Antimony	0.0001 [0.0001]	0.0001	mg/L	~
Dissolved Arsenic	0.0005 [0.0005]	0.0001	mg/L	~
Dissolved Barium	0.0237 [0.0232]	0.0001	mg/L	~
Dissolved Beryllium	<0.00002 [<0.00002]	0.00002	mg/L	~
Dissolved Bismuth	0.00006 [<0.00005]	0.00005	mg/L	~
Dissolved Boron	0.006 [0.006]	0.002	mg/L	~
Dissolved Cadmium	0.000010 [0.000010]	0.000005	mg/L	~
Dissolved Calcium	19.8 [20.3]	0.5	mg/L	~
Dissolved Cerium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Cesium	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Chromium	0.0011 [0.0012]	0.0001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 511255

Sample Description	PRSLK
Sample Date	9/1/2023 2:35 PM
Lab ID	1923365

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Cobalt	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Copper	0.0017 [0.0017]	0.0002	mg/L	~
Dissolved Europium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Gallium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Iron	0.29 [0.29]	0.01	mg/L	~
Dissolved Lanthanum	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Lead	<0.00005 [<0.00005]	0.00005	mg/L	~
Dissolved Lithium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Magnesium	5.180 [5.170]	0.004	mg/L	~
Dissolved Manganese	0.0136 [0.0136]	0.0001	mg/L	~
Dissolved Mercury	<0.0001 [<0.0001]	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00020 [0.00019]	0.00005	mg/L	~
Dissolved Nickel	0.0006 [0.0006]	0.0005	mg/L	~
Dissolved Niobium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Phosphorus	<0.05 [<0.05]	0.05	mg/L	~
Dissolved Potassium	0.55 [0.55]	0.05	mg/L	~
Dissolved Rhodium	<0.001 [<0.001]	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 511255

Sample Description	PRSLK
Sample Date	9/1/2023 2:35 PM
Lab ID	1923365

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Rubidium	0.0013 [0.0013]	0.0002	mg/L	~
Dissolved Scandium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Selenium	0.00009 [<0.00005]	0.00005	mg/L	~
Dissolved Silicon	1.72 [1.75]	0.05	mg/L	~
Dissolved Silver	0.00003 [0.00002]	0.00001	mg/L	~
Dissolved Sodium	2.87 [2.89]	0.05	mg/L	~
Dissolved Strontium	0.0469 [0.0464]	0.0002	mg/L	~
Dissolved Sulfur	<0.5 [<0.5]	0.5	mg/L	~
Dissolved Tellurium	<0.0002 [<0.0002]	0.0002	mg/L	~
Dissolved Thallium	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Thorium	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Tin	0.0002 [0.0002]	0.0001	mg/L	~
Dissolved Titanium	0.0015 [0.0015]	0.0003	mg/L	~
Dissolved Tungsten	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Uranium	0.00006 [0.00006]	0.00001	mg/L	~
Dissolved Vanadium	0.0006 [0.0006]	0.0005	mg/L	~
Dissolved Yttrium	<0.001 [<0.001]	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 511255

Sample Description	PRSLK
Sample Date	9/1/2023 2:35 PM
Lab ID	1923365

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Zinc	0.004 [0.004]	0.001	mg/L	~
Dissolved Zirconium	0.0008 [0.0009]	0.0002	mg/L	~

Sample Description	PRSLK
Sample Date	9/1/2023 2:35 PM
Lab ID	1923365

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.081 [0.080]	0.001	mg/L	0.075
Total Antimony	0.0001 [0.0001]	0.0001	mg/L	0.02
Total Arsenic	0.0005 [0.0005]	0.0001	mg/L	0.005
Total Barium	0.0119 [0.0118]	0.0001	mg/L	~
Total Beryllium	<0.00002 [<0.00002]	0.00002	mg/L	0.011
Total Bismuth	<0.00005 [<0.00005]	0.00005	mg/L	~
Total Boron	0.006 [0.006]	0.002	mg/L	0.2
Total Cadmium	0.000010 [0.000010]	0.000005	mg/L	0.0001
Total Calcium	19.4 [19.90]	0.5	mg/L	~
Total Cerium	<0.001 [<0.001]	0.001	mg/L	~
Total Cesium	<0.00001 [<0.00001]	0.00001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 511255

Sample Description	PRSLK
Sample Date	9/1/2023 2:35 PM
Lab ID	1923365

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Chromium	0.0007 [0.0006]	0.0001	mg/L	~
Total Cobalt	<0.0001 [<0.0001]	0.0001	mg/L	0.0009
Total Copper	0.0011 [0.0010]	0.0002	mg/L	0.001
Total Europium	<0.001 [<0.001]	0.001	mg/L	~
Total Gallium	<0.001 [<0.001]	0.001	mg/L	~
Total Iron	0.32 [0.32]	0.01	mg/L	0.3
Total Lanthanum	<0.001 [<0.001]	0.001	mg/L	~
Total Lead	0.00007 [<0.00005]	0.00005	mg/L	0.001
Total Lithium	<0.001 [<0.001]	0.001	mg/L	~
Total Magnesium	5.080 [5.040]	0.004	mg/L	~
Total Manganese	0.0184 [0.0182]	0.0001	mg/L	~
Total Molybdenum	0.00018 [0.00017]	0.00005	mg/L	0.04
Total Nickel	<0.0005 [<0.0005]	0.0005	mg/L	0.025
Total Niobium	<0.001 [<0.001]	0.001	mg/L	~
Total Potassium	0.54 [0.54]	0.05	mg/L	~
Total Rhodium	<0.001 [<0.001]	0.001	mg/L	~
Total Rubidium	0.0012 [0.0012]	0.0002	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 511255

Sample Description	PRSLK
Sample Date	9/1/2023 2:35 PM
Lab ID	1923365

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Scandium	<0.001 [<0.001]	0.001	mg/L	~
Total Selenium	0.00008 [<0.00005]	0.00005	mg/L	0.1
Total Silicon	1.69 [1.70]	0.05	mg/L	~
Total Silver	<0.00001 [<0.00001]	0.00001	mg/L	0.0001
Total Sodium	2.85 [2.82]	0.05	mg/L	~
Total Strontium	0.0457 [0.0461]	0.0002	mg/L	~
Total Sulphur	<0.5 [<0.5]	0.5	mg/L	~
Total Tellurium	<0.0002 [<0.0002]	0.0002	mg/L	~
Total Thallium	<0.00001 [<0.00001]	0.00001	mg/L	0.0003
Total Thorium	<0.0001 [<0.0001]	0.0001	mg/L	~
Total Tin	0.0001 [0.0001]	0.0001	mg/L	~
Total Titanium	0.0020 [0.0019]	0.0003	mg/L	~
Total Tungsten	<0.0001 [<0.0001]	0.0001	mg/L	0.03
Total Uranium	0.00007 [0.00006]	0.00001	mg/L	0.005
Total Vanadium	<0.0005 [<0.0005]	0.0005	mg/L	0.006
Total Yttrium	<0.001 [<0.001]	0.001	mg/L	~
Total Zinc	0.002 [0.002]	0.001	mg/L	0.02

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Canada Nickel Company Inc.

Work Order Number: 511255

Sample Description	PRSLK			
Sample Date	9/1/2023 2:35 PM			
Lab ID	1923365			
Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Zirconium	0.0008 [0.0008]	0.0002	mg/L	0.004

Sample Description	PRSLK			
Sample Date	9/1/2023 2:35 PM			
Lab ID	1923365			
MethylMercury	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.13 [0.13]	0.02	ng/L	~

Sample Description	PRSLK			
Sample Date	9/1/2023 2:35 PM			
Lab ID	1923365			
Solids	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	105 [115]	10	mg/L	~
Total Suspended Solids	1.5 [1]	1	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 511255

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Organic Soil Analysis: Data reported for organic analysis in soils samples are corrected for moisture content.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

Reproduction of Report: Report shall not be reproduced, except in full, without the approval of Testmark Laboratories Ltd.

ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	512131
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	David Duciaume
Date Order Received:	9/11/2023	Analysis Started:	9/12/2023
Arrival Temperature:	17 °C	Analysis Completed:	9/29/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
NDR-S-06	1926480	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	9/11/2023	11:25 AM
JC-S-01	1926481	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	9/11/2023	12:00 PM
JCRK-02	1926482	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	9/11/2023	12:20 PM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 512131

Method	Lab	Description	Reference
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (0.2um) (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 512131

WORK ORDER RESULTS

Sample Description	NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	9/11/2023 11:25 AM		9/11/2023 12:00 PM		9/11/2023 12:20 PM			
Lab ID	1926480		1926481		1926482			
Anions	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	1.6	0.2	26.2	0.2	0.2 [0.2]	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05 [<0.05]	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	<0.5	0.5	<0.5	0.5	<0.5 [<0.5]	0.5	mg/L	~

Sample Description	NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	9/11/2023 11:25 AM		9/11/2023 12:00 PM		9/11/2023 12:20 PM			
Lab ID	1926480		1926481		1926482			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	6.18	N/A	4.19	N/A	4.92	N/A	pH	~
Field Temp	13.24	N/A	12.21	N/A	13.32	N/A	°C	~

Sample Description	NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	9/11/2023 11:25 AM		9/11/2023 12:00 PM		9/11/2023 12:20 PM			
Lab ID	1926480		1926481		1926482			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	6	5	12	5	6	5	mg/L as CaCO3	~
Ammonia (as N)	0.045	0.005	0.065	0.005	0.056	0.005	mg/L	~
Conductivity	110	1	131	1	57	1	µS/cm	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 512131

Sample Description	NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	9/11/2023 11:25 AM		9/11/2023 12:00 PM		9/11/2023 12:20 PM			
Lab ID	1926480		1926481		1926482			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Organic Carbon	34	2	52	2	42	2	mg/L	~
Free Cyanide	0.002	0.001	0.002	0.001	0.002	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	52	2	10	2	25	2	mg/L as CaCO3	~
pH	7.32	N/A	5.68	N/A	6.93	N/A	pH	~
Strong Acid Dissociable Cyanide	0.008 [0.005]	0.002	<0.002	0.002	<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	57.4	0.1	28.7	0.1	31.3	0.1	mg/L	~
Total Phosphorus (as P)	0.043	0.002	0.013	0.002	0.041	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.003	0.001	0.004	0.001	0.001	0.001	mg/L	~

Sample Description	NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	9/11/2023 11:25 AM		9/11/2023 12:00 PM		9/11/2023 12:20 PM			
Lab ID	1926480		1926481		1926482			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	3.26	0.01	2.46	0.01	4.76	0.01	ng/L	200

Sample Description	NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	9/11/2023 11:25 AM		9/11/2023 12:00 PM		9/11/2023 12:20 PM			
Lab ID	1926480		1926481		1926482			
Mercury by CV	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01	0.01	<0.01	0.01	ug/L	0.2

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Canada Nickel Company Inc.

Work Order Number: 512131

Sample Description	NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	9/11/2023 11:25 AM		9/11/2023 12:00 PM		9/11/2023 12:20 PM			
Lab ID	1926480		1926481		1926482			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.128	0.001	0.065	0.001	0.150 [0.147]	0.001	mg/L	~

Sample Description	NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	9/11/2023 11:25 AM		9/11/2023 12:00 PM		9/11/2023 12:20 PM			
Lab ID	1926480		1926481		1926482			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Antimony	<0.0001 [<0.0001]	0.0001	0.0014	0.0001	0.0004	0.0001	mg/L	~
Dissolved Arsenic	0.0009 [0.0009]	0.0001	0.0008	0.0001	0.0011	0.0001	mg/L	~
Dissolved Barium	0.0048 [0.0048]	0.0001	0.0050	0.0001	0.0044	0.0001	mg/L	~
Dissolved Beryllium	<0.00002 [<0.00002]	0.00002	<0.00002	0.00002	0.00002	0.00002	mg/L	~
Dissolved Bismuth	<0.00005 [<0.00005]	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Boron	0.004 [0.004]	0.002	0.002	0.002	0.003	0.002	mg/L	~
Dissolved Cadmium	0.000010 [0.000020]	0.000005	0.000040	0.000005	0.000030	0.000005	mg/L	~
Dissolved Calcium	15.10 [15.10]	0.05	8.34	0.05	8.96	0.05	mg/L	~
Dissolved Cerium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0010 [0.0010]	0.0001	0.0007	0.0001	0.0011	0.0001	mg/L	~
Dissolved Cobalt	0.0002 [0.0001]	0.0001	0.0002	0.0001	0.0002	0.0001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 512131

Sample Description	NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	9/11/2023 11:25 AM		9/11/2023 12:00 PM		9/11/2023 12:20 PM			
Lab ID	1926480		1926481		1926482			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Copper	0.0022 [0.0022]	0.0002	0.0019	0.0002	0.0023	0.0002	mg/L	~
Dissolved Europium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.44 [0.44]	0.01	0.48	0.01	0.5	0.1	mg/L	~
Dissolved Lanthanum	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	0.00011 [0.00012]	0.00005	0.00076	0.00005	0.00023	0.00005	mg/L	~
Dissolved Lithium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Magnesium	4.110 [4.120]	0.004	1.720	0.004	2.150	0.004	mg/L	~
Dissolved Manganese	0.0494 [0.0488]	0.0001	0.0502	0.0001	0.0345	0.0001	mg/L	~
Dissolved Mercury	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00010 [0.00009]	0.00005	0.00132	0.00005	0.00027	0.00005	mg/L	~
Dissolved Nickel	0.0005 [0.0006]	0.0005	<0.0005	0.0005	0.0009	0.0005	mg/L	~
Dissolved Niobium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05 [<0.05]	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.33 [0.33]	0.05	0.06	0.05	0.37	0.05	mg/L	~
Dissolved Rhodium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	0.0010 [0.0010]	0.0002	<0.0002	0.0002	0.0015	0.0002	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 512131

Sample Description	NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	9/11/2023 11:25 AM		9/11/2023 12:00 PM		9/11/2023 12:20 PM			
Lab ID	1926480		1926481		1926482			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Scandium	0.001 [0.001]	0.001	0.001	0.001	0.002	0.001	mg/L	~
Dissolved Selenium	0.00013 [0.00012]	0.00005	0.00036	0.00005	0.00011	0.00005	mg/L	~
Dissolved Silicon	1.77 [1.74]	0.05	1.80	0.05	2.96	0.05	mg/L	~
Dissolved Silver	0.00001 [0.00001]	0.00001	0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Sodium	2.19 [2.21]	0.05	14.10	0.05	0.84	0.05	mg/L	~
Dissolved Strontium	0.0247 [0.0249]	0.0002	0.0147	0.0002	0.0189	0.0002	mg/L	~
Dissolved Sulfur	<0.5 [<0.5]	0.5	<0.5	0.5	<0.5	0.5	mg/L	~
Dissolved Tellurium	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Thallium	<0.00001 [<0.00001]	0.00001	0.00007	0.00001	0.00002	0.00001	mg/L	~
Dissolved Thorium	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	0.0001	0.0001	mg/L	~
Dissolved Tin	0.0002 [0.0002]	0.0001	0.0002	0.0001	0.0002	0.0001	mg/L	~
Dissolved Titanium	0.0032 [0.0032]	0.0003	0.0024	0.0003	0.0059	0.0003	mg/L	~
Dissolved Tungsten	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Uranium	0.00004 [0.00004]	0.00001	<0.00001	0.00001	0.00004	0.00001	mg/L	~
Dissolved Vanadium	0.0006 [0.0006]	0.0005	<0.0005	0.0005	0.0007	0.0005	mg/L	~
Dissolved Yttrium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.002 [0.002]	0.001	0.010	0.001	0.007	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 512131

Sample Description	NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	9/11/2023 11:25 AM		9/11/2023 12:00 PM		9/11/2023 12:20 PM			
Lab ID	1926480		1926481		1926482			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Zirconium	0.0019 [0.0019]	0.0002	0.0008	0.0002	0.0027	0.0002	mg/L	~

Sample Description	NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	9/11/2023 11:25 AM		9/11/2023 12:00 PM		9/11/2023 12:20 PM			
Lab ID	1926480		1926481		1926482			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.260 [0.254]	0.001	0.152	0.001	0.245	0.001	mg/L	0.075
Total Antimony	<0.0001 [<0.0001]	0.0001	0.0012	0.0001	0.0003	0.0001	mg/L	0.02
Total Arsenic	0.0009 [0.0008]	0.0001	0.0008	0.0001	0.0010	0.0001	mg/L	0.005
Total Barium	0.0063 [0.0062]	0.0001	0.0053	0.0001	0.0050	0.0001	mg/L	~
Total Beryllium	<0.00002 [0.00002]	0.00002	<0.00002	0.00002	<0.00002	0.00002	mg/L	0.011
Total Bismuth	<0.00005 [<0.00005]	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Total Boron	0.003 [0.003]	0.002	<0.002	0.002	0.003	0.002	mg/L	0.2
Total Cadmium	0.000030 [0.000030]	0.000005	0.000050	0.000005	0.000030	0.000005	mg/L	0.0001
Total Calcium	14.80 [14.80]	0.05	8.21	0.05	8.72	0.05	mg/L	~
Total Cerium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Cesium	0.00002 [0.00002]	0.00001	<0.00001	0.00001	0.00001	0.00001	mg/L	~
Total Chromium	0.0008 [0.0008]	0.0001	0.0009	0.0001	0.0011	0.0001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 512131

Sample Description	NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	9/11/2023 11:25 AM		9/11/2023 12:00 PM		9/11/2023 12:20 PM			
Lab ID	1926480		1926481		1926482			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Cobalt	0.0003 [0.0003]	0.0001	0.0003	0.0001	0.0002	0.0001	mg/L	0.0009
Total Copper	0.0011 [0.0010]	0.0002	0.0017	0.0002	0.0015	0.0002	mg/L	0.001
Total Europium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.71 [0.71]	0.01	0.53	0.01	0.6	0.1	mg/L	0.3
Total Lanthanum	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00031 [0.00032]	0.00005	0.00085	0.00005	0.00028	0.00005	mg/L	0.001
Total Lithium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Magnesium	4.120 [4.070]	0.004	1.720	0.004	2.100	0.004	mg/L	~
Total Manganese	0.0634 [0.0633]	0.0001	0.0505	0.0001	0.0373	0.0001	mg/L	~
Total Molybdenum	0.00009 [0.00007]	0.00005	0.00144	0.00005	0.00048	0.00005	mg/L	0.04
Total Nickel	0.0008 [0.0007]	0.0005	<0.0005	0.0005	0.0012	0.0005	mg/L	0.025
Total Niobium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.36 [0.36]	0.05	0.09	0.05	0.39	0.05	mg/L	~
Total Rhodium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	0.0014 [0.0014]	0.0002	0.0002	0.0002	0.0015	0.0002	mg/L	~
Total Scandium	0.002 [0.001]	0.001	0.001	0.001	0.002	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 512131

Sample Description	NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	9/11/2023 11:25 AM		9/11/2023 12:00 PM		9/11/2023 12:20 PM			
Lab ID	1926480		1926481		1926482			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Selenium	0.00014 [0.00018]	0.00005	0.00028	0.00005	0.00009	0.00005	mg/L	0.1
Total Silicon	1.93 [1.93]	0.05	1.90	0.05	2.99	0.05	mg/L	~
Total Silver	0.00003 [<0.00001]	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0001
Total Sodium	2.16 [2.13]	0.05	14.50	0.05	0.90	0.05	mg/L	~
Total Strontium	0.0253 [0.0252]	0.0002	0.0150	0.0002	0.0188	0.0002	mg/L	~
Total Sulphur	<0.5 [<0.5]	0.5	<0.5	0.5	<0.5	0.5	mg/L	~
Total Tellurium	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Total Thallium	<0.00001 [<0.00001]	0.00001	0.00005	0.00001	0.00001	0.00001	mg/L	0.0003
Total Thorium	0.0001 [0.0001]	0.0001	<0.0001	0.0001	0.0001	0.0001	mg/L	~
Total Tin	0.0001 [0.0001]	0.0001	0.0002	0.0001	0.0001	0.0001	mg/L	~
Total Titanium	0.0087 [0.0084]	0.0003	0.0032	0.0003	0.0076	0.0003	mg/L	~
Total Tungsten	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00004 [0.00004]	0.00001	<0.00001	0.00001	0.00004	0.00001	mg/L	0.005
Total Vanadium	0.0008 [0.0009]	0.0005	<0.0005	0.0005	0.0007	0.0005	mg/L	0.006
Total Yttrium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.003 [0.003]	0.001	0.010	0.001	0.006	0.001	mg/L	0.02
Total Zirconium	0.0031 [0.0029]	0.0002	0.0008	0.0002	0.0024	0.0002	mg/L	0.004

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 512131

Sample Description	NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	9/11/2023 11:25 AM		9/11/2023 12:00 PM		9/11/2023 12:20 PM			
Lab ID	1926480		1926481		1926482			
MethylMercury	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.12 [0.11]	0.02	0.22	0.02	0.16	0.02	ng/L	~

Sample Description	NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	9/11/2023 11:25 AM		9/11/2023 12:00 PM		9/11/2023 12:20 PM			
Lab ID	1926480		1926481		1926482			
Solids	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	95	10	105	10	105	10	mg/L	~
Total Suspended Solids	7.67	0.67	1.00	0.67	5.30	0.67	mg/L	~

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Organic Soil Analysis: Data reported for organic analysis in soils samples are corrected for moisture content.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	512902
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation:	PWQO
		Project #:	Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	Adam Gauthier & David Duciaume
Date Order Received:	9/18/2023	Analysis Started:	9/19/2023
Arrival Temperature:	15 °C	Analysis Completed:	10/10/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
NDR-S-02	1929231	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	9/18/2023	11:10 AM
NDR.S-04b	1929232	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	9/18/2023	10:25 AM
WBR-P-03	1929233	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	9/14/2023	9:15 AM
SWDup	1929234	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	9/18/2023	

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 512902

Method	Lab	Description	Reference
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 512902

WORK ORDER RESULTS

Sample Description	NDR - S - 02		NDR.S - 04b		WBR - P - 03		SWDup			
Sample Date	9/18/2023 11:10 AM		9/18/2023 10:25 AM		9/14/2023 9:15 AM		9/18/2023 12:00 AM			
Lab ID	1929231		1929232		1929233		1929234			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	1.3	0.2	3.5 [3.4]	0.2	<0.2	0.2	3.5	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05 [<0.05]	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	<0.5	0.5	<0.5 [<0.5]	0.5	<0.5	0.5	0.6	0.5	mg/L	~

Sample Description	NDR - S - 02		NDR.S - 04b		WBR - P - 03			
Sample Date	9/18/2023 11:10 AM		9/18/2023 10:25 AM		9/14/2023 9:15 AM			
Lab ID	1929231		1929232		1929233			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	5.9	N/A	5.69	N/A	4.84	N/A	pH	~
Field Temp	12.33	N/A	12.28	N/A	10.37	N/A	°C	~

Sample Description	NDR - S - 02		NDR.S - 04b		WBR - P - 03		SWDup			
Sample Date	9/18/2023 11:10 AM		9/18/2023 10:25 AM		9/14/2023 9:15 AM		9/18/2023 12:00 AM			
Lab ID	1929231		1929232		1929233		1929234			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	7	5	7	5	16	5	8	5	mg/L as CaCO3	~
Ammonia (as N)	0.26	0.05	0.054	0.005	0.046	0.005	0.053	0.005	mg/L	~
Conductivity	90	1	114	1	34	1	96	1	µS/cm	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 512902

Sample Description	NDR - S - 02		NDR.S - 04b		WBR - P - 03		SWDup			
Sample Date	9/18/2023 11:10 AM		9/18/2023 10:25 AM		9/14/2023 9:15 AM		9/18/2023 12:00 AM			
Lab ID	1929231		1929232		1929233		1929234			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Organic Carbon	32.7	0.8	36.3	0.8	35.2	0.8	40	2	mg/L	~
Free Cyanide			0.003	0.001			0.003	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	41	2	43	2	12	2	41	2	mg/L as CaCO3	~
pH	7.08	N/A	7.26	N/A	5.92	N/A	6.98	N/A	pH	~
Strong Acid Dissociable Cyanide			<0.002 [<0.002]	0.002			<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	45.4	0.1	46.4	0.1	18.3	0.1	46.7	0.1	mg/L	~
Total Phosphorus (as P)	0.029	0.002	0.033	0.002	0.026	0.002	0.029	0.002	mg/L	~
Weak Acid Dissociable Cyanide			0.005	0.001			0.002	0.001	mg/L	~

Sample Description	NDR.S - 04b		SWDup			
Sample Date	9/18/2023 10:25 AM		9/18/2023 12:00 AM			
Lab ID	1929232		1929234			
Mercury (Trace)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	4.04	0.01	4.17	0.01	ng/L	200

Sample Description	NDR.S - 04b		SWDup			
Sample Date	9/18/2023 10:25 AM		9/18/2023 12:00 AM			
Lab ID	1929232		1929234			
Mercury by CV	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01	0.01	ug/L	0.2

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Canada Nickel Company Inc.

Work Order Number: 512902

Sample Description	NDR - S - 02		NDR.S - 04b		WBR - P - 03		SWDup			
Sample Date	9/18/2023 11:10 AM		9/18/2023 10:25 AM		9/14/2023 9:15 AM		9/18/2023 12:00 AM			
Lab ID	1929231		1929232		1929233		1929234			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.101	0.001	0.117	0.001	0.128 [0.129]	0.001	0.120	0.001	mg/L	~

Sample Description	NDR - S - 02		NDR.S - 04b		WBR - P - 03		SWDup			
Sample Date	9/18/2023 11:10 AM		9/18/2023 10:25 AM		9/14/2023 9:15 AM		9/18/2023 12:00 AM			
Lab ID	1929231		1929232		1929233		1929234			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Antimony	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	0.0014	0.0001	mg/L	~
Dissolved Arsenic	0.0008	0.0001	0.0008	0.0001	0.0007 [0.0007]	0.0001	0.0008	0.0001	mg/L	~
Dissolved Barium	0.0050	0.0001	0.0057	0.0001	0.0066 [0.0062]	0.0001	0.0063	0.0001	mg/L	~
Dissolved Beryllium	<0.00002	0.00002	<0.00002	0.00002	<0.00002 [<0.00002]	0.00002	0.00003	0.00002	mg/L	~
Dissolved Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Boron	0.005	0.002	0.005	0.002	0.004 [0.004]	0.002	0.005	0.002	mg/L	~
Dissolved Cadmium	0.000010	0.000005	0.000020	0.000005	0.000020 [0.000020]	0.000005	0.000020	0.000005	mg/L	~
Dissolved Calcium	12.70	0.05	13.00	0.05	4.83 [4.90]	0.05	13.30	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0015	0.0001	0.0014	0.0001	0.0011 [0.0010]	0.0001	0.0014	0.0001	mg/L	~
Dissolved Cobalt	<0.0001	0.0001	0.0001	0.0001	0.0001 [0.0001]	0.0001	0.0001	0.0001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 512902

Sample Description	NDR - S - 02		NDR.S - 04b		WBR - P - 03		SWDup			
Sample Date	9/18/2023 11:10 AM		9/18/2023 10:25 AM		9/14/2023 9:15 AM		9/18/2023 12:00 AM			
Lab ID	1929231		1929232		1929233		1929234			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Copper	0.0015	0.0002	0.0008	0.0002	0.0008 [0.0007]	0.0002	0.0008	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.40	0.01	0.46	0.01	0.47 [0.47]	0.01	0.46	0.01	mg/L	~
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	0.00011	0.00005	0.00013	0.00005	0.00016 [0.00016]	0.00005	0.00013	0.00005	mg/L	~
Dissolved Lithium	0.001	0.001	0.001	0.001	0.001 [0.001]	0.001	0.001	0.001	mg/L	~
Dissolved Magnesium	3.200	0.004	3.430	0.004	1.430 [1.440]	0.004	3.470	0.004	mg/L	~
Dissolved Manganese	0.0333	0.0001	0.0525	0.0001	0.0411 [0.0415]	0.0001	0.0529	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00021	0.00005	0.00012	0.00005	<0.00005 [<0.00005]	0.00005	0.00132	0.00005	mg/L	~
Dissolved Nickel	0.0007	0.0005	0.0008	0.0005	0.0006 [0.0007]	0.0005	0.0008	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05	0.05	<0.05 [<0.05]	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.23	0.05	0.25	0.05	0.15 [0.15]	0.05	0.25	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	0.0007	0.0002	0.0009	0.0002	0.0008 [0.0008]	0.0002	0.0009	0.0002	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 512902

Sample Description	NDR - S - 02		NDR.S - 04b		WBR - P - 03		SWDup			
Sample Date	9/18/2023 11:10 AM		9/18/2023 10:25 AM		9/14/2023 9:15 AM		9/18/2023 12:00 AM			
Lab ID	1929231		1929232		1929233		1929234			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Scandium	0.001	0.001	0.001	0.001	0.001 [0.001]	0.001	0.001	0.001	mg/L	~
Dissolved Selenium	0.00016	0.00005	0.00019	0.00005	0.00010 [<0.00005]	0.00005	0.00023	0.00005	mg/L	~
Dissolved Silicon	2.04	0.05	2.28	0.05	2.30 [2.31]	0.05	2.29	0.05	mg/L	~
Dissolved Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Sodium	1.68	0.05	3.17	0.05	0.43 [0.43]	0.05	3.19	0.05	mg/L	~
Dissolved Strontium	0.0228	0.0002	0.0241	0.0002	0.0121 [0.0122]	0.0002	0.0240	0.0002	mg/L	~
Dissolved Sulfur	2.0	0.5	2.0	0.5	1.5 [1.6]	0.5	1.8	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	0.00007	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Tin	0.0003	0.0001	0.0003	0.0001	0.0003 [0.0003]	0.0001	0.0003	0.0001	mg/L	~
Dissolved Titanium	0.0026	0.0003	0.0034	0.0003	0.0022 [0.0022]	0.0003	0.0034	0.0003	mg/L	~
Dissolved Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Uranium	0.00002	0.00001	0.00004	0.00001	<0.00001 [<0.00001]	0.00001	0.00003	0.00001	mg/L	~
Dissolved Vanadium	0.0007	0.0005	0.0007	0.0005	<0.0005 [<0.0005]	0.0005	0.0007	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.002	0.001	0.003	0.001	0.004 [0.004]	0.001	0.003	0.001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 512902

Sample Description	NDR - S - 02		NDR.S - 04b		WBR - P - 03		SWDup			
Sample Date	9/18/2023 11:10 AM		9/18/2023 10:25 AM		9/14/2023 9:15 AM		9/18/2023 12:00 AM			
Lab ID	1929231		1929232		1929233		1929234			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Zirconium	0.0011	0.0002	0.0014	0.0002	0.0006 [0.0006]	0.0002	0.0014	0.0002	mg/L	~

Sample Description	NDR - S - 02		NDR.S - 04b		WBR - P - 03		SWDup			
Sample Date	9/18/2023 11:10 AM		9/18/2023 10:25 AM		9/14/2023 9:15 AM		9/18/2023 12:00 AM			
Lab ID	1929231		1929232		1929233		1929234			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.193	0.001	0.229	0.001	0.135 [0.135]	0.001	0.224	0.001	mg/L	0.075
Total Antimony	0.0003	0.0001	0.0002	0.0001	0.0001 [<0.0001]	0.0001	0.0025	0.0001	mg/L	0.02
Total Arsenic	0.0007	0.0001	0.0008	0.0001	0.0006 [0.0006]	0.0001	0.0008	0.0001	mg/L	0.005
Total Barium	0.0062	0.0001	0.0077	0.0001	0.0040 [0.0039]	0.0001	0.0064	0.0001	mg/L	~
Total Beryllium	<0.00002	0.00002	<0.00002	0.00002	<0.00002 [<0.00002]	0.00002	0.00003	0.00002	mg/L	0.011
Total Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	<0.00005	0.00005	mg/L	~
Total Boron	0.005	0.002	0.005	0.002	0.004 [0.003]	0.002	0.005	0.002	mg/L	0.2
Total Cadmium	0.000020	0.000005	0.000020	0.000005	0.000020 [0.000010]	0.000005	0.000040	0.000005	mg/L	0.0001
Total Calcium	12.70	0.05	12.90	0.05	5.02 [4.90]	0.05	13.20	0.05	mg/L	~
Total Cerium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Total Cesium	0.00001	0.00001	0.00001	0.00001	<0.00001 [<0.00001]	0.00001	0.00001	0.00001	mg/L	~
Total Chromium	0.0012	0.0001	0.0013	0.0001	0.0011 [0.0012]	0.0001	0.0014	0.0001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 512902

Sample Description	NDR - S - 02		NDR.S - 04b		WBR - P - 03		SWDup			
Sample Date	9/18/2023 11:10 AM		9/18/2023 10:25 AM		9/14/2023 9:15 AM		9/18/2023 12:00 AM			
Lab ID	1929231		1929232		1929233		1929234			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Cobalt	0.0002	0.0001	0.0002	0.0001	0.0002 [0.0001]	0.0001	0.0002	0.0001	mg/L	0.0009
Total Copper	0.0018	0.0002	0.0010	0.0002	0.0006 [0.0009]	0.0002	0.0015	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Total Iron	0.52	0.01	0.59	0.01	0.51 [0.50]	0.01	0.60	0.01	mg/L	0.3
Total Lanthanum	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00033	0.00005	0.00025	0.00005	0.00019 [0.00025]	0.00005	0.00036	0.00005	mg/L	0.001
Total Lithium	0.001	0.001	0.001	0.001	0.001 [0.001]	0.001	0.001	0.001	mg/L	~
Total Magnesium	3.240	0.004	3.480	0.004	1.460 [1.440]	0.004	3.510	0.004	mg/L	~
Total Manganese	0.0434	0.0001	0.0631	0.0001	0.0435 [0.0422]	0.0001	0.0640	0.0001	mg/L	~
Total Mercury	<0.0001	0.0001			<0.0001 [<0.0001]	0.0001			mg/L	0.0002
Total Molybdenum	0.00014	0.00005	0.00010	0.00005	<0.00005 [0.00015]	0.00005	0.00100	0.00005	mg/L	0.04
Total Nickel	0.0006	0.0005	0.0007	0.0005	<0.0005 [0.0005]	0.0005	0.0008	0.0005	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.26	0.05	0.28	0.05	0.17 [0.19]	0.05	0.28	0.05	mg/L	~
Total Rhodium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Total Rubidium	0.0009	0.0002	0.0011	0.0002	0.0008 [0.0008]	0.0002	0.0011	0.0002	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 512902

Sample Description	NDR - S - 02		NDR.S - 04b		WBR - P - 03		SWDup			
Sample Date	9/18/2023 11:10 AM		9/18/2023 10:25 AM		9/14/2023 9:15 AM		9/18/2023 12:00 AM			
Lab ID	1929231		1929232		1929233		1929234			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Scandium	0.001	0.001	0.001	0.001	0.001 [0.001]	0.001	0.001	0.001	mg/L	~
Total Selenium	0.00020	0.00005	0.00022	0.00005	0.00011 [0.00013]	0.00005	0.00029	0.00005	mg/L	0.1
Total Silicon	2.19	0.05	2.50	0.05	2.38 [2.36]	0.05	2.50	0.05	mg/L	~
Total Silver	0.00003	0.00001	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	mg/L	0.0001
Total Sodium	1.69	0.05	3.19	0.05	0.47 [0.44]	0.05	3.22	0.05	mg/L	~
Total Strontium	0.0232	0.0002	0.0242	0.0002	0.0122 [0.0123]	0.0002	0.0243	0.0002	mg/L	~
Total Sulphur	1.8	0.5	2.1	0.5	1.8 [1.6]	0.5	1.9	0.5	mg/L	~
Total Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	mg/L	~
Total Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	0.00007	0.00001	mg/L	0.0003
Total Thorium	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	~
Total Tin	0.0005	0.0001	0.0006	0.0001	0.0005 [0.0005]	0.0001	0.0006	0.0001	mg/L	~
Total Titanium	0.0056	0.0003	0.0067	0.0003	0.0028 [0.0026]	0.0003	0.0064	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00003	0.00001	0.00003	0.00001	<0.00001 [<0.00001]	0.00001	0.00003	0.00001	mg/L	0.005
Total Vanadium	0.0007	0.0005	0.0008	0.0005	<0.0005 [<0.0005]	0.0005	0.0009	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.006	0.001	0.003	0.001	0.004 [0.005]	0.001	0.003	0.001	mg/L	0.02

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 512902

Sample Description	NDR - S - 02		NDR.S - 04b		WBR - P - 03		SWDup			
Sample Date	9/18/2023 11:10 AM		9/18/2023 10:25 AM		9/14/2023 9:15 AM		9/18/2023 12:00 AM			
Lab ID	1929231		1929232		1929233		1929234			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Zirconium	0.0014	0.0002	0.0016	0.0002	0.0006 [0.0005]	0.0002	0.0016	0.0002	mg/L	0.004

Sample Description	NDR.S - 04b		SWDup			
Sample Date	9/18/2023 10:25 AM		9/18/2023 12:00 AM			
Lab ID	1929232		1929234			
MethylMercury	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.12	0.02	0.12 [0.12]	0.02	ng/L	~

Sample Description	NDR - S - 02		NDR.S - 04b		WBR - P - 03		SWDup			
Sample Date	9/18/2023 11:10 AM		9/18/2023 10:25 AM		9/14/2023 9:15 AM		9/18/2023 12:00 AM			
Lab ID	1929231		1929232		1929233		1929234			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	85	10	95	10	75	10	90	10	mg/L	~
Total Suspended Solids	8.33	0.67	4.30	0.67	1.00	0.67	4.30	0.67	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 512902

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Organic Soil Analysis: Data reported for organic analysis in soils samples are corrected for moisture content.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	513650
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	Adam Gauthier & David Duciaume
Date Order Received:	9/25/2023	Analysis Started:	9/26/2023
Arrival Temperature:	8 °C	Analysis Completed:	10/10/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
MATR-01	1931819	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	9/22/2023	12:10 PM
JCRK-01	1931820	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	9/21/2023	10:10 AM
MATR-REF	1931821	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	9/21/2023	10:39 AM
WBR-S-06	1931822	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	9/20/2023	10:35 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C

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Method	Lab	Description	Reference
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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WORK ORDER RESULTS

Sample Description	MATR - 01		JCRK - 01		MATR - REF		WBR - S - 06			
Sample Date	9/22/2023 12:10 PM		9/21/2023 10:10 AM		9/21/2023 10:39 AM		9/20/2023 10:35 AM			
Lab ID	1931819		1931820		1931821		1931822			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	1.7	0.2	1.7	0.2	1.6	0.2	0.3	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	<0.1	0.1	0.1	0.1	mg/L	~
Nitrite (as N)	0.02	0.01	0.02	0.01	0.02	0.01	0.01	0.01	mg/L	~
Sulphate	2.9	0.5	2.9	0.5	2.8	0.5	0.8	0.5	mg/L	~

Sample Description	MATR - 01		JCRK - 01		MATR - REF		WBR - S - 06			
Sample Date	9/22/2023 12:10 PM		9/21/2023 10:10 AM		9/21/2023 10:39 AM		9/20/2023 10:35 AM			
Lab ID	1931819		1931820		1931821		1931822			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	5.48	N/A	5.1	N/A	5.24	N/A	5.55	N/A	pH	~
Field Temp	15.25	N/A	15.23	N/A	15.19	N/A	9.13	N/A	°C	~

Sample Description	MATR - 01		JCRK - 01		MATR - REF		WBR - S - 06			
Sample Date	9/22/2023 12:10 PM		9/21/2023 10:10 AM		9/21/2023 10:39 AM		9/20/2023 10:35 AM			
Lab ID	1931819		1931820		1931821		1931822			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	5	5	<5	5	<5	5	7	5	mg/L as CaCO3	~
Ammonia (as N)	0.020	0.005	0.018	0.005	0.018	0.005	0.068	0.005	mg/L	~
Conductivity	98	1	109	1	103	1	58	1	µS/cm	~

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Sample Description	MATR - 01		JCRK - 01		MATR - REF		WBR - S - 06			
Sample Date	9/22/2023 12:10 PM		9/21/2023 10:10 AM		9/21/2023 10:39 AM		9/20/2023 10:35 AM			
Lab ID	1931819		1931820		1931821		1931822			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Organic Carbon	15.9	0.4	15.7 [15.9]	0.4	15.9	0.4	50	2	mg/L	~
Free Cyanide	0.004	0.001	0.003	0.001			0.003	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	46	2	46	2	44	2	26	2	mg/L as CaCO3	~
pH	7.39	N/A	7.53	N/A	7.58	N/A	6.81	N/A	pH	~
Strong Acid Dissociable Cyanide	<0.002	0.002	<0.002	0.002			<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	50.8	0.1	51.1	0.1	51.4	0.1	40.8	0.1	mg/L	~
Total Phosphorus (as P)	0.018	0.002	0.033	0.002	0.018	0.002	0.031	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.008 [0.009]	0.001	0.009	0.001			0.003	0.001	mg/L	~

Sample Description	MATR - 01		JCRK - 01		WBR - S - 06			
Sample Date	9/22/2023 12:10 PM		9/21/2023 10:10 AM		9/20/2023 10:35 AM			
Lab ID	1931819		1931820		1931822			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	2.93	0.01	3.03	0.01	7.95	0.01	ng/L	200

Sample Description	MATR - 01		JCRK - 01		WBR - S - 06			
Sample Date	9/22/2023 12:10 PM		9/21/2023 10:10 AM		9/20/2023 10:35 AM			
Lab ID	1931819		1931820		1931822			
Mercury by CV	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01 [<0.01]	0.01	<0.01	0.01	ug/L	0.2

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Sample Date	9/22/2023 12:10 PM		9/21/2023 10:10 AM		9/21/2023 10:39 AM		9/20/2023 10:35 AM			
Lab ID	1931819		1931820		1931821		1931822			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.046 [0.046]	0.001	0.042	0.001	0.043	0.001	0.258	0.001	mg/L	~

Sample Description	MATR - 01		JCRK - 01		MATR - REF		WBR - S - 06			
Sample Date	9/22/2023 12:10 PM		9/21/2023 10:10 AM		9/21/2023 10:39 AM		9/20/2023 10:35 AM			
Lab ID	1931819		1931820		1931821		1931822			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Antimony	0.0017	0.0001	0.0005	0.0001	0.0003	0.0001	0.0002	0.0001	mg/L	~
Dissolved Arsenic	0.0006	0.0001	0.0005	0.0001	0.0005	0.0001	0.0010	0.0001	mg/L	~
Dissolved Barium	0.0050	0.0001	0.0050	0.0001	0.0050	0.0001	0.0060	0.0001	mg/L	~
Dissolved Beryllium	<0.00002	0.00002	0.00003	0.00002	<0.00002	0.00002	<0.00002	0.00002	mg/L	~
Dissolved Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Boron	0.008	0.002	0.008	0.002	0.008	0.002	0.005	0.002	mg/L	~
Dissolved Cadmium	0.000010	0.000005	0.000010	0.000005	0.000008	0.000005	0.000040	0.000005	mg/L	~
Dissolved Calcium	15.40	0.05	15.40	0.05	15.30	0.05	11.80	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0011	0.0001	0.0011	0.0001	0.0011	0.0001	0.0015	0.0001	mg/L	~
Dissolved Cobalt	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	0.0001	0.0001	mg/L	~
Dissolved Copper	0.0019	0.0002	0.0013	0.0002	0.0012	0.0002	0.0029	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.18	0.01	0.18	0.01	0.18	0.01	0.6	0.1	mg/L	~
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

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Lab ID	1931819		1931820		1931821		1931822			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Lead	<0.00005	0.00005	<0.00005	0.00005	0.00005	0.00005	0.00026	0.00005	mg/L	~
Dissolved Lithium	<0.001	0.001	<0.001	0.001	<0.001	0.001	0.001	0.001	mg/L	~
Dissolved Magnesium	3.470	0.004	3.520	0.004	3.430	0.004	2.650	0.004	mg/L	~
Dissolved Manganese	0.0091	0.0001	0.0109	0.0001	0.0132	0.0001	0.0316	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Nickel	0.0006	0.0005	0.0006	0.0005	0.0006	0.0005	0.0011	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.41	0.05	0.41	0.05	0.41	0.05	0.27	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	0.0010	0.0002	0.0010	0.0002	0.0010	0.0002	0.0008	0.0002	mg/L	~
Dissolved Scandium	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	mg/L	~
Dissolved Selenium	0.00010	0.00005	<0.00005	0.00005	<0.00005	0.00005	0.00011	0.00005	mg/L	~
Dissolved Silicon	2.96	0.05	2.95	0.05	2.89	0.05	2.63	0.05	mg/L	~
Dissolved Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Sodium	1.94	0.05	2.03	0.05	1.96	0.05	1.19	0.05	mg/L	~
Dissolved Strontium	0.0215	0.0002	0.0219	0.0002	0.0220	0.0002	0.0212	0.0002	mg/L	~
Dissolved Sulfur	4.0	0.5	4.1	0.5	4.1	0.5	3.4	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Thallium	0.00009	0.00001	0.00002	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	0.0001	0.0001	mg/L	~
Dissolved Tin	0.0002	0.0001	0.0002	0.0001	0.0002	0.0001	0.0002	0.0001	mg/L	~
Dissolved Titanium	0.0017	0.0003	0.0018	0.0003	0.0018	0.0003	0.0094	0.0003	mg/L	~

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Sample Date	9/22/2023 12:10 PM		9/21/2023 10:10 AM		9/21/2023 10:39 AM		9/20/2023 10:35 AM			
Lab ID	1931819		1931820		1931821		1931822			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Uranium	0.00005	0.00001	0.00005	0.00001	0.00005	0.00001	0.00005	0.00001	mg/L	~
Dissolved Vanadium	0.0006	0.0005	0.0006	0.0005	0.0006	0.0005	0.0011	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.002	0.001	0.002	0.001	0.002	0.001	0.006	0.001	mg/L	~
Dissolved Zirconium	0.0007	0.0002	0.0008	0.0002	0.0008	0.0002	0.0029	0.0002	mg/L	~

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Lab ID	1931819		1931820		1931821		1931822			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.185 [0.179]	0.001	0.145	0.001	0.165	0.001	0.402	0.001	mg/L	0.075
Total Antimony	<0.0001 [<0.0001]	0.0001	0.0012	0.0001	0.0004	0.0001	0.0002	0.0001	mg/L	0.02
Total Arsenic	0.0012 [0.0009]	0.0001	0.0005	0.0001	0.0005	0.0001	0.0010	0.0001	mg/L	0.005
Total Barium	0.0062 [0.0062]	0.0001	0.0059	0.0001	0.0059	0.0001	0.0071	0.0001	mg/L	~
Total Beryllium	0.00002 [<0.00002]	0.00002	<0.00002	0.00002	<0.00002	0.00002	0.00003	0.00002	mg/L	0.011
Total Bismuth	<0.00005 [<0.00005]	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Total Boron	0.007 [0.006]	0.002	0.007	0.002	0.007	0.002	0.005	0.002	mg/L	0.2
Total Cadmium	0.000010 [0.000010]	0.000005	0.000020	0.000005	0.000010	0.000005	0.000050	0.000005	mg/L	0.0001
Total Calcium	14.80 [14.60]	0.05	14.40	0.05	14.70	0.05	11.70	0.05	mg/L	~

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Lab ID	1931819		1931820		1931821		1931822			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Cerium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	0.001	0.001	mg/L	~
Total Cesium	0.00002 [0.00002]	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	mg/L	~
Total Chromium	0.0011 [0.0009]	0.0001	0.0011	0.0001	0.0009	0.0001	0.0016	0.0001	mg/L	~
Total Cobalt	0.0002 [0.0001]	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	mg/L	0.0009
Total Copper	0.0020 [0.0010]	0.0002	0.0009	0.0002	0.0011	0.0002	0.0020	0.0002	mg/L	0.001
Total Europium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.34 [0.32]	0.01	0.30	0.01	0.30	0.01	0.9	0.1	mg/L	0.3
Total Lanthanum	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00015 [0.00012]	0.00005	0.00012	0.00005	0.00012	0.00005	0.00043	0.00005	mg/L	0.001
Total Lithium	0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	0.001	0.001	mg/L	~
Total Magnesium	3.460 [3.400]	0.004	3.400	0.004	3.440	0.004	2.790	0.004	mg/L	~
Total Manganese	0.0260 [0.0257]	0.0001	0.0246	0.0001	0.0236	0.0001	0.0441	0.0001	mg/L	~
Total Mercury					<0.0001	0.0001			mg/L	0.0002
Total Molybdenum	<0.00005 [<0.00005]	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	0.04
Total Nickel	0.0007 [0.0006]	0.0005	0.0005	0.0005	0.0006	0.0005	0.0012	0.0005	mg/L	0.025
Total Niobium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 513650

Sample Description	MATR - 01		JCRK - 01		MATR - REF		WBR - S - 06			
Sample Date	9/22/2023 12:10 PM		9/21/2023 10:10 AM		9/21/2023 10:39 AM		9/20/2023 10:35 AM			
Lab ID	1931819		1931820		1931821		1931822			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Potassium	0.46 [0.42]	0.05	0.42	0.05	0.43	0.05	0.28	0.05	mg/L	~
Total Rhodium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	0.0012 [0.0012]	0.0002	0.0011	0.0002	0.0012	0.0002	0.0010	0.0002	mg/L	~
Total Scandium	0.001 [0.001]	0.001	0.001	0.001	0.001	0.001	0.001	0.001	mg/L	~
Total Selenium	0.00007 [0.00007]	0.00005	0.00015	0.00005	0.00009	0.00005	0.00011	0.00005	mg/L	0.1
Total Silicon	3.17 [3.10]	0.05	2.97	0.05	3.03	0.05	2.76	0.05	mg/L	~
Total Silver	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0001
Total Sodium	2.08 [1.85]	0.05	1.85	0.05	1.90	0.05	1.16	0.05	mg/L	~
Total Strontium	0.0216 [0.0215]	0.0002	0.0216	0.0002	0.0221	0.0002	0.0224	0.0002	mg/L	~
Total Sulphur	3.9 [3.6]	0.5	3.3	0.5	3.6	0.5	2.7	0.5	mg/L	~
Total Tellurium	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Total Thallium	0.00003 [<0.00001]	0.00001	0.00005	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0003
Total Thorium	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	0.0002	0.0001	mg/L	~
Total Tin	0.0004 [0.0004]	0.0001	0.0004	0.0001	0.0004	0.0001	0.0005	0.0001	mg/L	~
Total Titanium	0.0066 [0.0067]	0.0003	0.0055	0.0003	0.0061	0.0003	0.0121	0.0003	mg/L	~
Total Tungsten	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00006 [0.00005]	0.00001	0.00005	0.00001	0.00005	0.00001	0.00006	0.00001	mg/L	0.005

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 513650

Sample Description	MATR - 01		JCRK - 01		MATR - REF		WBR - S - 06			
Sample Date	9/22/2023 12:10 PM		9/21/2023 10:10 AM		9/21/2023 10:39 AM		9/20/2023 10:35 AM			
Lab ID	1931819		1931820		1931821		1931822			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Vanadium	0.0007 [0.0007]	0.0005	0.0006	0.0005	0.0007	0.0005	0.0012	0.0005	mg/L	0.006
Total Yttrium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.003 [0.003]	0.001	0.002	0.001	0.002	0.001	0.006	0.001	mg/L	0.02
Total Zirconium	0.0010 [0.0011]	0.0002	0.0010	0.0002	0.0010	0.0002	0.0030	0.0002	mg/L	0.004

Sample Description	MATR - 01		JCRK - 01		WBR - S - 06			
Sample Date	9/22/2023 12:10 PM		9/21/2023 10:10 AM		9/20/2023 10:35 AM			
Lab ID	1931819		1931820		1931822			
MethylMercury	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.11 [0.10]	0.02	0.12	0.02	0.20	0.02	ng/L	~

Sample Description	MATR - 01		JCRK - 01		MATR - REF		WBR - S - 06			
Sample Date	9/22/2023 12:10 PM		9/21/2023 10:10 AM		9/21/2023 10:39 AM		9/20/2023 10:35 AM			
Lab ID	1931819		1931820		1931821		1931822			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	125 [135]	10	70	10	75	10	120	10	mg/L	~
Total Suspended Solids	3.5 [2]	1	5.00	0.67	2.70	0.67	8.67	0.67	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 513650

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Organic Soil Analysis: Data reported for organic analysis in soils samples are corrected for moisture content.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

Reproduction of Report: Report shall not be reproduced, except in full, without the approval of Testmark Laboratories Ltd.

ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	515655
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation:	PWQO
		Project #:	Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	Adam Gauthier
Date Order Received:	10/12/2023	Analysis Started:	10/12/2023
Arrival Temperature:	8 C	Analysis Completed:	11/24/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
SUTHLK - Top	1939878	Water	Grab		10/3/2023	1:50 PM
SUTHLK - Bottom	1939879	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	10/3/2023	2:05 PM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water FF (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water -> Field-Filtered	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test

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Canada Nickel Company Inc.

Work Order Number: 515655

Method	Lab	Description	Reference
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 515655

WORK ORDER RESULTS

Sample Description	SUTHLK - Top		SUTHLK - Bottom			
Sample Date	10/3/2023 1:50 PM		10/3/2023 2:05 PM			
Lab ID	1939878		1939879			
Anions	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	0.5	0.2	0.6	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	2.9	0.5	3.6	0.5	mg/L	~

Sample Description	SUTHLK - Top		SUTHLK - Bottom			
Sample Date	10/3/2023 1:50 PM		10/3/2023 2:05 PM			
Lab ID	1939878		1939879			
Field Parameters	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	5.38	N/A	5.38	N/A	pH	~
Field Temp	18.61	N/A	18.61	N/A	°C	~

Sample Description	SUTHLK - Top		SUTHLK - Bottom			
Sample Date	10/3/2023 1:50 PM		10/3/2023 2:05 PM			
Lab ID	1939878		1939879			
General Chemistry	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	9	5	13	5	mg/L as CaCO3	~
Ammonia (as N)	<0.005	0.005	<0.005	0.005	mg/L	~
Conductivity	231	1	299	1	µS/cm	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 515655

Sample Description	SUTHLK - Top		SUTHLK - Bottom			
Sample Date	10/3/2023 1:50 PM		10/3/2023 2:05 PM			
Lab ID	1939878		1939879			
General Chemistry	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Organic Carbon	6.5	0.4	5.9	0.4	mg/L	~
Free Cyanide	0.005	0.001	0.003	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	128	2	161	2	mg/L as CaCO3	~
pH	7.89	N/A	7.5	N/A	pH	~
Strong Acid Dissociable Cyanide	0.003 [0.003]	0.002	0.003	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	109.0	0.1	138.0	0.1	mg/L	~
Total Phosphorus (as P)	0.012	0.002	0.029	0.002	mg/L	~
Weak Acid Dissociable Cyanide	<0.001 [<0.001]	0.001	0.003	0.001	mg/L	~

Sample Description	SUTHLK - Top		SUTHLK - Bottom			
Sample Date	10/3/2023 1:50 PM		10/3/2023 2:05 PM			
Lab ID	1939878		1939879			
Mercury (Trace)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	0.30	0.01	565.00	0.01	ng/L	200

Sample Description	SUTHLK - Top		SUTHLK - Bottom			
Sample Date	10/3/2023 1:50 PM		10/3/2023 2:05 PM			
Lab ID	1939878		1939879			
Mercury by CV	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	0.12	0.02	ug/L	0.2

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Work Order Number: 515655

Sample Description	SUTHLK - Top		SUTHLK - Bottom			
Sample Date	10/3/2023 1:50 PM		10/3/2023 2:05 PM			
Lab ID	1939878		1939879			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	<0.001 [0.001]	0.001	<0.001	0.001	mg/L	~

Sample Description	SUTHLK - Top		SUTHLK - Bottom			
Sample Date	10/3/2023 1:50 PM		10/3/2023 2:05 PM			
Lab ID	1939878		1939879			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Antimony	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Arsenic	0.0001	0.0001	0.0002 [0.0002]	0.0001	mg/L	~
Dissolved Barium	0.0110	0.0001	0.0156 [0.0154]	0.0001	mg/L	~
Dissolved Beryllium	<0.00002	0.00002	<0.00002 [<0.00002]	0.00002	mg/L	~
Dissolved Bismuth	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	mg/L	~
Dissolved Boron	0.005	0.002	0.005 [0.005]	0.002	mg/L	~
Dissolved Cadmium	<0.000005	0.000005	<0.000005 [0.000005]	0.000005	mg/L	~
Dissolved Calcium	30.9	0.5	40.1 [40.2]	0.5	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Chromium	0.0020	0.0001	0.0010 [0.0010]	0.0001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 515655

Sample Description	SUTHLK - Top		SUTHLK - Bottom			
Sample Date	10/3/2023 1:50 PM		10/3/2023 2:05 PM			
Lab ID	1939878		1939879			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Cobalt	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Copper	0.0011	0.0002	0.0009 [0.0009]	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Iron	0.18	0.01	0.23 [0.22]	0.01	mg/L	~
Dissolved Lanthanum	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Lead	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	mg/L	~
Dissolved Lithium	0.002	0.001	0.002 [0.002]	0.001	mg/L	~
Dissolved Magnesium	8.260	0.004	9.630 [9.510]	0.004	mg/L	~
Dissolved Manganese	0.0012	0.0001	0.306 [0.314]	0.001	mg/L	~
Dissolved Molybdenum	<0.00005	0.00005	0.00015 [0.00016]	0.00005	mg/L	~
Dissolved Nickel	<0.0005	0.0005	<0.0005 [<0.0005]	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05 [<0.05]	0.05	mg/L	~
Dissolved Potassium	0.86	0.05	1.03 [1.04]	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Rubidium	0.0015	0.0002	0.0017 [0.0017]	0.0002	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 515655

Sample Description	SUTHLK - Top		SUTHLK - Bottom			
Sample Date	10/3/2023 1:50 PM		10/3/2023 2:05 PM			
Lab ID	1939878		1939879			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Scandium	0.001	0.001	0.003 [0.003]	0.001	mg/L	~
Dissolved Selenium	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	mg/L	~
Dissolved Silicon	2.04	0.05	4.58 [4.50]	0.05	mg/L	~
Dissolved Silver	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Sodium	1.36	0.05	1.53 [1.53]	0.05	mg/L	~
Dissolved Strontium	0.0366	0.0002	0.0413 [0.0413]	0.0002	mg/L	~
Dissolved Sulfur	1.6	0.5	1.5 [1.4]	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	mg/L	~
Dissolved Thallium	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Tin	0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Titanium	0.0006	0.0003	0.0016 [0.0015]	0.0003	mg/L	~
Dissolved Tungsten	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Uranium	0.00007	0.00001	0.00008 [0.00008]	0.00001	mg/L	~
Dissolved Vanadium	<0.0005	0.0005	<0.0005 [<0.0005]	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Zinc	0.002	0.001	0.003 [0.003]	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 515655

Sample Description	SUTHLK - Top		SUTHLK - Bottom			
Sample Date	10/3/2023 1:50 PM		10/3/2023 2:05 PM			
Lab ID	1939878		1939879			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Zirconium	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	mg/L	~

Sample Description	SUTHLK - Top		SUTHLK - Bottom			
Sample Date	10/3/2023 1:50 PM		10/3/2023 2:05 PM			
Lab ID	1939878		1939879			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.008	0.001	0.006 [0.006]	0.001	mg/L	0.075
Total Antimony	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	0.02
Total Arsenic	0.0002	0.0001	0.0002 [0.0002]	0.0001	mg/L	0.005
Total Barium	0.0110	0.0001	0.0158 [0.0156]	0.0001	mg/L	~
Total Beryllium	<0.00002	0.00002	<0.00002 [<0.00002]	0.00002	mg/L	0.011
Total Bismuth	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	mg/L	~
Total Boron	0.005	0.002	0.005 [0.005]	0.002	mg/L	0.2
Total Cadmium	<0.000005	0.000005	<0.000005 [0.000010]	0.000005	mg/L	0.0001
Total Calcium	30.3	0.5	40.4 [40.3]	0.5	mg/L	~
Total Cerium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Cesium	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 515655

Sample Description	SUTHLK - Top		SUTHLK - Bottom			
Sample Date	10/3/2023 1:50 PM		10/3/2023 2:05 PM			
Lab ID	1939878		1939879			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Chromium	0.0020	0.0001	0.0005 [0.0005]	0.0001	mg/L	~
Total Cobalt	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	0.0009
Total Copper	0.0007	0.0002	0.0002 [<0.0002]	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Iron	0.17	0.01	0.23 [0.22]	0.01	mg/L	0.3
Total Lanthanum	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Lead	0.00011	0.00005	0.00006 [0.00036]	0.00005	mg/L	0.001
Total Lithium	0.002	0.001	0.002 [0.002]	0.001	mg/L	~
Total Magnesium	8.210	0.004	9.640 [9.530]	0.004	mg/L	~
Total Manganese	0.0077	0.0001	0.342 [0.339]	0.001	mg/L	~
Total Molybdenum	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	mg/L	0.04
Total Nickel	<0.0005	0.0005	<0.0005 [<0.0005]	0.0005	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Potassium	0.83	0.05	1.03 [1.02]	0.05	mg/L	~
Total Rhodium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Rubidium	0.0015	0.0002	0.0017 [0.0017]	0.0002	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 515655

Sample Description	SUTHLK - Top		SUTHLK - Bottom			
Sample Date	10/3/2023 1:50 PM		10/3/2023 2:05 PM			
Lab ID	1939878		1939879			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Scandium	0.001	0.001	0.003 [0.003]	0.001	mg/L	~
Total Selenium	<0.00005	0.00005	0.00012 [0.00010]	0.00005	mg/L	0.1
Total Silicon	1.86	0.05	4.30 [4.30]	0.05	mg/L	~
Total Silver	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	0.0001
Total Sodium	1.34	0.05	1.53 [1.56]	0.05	mg/L	~
Total Strontium	0.0355	0.0002	0.0411 [0.0411]	0.0002	mg/L	~
Total Sulphur	1.4	0.5	2.0 [2.0]	0.5	mg/L	~
Total Tellurium	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	mg/L	~
Total Thallium	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	0.0003
Total Thorium	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Total Tin	<0.0001	0.0001	0.0001 [0.0001]	0.0001	mg/L	~
Total Titanium	0.0009	0.0003	0.0018 [0.0017]	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	0.03
Total Uranium	0.00007	0.00001	0.00007 [0.00007]	0.00001	mg/L	0.005
Total Vanadium	<0.0005	0.0005	<0.0005 [<0.0005]	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Zinc	0.001	0.001	0.003 [0.002]	0.001	mg/L	0.02

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 515655

Sample Description	SUTHLK - Top		SUTHLK - Bottom			
Sample Date	10/3/2023 1:50 PM		10/3/2023 2:05 PM			
Lab ID	1939878		1939879			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Zirconium	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	mg/L	0.004

Sample Description	SUTHLK - Top		SUTHLK - Bottom			
Sample Date	10/3/2023 1:50 PM		10/3/2023 2:05 PM			
Lab ID	1939878		1939879			
MethylMercury	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.03	0.02	0.35	0.02	ng/L	~

Sample Description	SUTHLK - Top		SUTHLK - Bottom			
Sample Date	10/3/2023 1:50 PM		10/3/2023 2:05 PM			
Lab ID	1939878		1939879			
Solids	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	110	10	135	10	mg/L	~
Total Suspended Solids	<0.67	0.67	3.70	0.67	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 515655

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Organic Soil Analysis: Data reported for organic analysis in soils samples are corrected for moisture content.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

Reproduction of Report: Report shall not be reproduced, except in full, without the approval of Testmark Laboratories Ltd.

ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	516043
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	David Duciaume
Date Order Received:	10/16/2023	Analysis Started:	10/17/2023
Arrival Temperature:	15 C	Analysis Completed:	11/24/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
NDR.S-04b	1941582	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	10/16/2023	10:15 AM
MATR-REF	1941583	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	10/16/2023	9:20 AM
MATR-01	1941584	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	10/16/2023	12:30 PM
JCRK-01	1941585	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	10/16/2023	9:05 AM
MATR-02	1941586	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	10/16/2023	12:45 PM
UWC-01	1941587	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	10/16/2023	11:40 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Garson	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A

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Canada Nickel Company Inc.

Work Order Number: 516043

Method	Lab	Description	Reference
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water FF (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water -> Field-Filtered	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516043

WORK ORDER RESULTS

Sample Description	NDR.S - 04b		MATR - REF		MATR - 01		JCRK - 01			
Sample Date	10/16/2023 10:15 AM		10/16/2023 9:20 AM		10/16/2023 12:30 PM		10/16/2023 9:05 AM			
Lab ID	1941582		1941583		1941584		1941585			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	9.2	0.2	2.7	0.2	2.8	0.2	3.1	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	<0.5	0.5	4.0	0.5	3.8	0.5	4.3	0.5	mg/L	~

Sample Description	MATR - 02		UWC - 01			
Sample Date	10/16/2023 12:45 PM		10/16/2023 11:40 AM			
Lab ID	1941586		1941587			
Anions	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	2.8	0.2	0.4 [0.4]	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05 [<0.05]	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	3.8	0.5	<0.5 [<0.5]	0.5	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516043

Sample Description	NDR.S - 04b		MATR - REF		MATR - 01		JCRK - 01			
Sample Date	10/16/2023 10:15 AM		10/16/2023 9:20 AM		10/16/2023 12:30 PM		10/16/2023 9:05 AM			
Lab ID	1941582		1941583		1941584		1941585			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	4.82	N/A	5	N/A	5.21	N/A	4.66	N/A	pH	~
Field Temp	7.73	N/A	8.76	N/A	9.11	N/A	8.52	N/A	°C	~

Sample Description	MATR - 02		UWC - 01			
Sample Date	10/16/2023 12:45 PM		10/16/2023 11:40 AM			
Lab ID	1941586		1941587			
Field Parameters	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	5.4	N/A	3.79	N/A	pH	~
Field Temp	9.08	N/A	8.16	N/A	°C	~

Sample Description	NDR.S - 04b		MATR - REF		MATR - 01		JCRK - 01			
Sample Date	10/16/2023 10:15 AM		10/16/2023 9:20 AM		10/16/2023 12:30 PM		10/16/2023 9:05 AM			
Lab ID	1941582		1941583		1941584		1941585			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	9	5	7	5	7	5	12	5	mg/L as CaCO3	~
Ammonia (as N)	0.059	0.005	0.024	0.005	0.025	0.005	0.037	0.005	mg/L	~
Conductivity	102	1	112	1	96	1	92	1	µS/cm	~
Dissolved Organic Carbon	44.6 [39.6]	0.4	21.2	0.4	21.4	0.4	30.5	0.4	mg/L	~
Free Cyanide	<0.001	0.001			<0.001 [<0.001]	0.001	<0.001	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	36	2	52	2	49	2	44	2	mg/L as CaCO3	~
pH	7.43	N/A	7.82	N/A	7.25	N/A	7.08	N/A	pH	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516043

Sample Description	NDR.S - 04b		MATR - REF		MATR - 01		JCRK - 01			
Sample Date	10/16/2023 10:15 AM		10/16/2023 9:20 AM		10/16/2023 12:30 PM		10/16/2023 9:05 AM			
Lab ID	1941582		1941583		1941584		1941585			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Strong Acid Dissociable Cyanide	0.004	0.002			0.003	0.002	<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	43.5	0.1	47.8	0.1	47.7	0.1	46.6	0.1	mg/L	~
Total Phosphorus (as P)	0.021	0.002	0.018	0.002	0.018	0.002	0.019	0.002	mg/L	~
Weak Acid Dissociable Cyanide	<0.001	0.001			<0.001	0.001	<0.001	0.001	mg/L	~

Sample Description	MATR - 02		UWC - 01			
Sample Date	10/16/2023 12:45 PM		10/16/2023 11:40 AM			
Lab ID	1941586		1941587			
General Chemistry	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	7	5	20	5	mg/L as CaCO3	~
Ammonia (as N)	0.025	0.005	0.048	0.005	mg/L	~
Conductivity	99	1	28	1	µS/cm	~
Dissolved Organic Carbon	21.8	0.4	41.4	0.4	mg/L	~
Free Cyanide			0.002	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	46	2	10	2	mg/L as CaCO3	~
pH	7.32	N/A	5.67	N/A	pH	~
Strong Acid Dissociable Cyanide			0.003	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	47.5	0.1	16.7	0.1	mg/L	~
Total Phosphorus (as P)	0.018	0.002	0.009	0.002	mg/L	~
Weak Acid Dissociable Cyanide			0.001	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516043

Sample Description	NDR.S - 04b		MATR - 01		JCRK - 01		UWC - 01			
Sample Date	10/16/2023 10:15 AM		10/16/2023 12:30 PM		10/16/2023 9:05 AM		10/16/2023 11:40 AM			
Lab ID	1941582		1941584		1941585		1941587			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	3.36	0.01	3.11	0.01	4.70	0.01	1.41	0.01	ng/L	200

Sample Description	NDR.S - 04b		MATR - 01		JCRK - 01		UWC - 01			
Sample Date	10/16/2023 10:15 AM		10/16/2023 12:30 PM		10/16/2023 9:05 AM		10/16/2023 11:40 AM			
Lab ID	1941582		1941584		1941585		1941587			
Mercury by CV	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	ug/L	0.2

Sample Description	NDR.S - 04b		MATR - REF		MATR - 01		JCRK - 01			
Sample Date	10/16/2023 10:15 AM		10/16/2023 9:20 AM		10/16/2023 12:30 PM		10/16/2023 9:05 AM			
Lab ID	1941582		1941583		1941584		1941585			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.164	0.001	0.096	0.001	0.069	0.001	0.121	0.001	mg/L	~

Sample Description	MATR - 02		UWC - 01			
Sample Date	10/16/2023 12:45 PM		10/16/2023 11:40 AM			
Lab ID	1941586		1941587			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.069	0.001	0.079 [0.078]	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516043

Sample Description	NDR.S - 04b		MATR - REF		MATR - 01		JCRK - 01			
Sample Date	10/16/2023 10:15 AM		10/16/2023 9:20 AM		10/16/2023 12:30 PM		10/16/2023 9:05 AM			
Lab ID	1941582		1941583		1941584		1941585			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Antimony	0.0001	0.0001	0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Arsenic	0.0008	0.0001	0.0005	0.0001	0.0005	0.0001	0.0006	0.0001	mg/L	~
Dissolved Barium	0.0055	0.0001	0.0057	0.0001	0.0056	0.0001	0.0057	0.0001	mg/L	~
Dissolved Beryllium	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	mg/L	~
Dissolved Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Boron	0.003	0.002	0.009	0.002	0.008	0.002	0.007	0.002	mg/L	~
Dissolved Cadmium	0.000020	0.000005	0.000030	0.000005	0.000010	0.000005	0.000040	0.000005	mg/L	~
Dissolved Calcium	12.90	0.05	15.10	0.05	14.50	0.05	14.30	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0012	0.0001	0.0010	0.0001	0.0010	0.0001	0.0011	0.0001	mg/L	~
Dissolved Cobalt	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Copper	0.0019	0.0002	0.0016	0.0002	0.0012	0.0002	0.0028	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.56	0.01	0.33	0.01	0.32	0.01	0.43	0.01	mg/L	~
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	0.00012	0.00005	0.00006	0.00005	0.00006	0.00005	0.00010	0.00005	mg/L	~
Dissolved Lithium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Magnesium	3.550	0.004	3.740	0.004	3.640	0.004	3.430	0.004	mg/L	~
Dissolved Manganese	0.0228	0.0001	0.0125	0.0001	0.0126	0.0001	0.0178	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00018	0.00005	0.00010	0.00005	0.00008	0.00005	0.00007	0.00005	mg/L	~
Dissolved Nickel	0.0010	0.0005	0.0007	0.0005	0.0007	0.0005	0.0009	0.0005	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516043

Sample Description	NDR.S - 04b		MATR - REF		MATR - 01		JCRK - 01			
Sample Date	10/16/2023 10:15 AM		10/16/2023 9:20 AM		10/16/2023 12:30 PM		10/16/2023 9:05 AM			
Lab ID	1941582		1941583		1941584		1941585			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	0.53	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.25	0.05	0.46	0.05	0.44	0.05	0.41	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	0.0008	0.0002	0.0011	0.0002	0.0010	0.0002	0.0010	0.0002	mg/L	~
Dissolved Scandium	0.002	0.001	0.002	0.001	0.002	0.001	0.002	0.001	mg/L	~
Dissolved Selenium	0.00018	0.00005	0.00008	0.00005	0.00008	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Silicon	2.03	0.05	2.45	0.05	2.35	0.05	2.18	0.05	mg/L	~
Dissolved Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Sodium	4.97	0.05	2.25	0.05	2.19	0.05	2.51	0.05	mg/L	~
Dissolved Strontium	0.0200	0.0002	0.0223	0.0002	0.0214	0.0002	0.0226	0.0002	mg/L	~
Dissolved Sulfur	0.7	0.5	1.9	0.5	1.6	0.5	1.9	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Thallium	0.00003	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Tin	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	mg/L	~
Dissolved Titanium	0.0034	0.0003	0.0042	0.0003	0.0024	0.0003	0.0031	0.0003	mg/L	~
Dissolved Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Uranium	0.00003	0.00001	0.00005	0.00001	0.00005	0.00001	0.00005	0.00001	mg/L	~
Dissolved Vanadium	0.0006	0.0005	0.0006	0.0005	0.0006	0.0005	0.0006	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.006	0.001	0.003	0.001	0.003	0.001	0.007	0.001	mg/L	~
Dissolved Zirconium	0.0008	0.0002	0.0007	0.0002	0.0006	0.0002	0.0008	0.0002	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516043

Sample Description	MATR - 02		UWC - 01			
Sample Date	10/16/2023 12:45 PM		10/16/2023 11:40 AM			
Lab ID	1941586		1941587			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Antimony	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Arsenic	0.0005	0.0001	0.0005 [0.0005]	0.0001	mg/L	~
Dissolved Barium	0.0056	0.0001	0.0033 [0.0033]	0.0001	mg/L	~
Dissolved Beryllium	<0.00002	0.00002	<0.00002 [<0.00002]	0.00002	mg/L	~
Dissolved Bismuth	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	mg/L	~
Dissolved Boron	0.009	0.002	0.003 [0.003]	0.002	mg/L	~
Dissolved Cadmium	0.000020	0.000005	0.000010 [0.000010]	0.000005	mg/L	~
Dissolved Calcium	14.70	0.05	4.59 [4.52]	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Chromium	0.0010	0.0001	0.0008 [0.0007]	0.0001	mg/L	~
Dissolved Cobalt	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Copper	0.0012	0.0002	0.0018 [0.0018]	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Iron	0.33	0.01	0.35 [0.36]	0.01	mg/L	~
Dissolved Lanthanum	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516043

Sample Description	MATR - 02		UWC - 01			
Sample Date	10/16/2023 12:45 PM		10/16/2023 11:40 AM			
Lab ID	1941586		1941587			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Lead	0.00005	0.00005	0.00024 [0.00024]	0.00005	mg/L	~
Dissolved Lithium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Magnesium	3.630	0.004	1.520 [1.510]	0.004	mg/L	~
Dissolved Manganese	0.0124	0.0001	0.0352 [0.0354]	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00007	0.00005	<0.00005 [<0.00005]	0.00005	mg/L	~
Dissolved Nickel	0.0007	0.0005	<0.0005 [<0.0005]	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05 [<0.05]	0.05	mg/L	~
Dissolved Potassium	0.45	0.05	0.11 [0.11]	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Rubidium	0.0011	0.0002	0.0004 [0.0004]	0.0002	mg/L	~
Dissolved Scandium	0.002	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Selenium	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	mg/L	~
Dissolved Silicon	2.37	0.05	0.80 [0.81]	0.05	mg/L	~
Dissolved Silver	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Sodium	2.25	0.05	0.37 [0.37]	0.05	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516043

Sample Description	MATR - 02		UWC - 01			
Sample Date	10/16/2023 12:45 PM		10/16/2023 11:40 AM			
Lab ID	1941586		1941587			
Metals (Dissolved)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Strontium	0.0220	0.0002	0.0092 [0.0093]	0.0002	mg/L	~
Dissolved Sulfur	1.9	0.5	<0.5 [<0.5]	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	mg/L	~
Dissolved Thallium	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Tin	0.0002	0.0001	0.0002 [0.0002]	0.0001	mg/L	~
Dissolved Titanium	0.0021	0.0003	0.0010 [0.0010]	0.0003	mg/L	~
Dissolved Tungsten	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Uranium	0.00005	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Vanadium	0.0005	0.0005	<0.0005 [<0.0005]	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Zinc	0.004	0.001	0.006 [0.006]	0.001	mg/L	~
Dissolved Zirconium	0.0006	0.0002	<0.0002 [<0.0002]	0.0002	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516043

Sample Description	NDR.S - 04b		MATR - REF		MATR - 01		JCRK - 01			
Sample Date	10/16/2023 10:15 AM		10/16/2023 9:20 AM		10/16/2023 12:30 PM		10/16/2023 9:05 AM			
Lab ID	1941582		1941583		1941584		1941585			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.212	0.001	0.279	0.001	0.172	0.001	0.217	0.001	mg/L	0.075
Total Antimony	0.0002	0.0001	0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.02
Total Arsenic	0.0007	0.0001	0.0005	0.0001	0.0005	0.0001	0.0006	0.0001	mg/L	0.005
Total Barium	0.0067	0.0001	0.0070	0.0001	0.0064	0.0001	0.0066	0.0001	mg/L	~
Total Beryllium	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	mg/L	0.011
Total Bismuth	0.00008	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Total Boron	0.003	0.002	0.008	0.002	0.008	0.002	0.007	0.002	mg/L	0.2
Total Cadmium	0.000030	0.000005	0.000040	0.000005	0.000020	0.000005	0.000050	0.000005	mg/L	0.0001
Total Calcium	12.90	0.05	14.60	0.05	14.50	0.05	14.30	0.05	mg/L	~
Total Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Cesium	<0.00001	0.00001	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	mg/L	~
Total Chromium	0.0011	0.0001	0.0015	0.0001	0.0009	0.0001	0.0011	0.0001	mg/L	~
Total Cobalt	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0009
Total Copper	0.0016	0.0002	0.0024	0.0002	0.0013	0.0002	0.0021	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.64	0.01	0.56	0.01	0.46	0.01	0.57	0.01	mg/L	0.3
Total Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00058	0.00005	0.00022	0.00005	0.00014	0.00005	0.00025	0.00005	mg/L	0.001
Total Lithium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Magnesium	3.520	0.004	3.690	0.004	3.640	0.004	3.490	0.004	mg/L	~
Total Manganese	0.0284	0.0001	0.0219	0.0001	0.0226	0.0001	0.0266	0.0001	mg/L	~
Total Mercury			<0.0001	0.0001					mg/L	0.0002
Total Molybdenum	0.00019	0.00005	0.00012	0.00005	0.00008	0.00005	0.00007	0.00005	mg/L	0.04

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516043

Sample Description	NDR.S - 04b		MATR - REF		MATR - 01		JCRK - 01			
Sample Date	10/16/2023 10:15 AM		10/16/2023 9:20 AM		10/16/2023 12:30 PM		10/16/2023 9:05 AM			
Lab ID	1941582		1941583		1941584		1941585			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Nickel	0.0009	0.0005	0.0009	0.0005	0.0007	0.0005	0.0009	0.0005	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.26	0.05	0.49	0.05	0.47	0.05	0.44	0.05	mg/L	~
Total Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	0.0008	0.0002	0.0014	0.0002	0.0012	0.0002	0.0011	0.0002	mg/L	~
Total Scandium	0.002	0.001	0.002	0.001	0.002	0.001	0.002	0.001	mg/L	~
Total Selenium	0.00014	0.00005	0.00014	0.00005	0.00022	0.00005	0.00017	0.00005	mg/L	0.1
Total Silicon	2.15	0.05	2.77	0.05	2.56	0.05	2.35	0.05	mg/L	~
Total Silver	0.00017	0.00001	0.00010	0.00001	0.00003	0.00001	0.00003	0.00001	mg/L	0.0001
Total Sodium	4.92	0.05	2.20	0.05	2.18	0.05	2.49	0.05	mg/L	~
Total Strontium	0.0201	0.0002	0.0223	0.0002	0.0217	0.0002	0.0226	0.0002	mg/L	~
Total Sulphur	<0.5	0.5	1.5	0.5	1.7	0.5	2.0	0.5	mg/L	~
Total Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Total Thallium	0.00002	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0003
Total Thorium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Total Tin	0.0002	0.0001	0.0002	0.0001	0.0002	0.0001	0.0002	0.0001	mg/L	~
Total Titanium	0.0050	0.0003	0.0093	0.0003	0.0054	0.0003	0.0061	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00003	0.00001	0.00006	0.00001	0.00005	0.00001	0.00005	0.00001	mg/L	0.005
Total Vanadium	0.0006	0.0005	0.0008	0.0005	0.0006	0.0005	0.0007	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.014	0.001	0.006	0.001	0.005	0.001	0.009	0.001	mg/L	0.02
Total Zirconium	0.0009	0.0002	0.0009	0.0002	0.0008	0.0002	0.0010	0.0002	mg/L	0.004

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516043

Sample Description	MATR - 02		UWC - 01			
Sample Date	10/16/2023 12:45 PM		10/16/2023 11:40 AM			
Lab ID	1941586		1941587			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.144	0.001	0.080 [0.077]	0.001	mg/L	0.075
Total Antimony	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	0.02
Total Arsenic	0.0005	0.0001	0.0005 [0.0005]	0.0001	mg/L	0.005
Total Barium	0.0063	0.0001	0.0036 [0.0036]	0.0001	mg/L	~
Total Beryllium	<0.00002	0.00002	<0.00002 [<0.00002]	0.00002	mg/L	0.011
Total Bismuth	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	mg/L	~
Total Boron	0.008	0.002	0.003 [0.002]	0.002	mg/L	0.2
Total Cadmium	0.000020	0.000005	0.000010 [0.000010]	0.000005	mg/L	0.0001
Total Calcium	15.10	0.05	4.78 [4.79]	0.05	mg/L	~
Total Cerium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Cesium	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	~
Total Chromium	0.0008	0.0001	0.0008 [0.0007]	0.0001	mg/L	~
Total Cobalt	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	0.0009
Total Copper	0.0013	0.0002	0.0006 [0.0004]	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Iron	0.44	0.01	0.38 [0.39]	0.01	mg/L	0.3

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516043

Sample Description	MATR - 02		UWC - 01			
Sample Date	10/16/2023 12:45 PM		10/16/2023 11:40 AM			
Lab ID	1941586		1941587			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Lanthanum	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Lead	0.00015	0.00005	0.00032 [0.00029]	0.00005	mg/L	0.001
Total Lithium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Magnesium	3.630	0.004	1.570 [1.520]	0.004	mg/L	~
Total Manganese	0.0232	0.0001	0.0366 [0.0361]	0.0001	mg/L	~
Total Mercury	<0.0001	0.0001			mg/L	0.0002
Total Molybdenum	0.00006	0.00005	<0.00005 [<0.00005]	0.00005	mg/L	0.04
Total Nickel	0.0006	0.0005	<0.0005 [<0.0005]	0.0005	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Potassium	0.46	0.05	0.13 [0.11]	0.05	mg/L	~
Total Rhodium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Rubidium	0.0011	0.0002	0.0004 [0.0004]	0.0002	mg/L	~
Total Scandium	0.002	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Selenium	0.00015	0.00005	0.00012 [0.00010]	0.00005	mg/L	0.1
Total Silicon	2.47	0.05	0.95 [0.92]	0.05	mg/L	~
Total Silver	0.00002	0.00001	0.00002 [0.00001]	0.00001	mg/L	0.0001
Total Sodium	2.31	0.05	0.39 [0.35]	0.05	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516043

Sample Description	MATR - 02		UWC - 01			
Sample Date	10/16/2023 12:45 PM		10/16/2023 11:40 AM			
Lab ID	1941586		1941587			
Metals (Total)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Strontium	0.0232	0.0002	0.0095 [0.0093]	0.0002	mg/L	~
Total Sulphur	1.6	0.5	<0.5 [<0.5]	0.5	mg/L	~
Total Tellurium	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	mg/L	~
Total Thallium	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	0.0003
Total Thorium	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Total Tin	0.0002	0.0001	0.0002 [0.0002]	0.0001	mg/L	~
Total Titanium	0.0043	0.0003	0.0014 [0.0013]	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	0.03
Total Uranium	0.00005	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	0.005
Total Vanadium	0.0006	0.0005	<0.0005 [<0.0005]	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Zinc	0.005	0.001	0.008 [0.007]	0.001	mg/L	0.02
Total Zirconium	0.0008	0.0002	<0.0002 [<0.0002]	0.0002	mg/L	0.004

CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516043

Sample Description	NDR.S - 04b		MATR - 01		JCRK - 01		UWC - 01			
Sample Date	10/16/2023 10:15 AM		10/16/2023 12:30 PM		10/16/2023 9:05 AM		10/16/2023 11:40 AM			
Lab ID	1941582		1941584		1941585		1941587			
MethylMercury	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.12	0.02	0.12	0.02	0.11	0.02	0.07	0.02	ng/L	~

Sample Description	NDR.S - 04b		MATR - REF		MATR - 01		JCRK - 01			
Sample Date	10/16/2023 10:15 AM		10/16/2023 9:20 AM		10/16/2023 12:30 PM		10/16/2023 9:05 AM			
Lab ID	1941582		1941583		1941584		1941585			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	105	10	80	10	20	10	85	10	mg/L	~
Total Suspended Solids	4.30	0.67	4.00	0.67	3.30	0.67	5.00	0.67	mg/L	~

Sample Description	MATR - 02		UWC - 01			
Sample Date	10/16/2023 12:45 PM		10/16/2023 11:40 AM			
Lab ID	1941586		1941587			
Solids	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	10	10	90	10	mg/L	~
Total Suspended Solids	4.00	0.67	2.00	0.67	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516043

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Organic Soil Analysis: Data reported for organic analysis in soils samples are corrected for moisture content.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

Reproduction of Report: Report shall not be reproduced, except in full, without the approval of Testmark Laboratories Ltd.

ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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Client:	Adam Gauthier	Work Order Number:	516339
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	DD/ JP
Date Order Received:	10/18/2023	Analysis Started:	10/19/2023
Arrival Temperature:	11 C	Analysis Completed:	11/27/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
NDR-S-02	1942678	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	10/18/2023	8:45 AM
JCRK-03	1942679	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	10/18/2023	2:00 PM
PC-01	1942680	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	10/18/2023	10:40 AM
WBR-S-Ref	1942681	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	10/18/2023	11:00 AM
WBR-S-04	1942682	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	10/17/2023	3:00 PM
WBR-S-06	1942683	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	10/18/2023	12:10 PM
WBR-P-03	1942684	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	10/17/2023	3:15 PM
WBR-P-04	1942685	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	10/17/2023	3:30 PM
SWDup	1942686	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	10/17/2023	

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179

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Canada Nickel Company Inc.

Work Order Number: 516339

Method	Lab	Description	Reference
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water FF (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water -> Field-Filtered	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516339

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

WORK ORDER RESULTS

Sample Description	NDR - S - 02		JCRK - 03		PC - 01		WBR - S - Ref			
Sample Date	10/18/2023 8:45 AM		10/18/2023 2:00 PM		10/18/2023 10:40 AM		10/18/2023 11:00 AM			
Lab ID	1942678		1942679		1942680		1942681			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	4.5	0.2	2.9	0.2	0.4	0.2	0.5	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	0.09	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	<0.1	0.1	0.2	0.1	mg/L	~
Nitrite (as N)	0.02	0.01	<0.01	0.01	<0.01	0.01	0.01	0.01	mg/L	~
Sulphate	1.4	0.5	0.6	0.5	1.2	0.5	1.0	0.5	mg/L	~

Sample Description	WBR - S - 04		WBR - S - 06		WBR - P - 03		WBR - P - 04			
Sample Date	10/17/2023 3:00 PM		10/18/2023 12:10 PM		10/17/2023 3:15 PM		10/17/2023 3:30 PM			
Lab ID	1942682		1942683		1942684		1942685			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	0.4	0.2	0.4	0.2	0.3	0.2	0.5	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	0.2	0.1	0.3	0.1	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	0.01	0.01	<0.01	0.01	0.01	0.01	mg/L	~
Sulphate	0.7	0.5	0.8	0.5	<0.5	0.5	<0.5	0.5	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516339

Sample Description	SWDup
Sample Date	10/17/2023 12:00 AM
Lab ID	1942686

Anions	Result	MDL	Units	Criteria: PWQO
Chloride	0.3 [0.3]	0.2	mg/L	~
Fluoride	<0.05 [<0.05]	0.05	mg/L	~
Nitrate (as N) (Calc.)	0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	mg/L	~
Sulphate	0.5 [0.6]	0.5	mg/L	~

Sample Description	NDR - S - 02		JCRK - 03		PC - 01		WBR - S - Ref			
Sample Date	10/18/2023 8:45 AM		10/18/2023 2:00 PM		10/18/2023 10:40 AM		10/18/2023 11:00 AM			
Lab ID	1942678		1942679		1942680		1942681			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	4.77	N/A	4.73	N/A	5.12	N/A	5.07	N/A	pH	~
Field Temp	6.76	N/A	6.48	N/A	6.27	N/A	6.01	N/A	°C	~

Sample Description	WBR - S - 04		WBR - S - 06		WBR - P - 03		WBR - P - 04			
Sample Date	10/17/2023 3:00 PM		10/18/2023 12:10 PM		10/17/2023 3:15 PM		10/17/2023 3:30 PM			
Lab ID	1942682		1942683		1942684		1942685			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	6.33	N/A	4.74	N/A	4.71	N/A	3.76	N/A	pH	~
Field Temp	7.46	N/A	6.5	N/A	7.32	N/A	8.27	N/A	°C	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516339

Sample Description	NDR - S - 02		JCRK - 03		PC - 01		WBR - S - Ref			
Sample Date	10/18/2023 8:45 AM		10/18/2023 2:00 PM		10/18/2023 10:40 AM		10/18/2023 11:00 AM			
Lab ID	1942678		1942679		1942680		1942681			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	9	5	11	5	10	5	11	5	mg/L as CaCO3	~
Ammonia (as N)	0.07	0.05	0.07	0.05	0.15	0.05	0.11	0.05	mg/L	~
Conductivity	89	1	61	1	99	1	53	1	µS/cm	~
Dissolved Organic Carbon	44.5	0.8	46.1	0.8	42.8	0.8	48.4	0.8	mg/L	~
Free Cyanide			0.003	0.001	0.004	0.001	0.003	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	36	2	24	2	54	2	24	2	mg/L as CaCO3	~
pH	6.83	N/A	6.77	N/A	7.31	N/A	6.19	N/A	pH	~
Strong Acid Dissociable Cyanide			<0.002 [<0.002]	0.002	<0.002	0.002	<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	48.2	0.1	34.7	0.1	58.0	0.1	33.9	0.1	mg/L	~
Total Phosphorus (as P)	0.022	0.002	0.019 [0.019]	0.002	0.019	0.002	0.020	0.002	mg/L	~
Weak Acid Dissociable Cyanide			0.002	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

Sample Description	WBR - S - 04		WBR - S - 06		WBR - P - 03		WBR - P - 04			
Sample Date	10/17/2023 3:00 PM		10/18/2023 12:10 PM		10/17/2023 3:15 PM		10/17/2023 3:30 PM			
Lab ID	1942682		1942683		1942684		1942685			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	9	5	12	5	13	5	22	5	mg/L as CaCO3	~
Ammonia (as N)	0.10	0.05	0.07	0.05	0.09	0.05	0.09	0.05	mg/L	~
Conductivity	48	1	50	1	35	1	37	1	µS/cm	~
Dissolved Organic Carbon	50.0	0.8	49.1	0.8	50.9	0.8	55.3 [55.8]	0.8	mg/L	~
Free Cyanide	0.001 [0.002]	0.001	0.002	0.001					mg/L	0.005

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Canada Nickel Company Inc.

Work Order Number: 516339

Sample Description	WBR - S - 04		WBR - S - 06		WBR - P - 03		WBR - P - 04			
Sample Date	10/17/2023 3:00 PM		10/18/2023 12:10 PM		10/17/2023 3:15 PM		10/17/2023 3:30 PM			
Lab ID	1942682		1942683		1942684		1942685			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
M-Alkalinity (pH 4.5)	19	2	21	2	11	2	4	2	mg/L as CaCO3	~
pH	6.57	N/A	6.67	N/A	5.47	N/A	4.75	N/A	pH	~
Strong Acid Dissociable Cyanide	<0.002	0.002	<0.002	0.002					mg/L	~
Total Hardness (as CaCO3) (Calc.)	31.5	0.1	32.6	0.1	23.3	0.1	19.2	0.1	mg/L	~
Total Phosphorus (as P)	0.021	0.002	0.019	0.002	0.010	0.002	0.009	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.007 [0.007]	0.001	0.003	0.001					mg/L	~

Sample Description	SWDup			
Sample Date	10/17/2023 12:00 AM			
Lab ID	1942686			
General Chemistry	Result	MDL	Units	Criteria: PWQO
Acidity	10	5	mg/L as CaCO3	~
Ammonia (as N)	0.10	0.05	mg/L	~
Conductivity	47	1	µS/cm	~
Dissolved Organic Carbon	42.2	0.8	mg/L	~
Free Cyanide	0.004 [0.004]	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	19	2	mg/L as CaCO3	~
pH	6.5	N/A	pH	~
Strong Acid Dissociable Cyanide	<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	31.4	0.1	mg/L	~
Total Phosphorus (as P)	0.019	0.002	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 516339

Sample Description	SWDup			
Sample Date	10/17/2023 12:00 AM			
Lab ID	1942686			
General Chemistry	Result	MDL	Units	Criteria: PWQO
Weak Acid Dissociable Cyanide	0.004	0.001	mg/L	~

Sample Description	JCRK - 03		PC - 01		WBR - S - Ref		WBR - S - 04			
Sample Date	10/18/2023 2:00 PM		10/18/2023 10:40 AM		10/18/2023 11:00 AM		10/17/2023 3:00 PM			
Lab ID	1942679		1942680		1942681		1942682			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	4.42	0.01	8.13	0.01	7.35	0.01	6.84	0.01	ng/L	200

Sample Description	WBR - S - 06		SWDup			
Sample Date	10/18/2023 12:10 PM		10/17/2023 12:00 AM			
Lab ID	1942683		1942686			
Mercury (Trace)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	7.03	0.01	6.99	0.01	ng/L	200

Sample Description	JCRK - 03		PC - 01		WBR - S - Ref		WBR - S - 04			
Sample Date	10/18/2023 2:00 PM		10/18/2023 10:40 AM		10/18/2023 11:00 AM		10/17/2023 3:00 PM			
Lab ID	1942679		1942680		1942681		1942682			
Mercury by CV	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01 [<0.01]	0.01	ug/L	0.2

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516339

Sample Description	WBR - S - 06		SWDup			
Sample Date	10/18/2023 12:10 PM		10/17/2023 12:00 AM			
Lab ID	1942683		1942686			
Mercury by CV	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01	0.01	ug/L	0.2

Sample Description	NDR - S - 02		JCRK - 03		PC - 01		WBR - S - Ref			
Sample Date	10/18/2023 8:45 AM		10/18/2023 2:00 PM		10/18/2023 10:40 AM		10/18/2023 11:00 AM			
Lab ID	1942678		1942679		1942680		1942681			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.170	0.001	0.240	0.001	0.242	0.001	0.284	0.001	mg/L	~

Sample Description	WBR - S - 04		WBR - S - 06		WBR - P - 03		WBR - P - 04			
Sample Date	10/17/2023 3:00 PM		10/18/2023 12:10 PM		10/17/2023 3:15 PM		10/17/2023 3:30 PM			
Lab ID	1942682		1942683		1942684		1942685			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.282	0.001	0.295	0.001	0.181	0.001	0.167 [0.164]	0.001	mg/L	~

Sample Description	SWDup			
Sample Date	10/17/2023 12:00 AM			
Lab ID	1942686			
Metals (Dissolved - 0.2um)	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.271	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516339

Sample Description	NDR - S - 02		JCRK - 03		PC - 01		WBR - S - Ref			
Sample Date	10/18/2023 8:45 AM		10/18/2023 2:00 PM		10/18/2023 10:40 AM		10/18/2023 11:00 AM			
Lab ID	1942678		1942679		1942680		1942681			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Antimony	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Arsenic	0.0008	0.0001	0.0008	0.0001	0.0007	0.0001	0.0009	0.0001	mg/L	~
Dissolved Barium	0.0057	0.0001	0.0058	0.0001	0.0089	0.0001	0.0062	0.0001	mg/L	~
Dissolved Beryllium	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	0.00002	0.00002	mg/L	~
Dissolved Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Boron	<0.002	0.002	<0.002	0.002	0.003	0.002	0.003	0.002	mg/L	~
Dissolved Cadmium	0.000020	0.000005	0.000040	0.000005	0.000030	0.000005	0.000040	0.000005	mg/L	~
Dissolved Calcium	12.80	0.05	9.58	0.05	16.10	0.05	9.49	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0008	0.0001	0.0008	0.0001	0.0010	0.0001	0.0009	0.0001	mg/L	~
Dissolved Cobalt	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Copper	0.0012	0.0002	0.0020	0.0002	0.0026	0.0002	0.0032	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.51	0.01	0.57	0.01	0.59	0.01	0.62	0.01	mg/L	~
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	0.00015	0.00005	0.00025	0.00005	0.00019	0.00005	0.00025	0.00005	mg/L	~
Dissolved Lithium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Magnesium	3.390	0.004	2.390	0.004	4.200	0.004	2.420	0.004	mg/L	~
Dissolved Manganese	0.0232	0.0001	0.0214	0.0001	0.0162	0.0001	0.0161	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00006	0.00005	<0.00005	0.00005	0.00007	0.00005	0.00007	0.00005	mg/L	~
Dissolved Nickel	0.0009	0.0005	0.0010	0.0005	0.0007	0.0005	0.0012	0.0005	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516339

Sample Description	NDR - S - 02		JCRK - 03		PC - 01		WBR - S - Ref			
Sample Date	10/18/2023 8:45 AM		10/18/2023 2:00 PM		10/18/2023 10:40 AM		10/18/2023 11:00 AM			
Lab ID	1942678		1942679		1942680		1942681			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	1.75	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.24	0.05	0.23	0.05	0.36	0.05	0.25	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	0.0007	0.0002	0.0006	0.0002	0.0009	0.0002	0.0007	0.0002	mg/L	~
Dissolved Scandium	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	mg/L	~
Dissolved Selenium	0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Silicon	1.97	0.05	1.60	0.05	2.31	0.05	1.67	0.05	mg/L	~
Dissolved Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Sodium	3.07	0.05	2.27	0.05	1.91	0.05	1.20	0.05	mg/L	~
Dissolved Strontium	0.0212	0.0002	0.0184	0.0002	0.0348	0.0002	0.0206	0.0002	mg/L	~
Dissolved Sulfur	<0.5	0.5	<0.5	0.5	0.8	0.5	<0.5	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	0.0001	0.0001	mg/L	~
Dissolved Tin	0.0002	0.0001	0.0002	0.0001	0.0002	0.0001	0.0004	0.0001	mg/L	~
Dissolved Titanium	0.0095	0.0003	0.0049	0.0003	0.0047	0.0003	0.0055	0.0003	mg/L	~
Dissolved Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Uranium	0.00003	0.00001	0.00004	0.00001	0.00006	0.00001	0.00004	0.00001	mg/L	~
Dissolved Vanadium	0.0005	0.0005	0.0006	0.0005	0.0007	0.0005	0.0007	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.006	0.001	0.009	0.001	0.004	0.001	0.012	0.001	mg/L	~
Dissolved Zirconium	0.0011	0.0002	0.0014	0.0002	0.0011	0.0002	0.0018	0.0002	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516339

Sample Description	WBR - S - 04		WBR - S - 06		WBR - P - 03		WBR - P - 04			
Sample Date	10/17/2023 3:00 PM		10/18/2023 12:10 PM		10/17/2023 3:15 PM		10/17/2023 3:30 PM			
Lab ID	1942682		1942683		1942684		1942685			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Antimony	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Arsenic	0.0009	0.0001	0.0009	0.0001	0.0007	0.0001	0.0008 [0.0008]	0.0001	mg/L	~
Dissolved Barium	0.0057	0.0001	0.0060	0.0001	0.0043	0.0001	0.0045 [0.0045]	0.0001	mg/L	~
Dissolved Beryllium	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	<0.00002 [<0.00002]	0.00002	mg/L	~
Dissolved Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	mg/L	~
Dissolved Boron	0.002	0.002	0.002	0.002	<0.002	0.002	<0.002 [<0.002]	0.002	mg/L	~
Dissolved Cadmium	0.000040	0.000005	0.000050	0.000005	0.000020	0.000005	0.000040 [0.000040]	0.000005	mg/L	~
Dissolved Calcium	8.56	0.05	9.18	0.05	6.09	0.05	5.18 [5.16]	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Chromium	0.0008	0.0001	0.0009	0.0001	0.0007	0.0001	0.0007 [0.0007]	0.0001	mg/L	~
Dissolved Cobalt	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	0.0001 [0.0001]	0.0001	mg/L	~
Dissolved Copper	0.0016	0.0002	0.0020	0.0002	0.0006	0.0002	0.0010 [0.0010]	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Iron	0.62	0.01	0.65	0.01	0.52	0.01	0.42 [0.42]	0.01	mg/L	~
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516339

Sample Description	WBR - S - 04		WBR - S - 06		WBR - P - 03		WBR - P - 04			
Sample Date	10/17/2023 3:00 PM		10/18/2023 12:10 PM		10/17/2023 3:15 PM		10/17/2023 3:30 PM			
Lab ID	1942682		1942683		1942684		1942685			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Lead	0.00028	0.00005	0.00027	0.00005	0.00026	0.00005	0.00072 [0.00070]	0.00005	mg/L	~
Dissolved Lithium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Magnesium	2.240	0.004	2.310	0.004	1.770	0.004	1.430 [1.440]	0.004	mg/L	~
Dissolved Manganese	0.0210	0.0001	0.0204	0.0001	0.0164	0.0001	0.0610 [0.0613]	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	0.0002
Dissolved Molybdenum	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	mg/L	~
Dissolved Nickel	0.0011	0.0005	0.0011	0.0005	0.0006	0.0005	0.0006 [0.0006]	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Phosphorus	0.14	0.05	2.17	0.05	0.42	0.05	<0.05 [<0.05]	0.05	mg/L	~
Dissolved Potassium	0.18	0.05	0.23	0.05	<0.05	0.05	<0.05 [<0.05]	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Rubidium	0.0006	0.0002	0.0007	0.0002	0.0002	0.0002	<0.0002 [<0.0002]	0.0002	mg/L	~
Dissolved Scandium	0.001	0.001	0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Selenium	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	mg/L	~
Dissolved Silicon	1.57	0.05	1.65	0.05	1.24	0.05	1.24 [1.26]	0.05	mg/L	~
Dissolved Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Sodium	0.89	0.05	1.03	0.05	0.50	0.05	0.51 [0.52]	0.05	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516339

Sample Description	WBR - S - 04		WBR - S - 06		WBR - P - 03		WBR - P - 04			
Sample Date	10/17/2023 3:00 PM		10/18/2023 12:10 PM		10/17/2023 3:15 PM		10/17/2023 3:30 PM			
Lab ID	1942682		1942683		1942684		1942685			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Strontium	0.0177	0.0002	0.0190	0.0002	0.0113	0.0002	0.0094 [0.0094]	0.0002	mg/L	~
Dissolved Sulfur	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5 [<0.5]	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	mg/L	~
Dissolved Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Tin	0.0002	0.0001	0.0002	0.0001	0.0002	0.0001	0.0002 [0.0002]	0.0001	mg/L	~
Dissolved Titanium	0.0057	0.0003	0.0082	0.0003	0.0031	0.0003	0.0020 [0.0020]	0.0003	mg/L	~
Dissolved Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Uranium	0.00004	0.00001	0.00004	0.00001	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Vanadium	0.0006	0.0005	0.0007	0.0005	<0.0005	0.0005	<0.0005 [<0.0005]	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Zinc	0.005	0.001	0.006	0.001	0.008	0.001	0.007 [0.007]	0.001	mg/L	~
Dissolved Zirconium	0.0016	0.0002	0.0018	0.0002	0.0006	0.0002	0.0005 [0.0005]	0.0002	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516339

Sample Description	SWDup
Sample Date	10/17/2023 12:00 AM
Lab ID	1942686

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Antimony	0.0001	0.0001	mg/L	~
Dissolved Arsenic	0.0009	0.0001	mg/L	~
Dissolved Barium	0.0056	0.0001	mg/L	~
Dissolved Beryllium	0.00002	0.00002	mg/L	~
Dissolved Bismuth	<0.00005	0.00005	mg/L	~
Dissolved Boron	0.002	0.002	mg/L	~
Dissolved Cadmium	0.000050	0.000005	mg/L	~
Dissolved Calcium	8.55	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0009	0.0001	mg/L	~
Dissolved Cobalt	<0.0001	0.0001	mg/L	~
Dissolved Copper	0.0029	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	mg/L	~
Dissolved Iron	0.62	0.01	mg/L	~
Dissolved Lanthanum	<0.001	0.001	mg/L	~
Dissolved Lead	0.00027	0.00005	mg/L	~
Dissolved Lithium	<0.001	0.001	mg/L	~
Dissolved Magnesium	2.200	0.004	mg/L	~
Dissolved Manganese	0.0209	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00110	0.00005	mg/L	~
Dissolved Nickel	0.0012	0.0005	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516339

Sample Description	SWDup
Sample Date	10/17/2023 12:00 AM
Lab ID	1942686

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Niobium	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	mg/L	~
Dissolved Potassium	0.19	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	mg/L	~
Dissolved Rubidium	0.0006	0.0002	mg/L	~
Dissolved Scandium	0.001	0.001	mg/L	~
Dissolved Selenium	0.00007	0.00005	mg/L	~
Dissolved Silicon	1.55	0.05	mg/L	~
Dissolved Silver	<0.00001	0.00001	mg/L	~
Dissolved Sodium	0.90	0.05	mg/L	~
Dissolved Strontium	0.0174	0.0002	mg/L	~
Dissolved Sulfur	<0.5	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	mg/L	~
Dissolved Thallium	0.00007	0.00001	mg/L	~
Dissolved Thorium	0.0001	0.0001	mg/L	~
Dissolved Tin	0.0002	0.0001	mg/L	~
Dissolved Titanium	0.0053	0.0003	mg/L	~
Dissolved Tungsten	<0.0001	0.0001	mg/L	~
Dissolved Uranium	0.00004	0.00001	mg/L	~
Dissolved Vanadium	0.0007	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	mg/L	~
Dissolved Zinc	0.008	0.001	mg/L	~
Dissolved Zirconium	0.0016	0.0002	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516339

Sample Description	NDR - S - 02		JCRK - 03		PC - 01		WBR - S - Ref			
Sample Date	10/18/2023 8:45 AM		10/18/2023 2:00 PM		10/18/2023 10:40 AM		10/18/2023 11:00 AM			
Lab ID	1942678		1942679		1942680		1942681			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.334	0.001	0.476	0.001	0.305	0.001	0.525	0.001	mg/L	0.075
Total Antimony	<0.0001	0.0001	0.0002	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.02
Total Arsenic	0.0008	0.0001	0.0008	0.0001	0.0007	0.0001	0.0009	0.0001	mg/L	0.005
Total Barium	0.0067	0.0001	0.0079	0.0001	0.0089	0.0001	0.0080	0.0001	mg/L	~
Total Beryllium	<0.00002	0.00002	0.00002	0.00002	<0.00002	0.00002	0.00002	0.00002	mg/L	0.011
Total Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Total Boron	<0.002	0.002	<0.002	0.002	0.002	0.002	0.002	0.002	mg/L	0.2
Total Cadmium	0.000030	0.000005	0.000050	0.000005	0.000040	0.000005	0.000050	0.000005	mg/L	0.0001
Total Calcium	13.00	0.05	9.38	0.05	15.50	0.05	9.85	0.05	mg/L	~
Total Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	0.001	0.001	mg/L	~
Total Cesium	0.00002	0.00001	0.00003	0.00001	<0.00001	0.00001	0.00003	0.00001	mg/L	~
Total Chromium	0.0011	0.0001	0.0011	0.0001	0.0009	0.0001	0.0014	0.0001	mg/L	~
Total Cobalt	0.0001	0.0001	0.0001	0.0001	<0.0001	0.0001	0.0001	0.0001	mg/L	0.0009
Total Copper	0.0016	0.0002	0.0024	0.0002	0.0015	0.0002	0.0028	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.7	0.1	0.7	0.1	0.63	0.01	0.8	0.1	mg/L	0.3
Total Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00028	0.00005	0.00038	0.00005	0.00138	0.00005	0.00041	0.00005	mg/L	0.001
Total Lithium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Magnesium	3.460	0.004	2.430	0.004	4.140	0.004	2.440	0.004	mg/L	~
Total Manganese	0.0316	0.0001	0.0310	0.0001	0.0245	0.0001	0.0221	0.0001	mg/L	~
Total Mercury	<0.0001	0.0001							mg/L	0.0002
Total Molybdenum	0.00008	0.00005	0.00005	0.00005	0.00007	0.00005	0.00014	0.00005	mg/L	0.04

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516339

Sample Description	NDR - S - 02		JCRK - 03		PC - 01		WBR - S - Ref			
Sample Date	10/18/2023 8:45 AM		10/18/2023 2:00 PM		10/18/2023 10:40 AM		10/18/2023 11:00 AM			
Lab ID	1942678		1942679		1942680		1942681			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Nickel	0.0011	0.0005	0.0012	0.0005	0.0008	0.0005	0.0014	0.0005	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.28	0.05	0.25	0.05	0.35	0.05	0.29	0.05	mg/L	~
Total Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	0.0009	0.0002	0.0009	0.0002	0.0009	0.0002	0.0011	0.0002	mg/L	~
Total Scandium	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	mg/L	~
Total Selenium	0.00019	0.00005	0.00014	0.00005	<0.00005	0.00005	0.00006	0.00005	mg/L	0.1
Total Silicon	2.17	0.05	1.89	0.05	2.27	0.05	1.98	0.05	mg/L	~
Total Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0001
Total Sodium	3.12	0.05	2.21	0.05	1.85	0.05	1.34	0.05	mg/L	~
Total Strontium	0.0225	0.0002	0.0193	0.0002	0.0344	0.0002	0.0225	0.0002	mg/L	~
Total Sulphur	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	mg/L	~
Total Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Total Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0003
Total Thorium	<0.0001	0.0001	0.0001	0.0001	<0.0001	0.0001	0.0001	0.0001	mg/L	~
Total Tin	0.0003	0.0001	0.0002	0.0001	0.0002	0.0001	0.0010	0.0001	mg/L	~
Total Titanium	0.0080	0.0003	0.0116	0.0003	0.0063	0.0003	0.0119	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00003	0.00001	0.00005	0.00001	0.00006	0.00001	0.00005	0.00001	mg/L	0.005
Total Vanadium	0.0007	0.0005	0.0009	0.0005	0.0007	0.0005	0.0010	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.012	0.001	0.010	0.001	0.006	0.001	0.019	0.001	mg/L	0.02
Total Zirconium	0.0012	0.0002	0.0016	0.0002	0.0013	0.0002	0.0020	0.0002	mg/L	0.004

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516339

Sample Description	WBR - S - 04		WBR - S - 06		WBR - P - 03		WBR - P - 04			
Sample Date	10/17/2023 3:00 PM		10/18/2023 12:10 PM		10/17/2023 3:15 PM		10/17/2023 3:30 PM			
Lab ID	1942682		1942683		1942684		1942685			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.386	0.001	0.401	0.001	0.206	0.001	0.175 [0.177]	0.001	mg/L	0.075
Total Antimony	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	0.02
Total Arsenic	0.0008	0.0001	0.0008	0.0001	0.0007	0.0001	0.0007 [0.0007]	0.0001	mg/L	0.005
Total Barium	0.0065	0.0001	0.0064	0.0001	0.0046	0.0001	0.0047 [0.0047]	0.0001	mg/L	~
Total Beryllium	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	<0.00002 [<0.00002]	0.00002	mg/L	0.011
Total Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	mg/L	~
Total Boron	<0.002	0.002	<0.002	0.002	<0.002	0.002	<0.002 [<0.002]	0.002	mg/L	0.2
Total Cadmium	0.000040	0.000005	0.000050	0.000005	0.000020	0.000005	0.000040 [0.000040]	0.000005	mg/L	0.0001
Total Calcium	8.64	0.05	8.74	0.05	6.01	0.05	5.11 [5.13]	0.05	mg/L	~
Total Cerium	0.001	0.001	0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Cesium	0.00001	0.00001	0.00001	0.00001	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	~
Total Chromium	0.0011	0.0001	0.0010	0.0001	0.0008	0.0001	0.0008 [0.0007]	0.0001	mg/L	~
Total Cobalt	0.0001	0.0001	0.0001	0.0001	<0.0001	0.0001	0.0001 [0.0001]	0.0001	mg/L	0.0009
Total Copper	0.0026	0.0002	0.0019	0.0002	0.0014	0.0002	0.0009 [0.0011]	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Iron	0.7	0.1	0.7	0.1	0.54	0.01	0.43 [0.42]	0.01	mg/L	0.3

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516339

Sample Description	WBR - S - 04		WBR - S - 06		WBR - P - 03		WBR - P - 04			
Sample Date	10/17/2023 3:00 PM		10/18/2023 12:10 PM		10/17/2023 3:15 PM		10/17/2023 3:30 PM			
Lab ID	1942682		1942683		1942684		1942685			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Lead	0.00045	0.00005	0.00035	0.00005	0.00030	0.00005	0.00076 [0.00074]	0.00005	mg/L	0.001
Total Lithium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Magnesium	2.270	0.004	2.290	0.004	1.760	0.004	1.430 [1.430]	0.004	mg/L	~
Total Manganese	0.0280	0.0001	0.0223	0.0001	0.0168	0.0001	0.0608 [0.0603]	0.0001	mg/L	~
Total Mercury					<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	0.0002
Total Molybdenum	0.00012	0.00005	<0.00005	0.00005	0.00011	0.00005	<0.00005 [<0.00005]	0.00005	mg/L	0.04
Total Nickel	0.0011	0.0005	0.0011	0.0005	0.0006	0.0005	0.0006 [<0.0005]	0.0005	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Potassium	0.21	0.05	0.22	0.05	0.06	0.05	<0.05 [<0.05]	0.05	mg/L	~
Total Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Rubidium	0.0008	0.0002	0.0008	0.0002	0.0002	0.0002	<0.0002 [<0.0002]	0.0002	mg/L	~
Total Scandium	0.001	0.001	0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Selenium	<0.00005	0.00005	0.00008	0.00005	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	mg/L	0.1
Total Silicon	1.65	0.05	1.70	0.05	1.26	0.05	1.27 [1.27]	0.05	mg/L	~
Total Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	0.0001
Total Sodium	0.99	0.05	0.98	0.05	0.63	0.05	0.50 [0.53]	0.05	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516339

Sample Description	WBR - S - 04		WBR - S - 06		WBR - P - 03		WBR - P - 04			
Sample Date	10/17/2023 3:00 PM		10/18/2023 12:10 PM		10/17/2023 3:15 PM		10/17/2023 3:30 PM			
Lab ID	1942682		1942683		1942684		1942685			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Strontium	0.0177	0.0002	0.0187	0.0002	0.0113	0.0002	0.0095 [0.0094]	0.0002	mg/L	~
Total Sulphur	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5 [<0.5]	0.5	mg/L	~
Total Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	mg/L	~
Total Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	0.0003
Total Thorium	0.0001	0.0001	0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	~
Total Tin	0.0002	0.0001	0.0002	0.0001	0.0002	0.0001	0.0002 [0.0002]	0.0001	mg/L	~
Total Titanium	0.0079	0.0003	0.0088	0.0003	0.0031	0.0003	0.0023 [0.0022]	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	mg/L	0.03
Total Uranium	0.00004	0.00001	0.00005	0.00001	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	mg/L	0.005
Total Vanadium	0.0008	0.0005	0.0008	0.0005	<0.0005	0.0005	<0.0005 [<0.0005]	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	~
Total Zinc	0.009	0.001	0.006	0.001	0.007	0.001	0.009 [0.009]	0.001	mg/L	0.02
Total Zirconium	0.0018	0.0002	0.0020	0.0002	0.0006	0.0002	0.0005 [0.0005]	0.0002	mg/L	0.004

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516339

Sample Description	SWDup
Sample Date	10/17/2023 12:00 AM
Lab ID	1942686

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.454	0.001	mg/L	0.075
Total Antimony	0.0002	0.0001	mg/L	0.02
Total Arsenic	0.0009	0.0001	mg/L	0.005
Total Barium	0.0066	0.0001	mg/L	~
Total Beryllium	0.00002	0.00002	mg/L	0.011
Total Bismuth	<0.00005	0.00005	mg/L	~
Total Boron	<0.002	0.002	mg/L	0.2
Total Cadmium	0.000050	0.000005	mg/L	0.0001
Total Calcium	8.42	0.05	mg/L	~
Total Cerium	0.001	0.001	mg/L	~
Total Cesium	0.00002	0.00001	mg/L	~
Total Chromium	0.0011	0.0001	mg/L	~
Total Cobalt	0.0001	0.0001	mg/L	0.0009
Total Copper	0.0020	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	mg/L	~
Total Gallium	<0.001	0.001	mg/L	~
Total Iron	0.7	0.1	mg/L	0.3
Total Lanthanum	<0.001	0.001	mg/L	~
Total Lead	0.00034	0.00005	mg/L	0.001
Total Lithium	<0.001	0.001	mg/L	~
Total Magnesium	2.230	0.004	mg/L	~
Total Manganese	0.0255	0.0001	mg/L	~
Total Molybdenum	0.00097	0.00005	mg/L	0.04
Total Nickel	0.0012	0.0005	mg/L	0.025

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516339

Sample Description	SWDup
Sample Date	10/17/2023 12:00 AM
Lab ID	1942686

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Niobium	<0.001	0.001	mg/L	~
Total Potassium	0.21	0.05	mg/L	~
Total Rhodium	<0.001	0.001	mg/L	~
Total Rubidium	0.0009	0.0002	mg/L	~
Total Scandium	0.001	0.001	mg/L	~
Total Selenium	<0.00005	0.00005	mg/L	0.1
Total Silicon	1.78	0.05	mg/L	~
Total Silver	<0.00001	0.00001	mg/L	0.0001
Total Sodium	0.89	0.05	mg/L	~
Total Strontium	0.0179	0.0002	mg/L	~
Total Sulphur	<0.5	0.5	mg/L	~
Total Tellurium	<0.0002	0.0002	mg/L	~
Total Thallium	0.00003	0.00001	mg/L	0.0003
Total Thorium	0.0001	0.0001	mg/L	~
Total Tin	0.0003	0.0001	mg/L	~
Total Titanium	0.0104	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00004	0.00001	mg/L	0.005
Total Vanadium	0.0009	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	mg/L	~
Total Zinc	0.007	0.001	mg/L	0.02
Total Zirconium	0.0018	0.0002	mg/L	0.004

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516339

Sample Description	JCRK - 03		PC - 01		WBR - S - Ref		WBR - S - 04			
Sample Date	10/18/2023 2:00 PM		10/18/2023 10:40 AM		10/18/2023 11:00 AM		10/17/2023 3:00 PM			
Lab ID	1942679		1942680		1942681		1942682			
MethylMercury	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.10	0.02	0.20	0.02	0.16	0.02	0.12	0.02	ng/L	~

Sample Description	WBR - S - 06		SWDup			
Sample Date	10/18/2023 12:10 PM		10/17/2023 12:00 AM			
Lab ID	1942683		1942686			
MethylMercury	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.13	0.02	0.14 [0.13]	0.02	ng/L	~

Sample Description	NDR - S - 02		JCRK - 03		PC - 01		WBR - S - Ref			
Sample Date	10/18/2023 8:45 AM		10/18/2023 2:00 PM		10/18/2023 10:40 AM		10/18/2023 11:00 AM			
Lab ID	1942678		1942679		1942680		1942681			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	85	10	115	10	105	10	125	10	mg/L	~
Total Suspended Solids	7.33	0.67	9.33	0.67	1.70	0.67	7.33	0.67	mg/L	~

Sample Description	WBR - S - 04		WBR - S - 06		WBR - P - 03		WBR - P - 04			
Sample Date	10/17/2023 3:00 PM		10/18/2023 12:10 PM		10/17/2023 3:15 PM		10/17/2023 3:30 PM			
Lab ID	1942682		1942683		1942684		1942685			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	55	10	75	10	90	10	95	10	mg/L	~
Total Suspended Solids	4.30	0.67	5.00	0.67	1.00	0.67	3.00	0.67	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 516339

Sample Description	SWDup
Sample Date	10/17/2023 12:00 AM
Lab ID	1942686

Solids	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	85	10	mg/L	~
Total Suspended Solids	7.33	0.67	mg/L	~

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Organic Soil Analysis: Data reported for organic analysis in soils samples are corrected for moisture content.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	517457
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	David Duciaume
Date Order Received:	10/30/2023	Analysis Started:	10/31/2023
Arrival Temperature:	14 C	Analysis Completed:	11/27/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
JCRK-02	1946539	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	10/30/2023	10:10 AM
JC-S-01	1946540	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	10/30/2023	9:50 AM
NDR-S-06	1946541	Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	10/30/2023	9:10 AM
Field Blank	1946542	Water	Grab		10/30/2023	
Travel Blank	1946543	Water	Grab		10/30/2023	

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 517457

Method	Lab	Description	Reference
DOC Water FF (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water -> Field-Filtered	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 517457

WORK ORDER RESULTS

Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06		Field Blank			
Sample Date	10/30/2023 10:10 AM		10/30/2023 9:50 AM		10/30/2023 9:10 AM		10/30/2023 12:00 AM			
Lab ID	1946539		1946540		1946541		1946542			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	0.5	0.2	12.4	0.2	3.9	0.2	<0.2	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	mg/L	~
Sulphate	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	mg/L	~

Sample Description	Travel Blank			
Sample Date	10/30/2023 12:00 AM			
Lab ID	1946543			
Anions	Result	MDL	Units	Criteria: PWQO
Chloride	<0.2	0.2	mg/L	~
Fluoride	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	mg/L	~
Nitrite (as N)	0.02	0.01	mg/L	~
Sulphate	<0.5	0.5	mg/L	~

Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06			
Sample Date	10/30/2023 10:10 AM		10/30/2023 9:50 AM		10/30/2023 9:10 AM			
Lab ID	1946539		1946540		1946541			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	5.7	N/A	4.24	N/A	4.86	N/A	pH	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 517457

Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06			
Sample Date	10/30/2023 10:10 AM		10/30/2023 9:50 AM		10/30/2023 9:10 AM			
Lab ID	1946539		1946540		1946541			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field Temp	3.34	N/A	3.66	N/A	8.84	N/A	°C	~

Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06		Field Blank			
Sample Date	10/30/2023 10:10 AM		10/30/2023 9:50 AM		10/30/2023 9:10 AM		10/30/2023 12:00 AM			
Lab ID	1946539		1946540		1946541		1946542			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	10	5	16	5	5	5	<5	5	mg/L as CaCO3	~
Ammonia (as N)	0.055 [0.054]	0.005	0.057	0.005	0.056	0.005	<0.005	0.005	mg/L	~
Conductivity	31	1	76	1	83	1	1	1	µS/cm	~
Dissolved Organic Carbon	46	2	52	2	47	2	<0.4	0.4	mg/L	~
Free Cyanide	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001 [<0.001]	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	11	2	8	2	31	2	2	2	mg/L as CaCO3	~
pH	5.88	N/A	5.38	N/A	7.06	N/A	4.98	N/A	pH	~
Strong Acid Dissociable Cyanide	<0.002	0.002	<0.002	0.002	<0.002	0.002	<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	22.2	0.1	23.6	0.1	44.3	0.1	0.2	0.1	mg/L	~
Total Phosphorus (as P)	0.014 [0.014]	0.002	0.011	0.002	0.017	0.002	0.004	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.003	0.001	0.003	0.001	0.002	0.001	0.002	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 517457

Sample Description	Travel Blank
Sample Date	10/30/2023 12:00 AM
Lab ID	1946543

General Chemistry	Result	MDL	Units	Criteria: PWQO
Acidity	<5	5	mg/L as CaCO3	~
Ammonia (as N)	<0.005	0.005	mg/L	~
Conductivity	1	1	µS/cm	~
Dissolved Organic Carbon	<0.4	0.4	mg/L	~
Free Cyanide	<0.001	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	2	2	mg/L as CaCO3	~
pH	5.54	N/A	pH	~
Strong Acid Dissociable Cyanide	<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	<0.1	0.1	mg/L	~
Total Phosphorus (as P)	0.003	0.002	mg/L	~
Weak Acid Dissociable Cyanide	<0.001	0.001	mg/L	~

Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06		Field Blank			
Sample Date	10/30/2023 10:10 AM		10/30/2023 9:50 AM		10/30/2023 9:10 AM		10/30/2023 12:00 AM			
Lab ID	1946539		1946540		1946541		1946542			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	6.90	0.01	4.96	0.01	5.64	0.01	0.07	0.01	ng/L	200

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 517457

Sample Description	Travel Blank			
Sample Date	10/30/2023 12:00 AM			
Lab ID	1946543			
Mercury (Trace)	Result	MDL	Units	Criteria: PWQO
Total Mercury	0.07	0.01	ng/L	200

Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06		Field Blank			
Sample Date	10/30/2023 10:10 AM		10/30/2023 9:50 AM		10/30/2023 9:10 AM		10/30/2023 12:00 AM			
Lab ID	1946539		1946540		1946541		1946542			
Mercury by CV	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	ug/L	0.2

Sample Description	Travel Blank			
Sample Date	10/30/2023 12:00 AM			
Lab ID	1946543			
Mercury by CV	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	ug/L	0.2

Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06		Field Blank			
Sample Date	10/30/2023 10:10 AM		10/30/2023 9:50 AM		10/30/2023 9:10 AM		10/30/2023 12:00 AM			
Lab ID	1946539		1946540		1946541		1946542			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.223	0.001	0.121	0.001	0.140	0.001	0.001	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 517457

Sample Description	Travel Blank			
Sample Date	10/30/2023 12:00 AM			
Lab ID	1946543			
Metals (Dissolved - 0.2um)	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	<0.001 [<0.001]	0.001	mg/L	~

Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06		Field Blank			
Sample Date	10/30/2023 10:10 AM		10/30/2023 9:50 AM		10/30/2023 9:10 AM		10/30/2023 12:00 AM			
Lab ID	1946539		1946540		1946541		1946542			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Antimony	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Arsenic	0.0008	0.0001	0.0006	0.0001	0.0007	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Barium	0.0041	0.0001	0.0036	0.0001	0.0047	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Beryllium	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	mg/L	~
Dissolved Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Boron	0.002	0.002	<0.002	0.002	0.003	0.002	<0.002	0.002	mg/L	~
Dissolved Cadmium	0.000060	0.000005	0.000040	0.000005	0.000020	0.000005	<0.000005	0.000005	mg/L	~
Dissolved Calcium	6.03	0.05	6.63	0.05	11.80	0.05	<0.05	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0010	0.0001	0.0008	0.0001	0.0010	0.0001	0.0002	0.0001	mg/L	~
Dissolved Cobalt	0.0001	0.0001	0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Copper	0.0026	0.0002	0.0022	0.0002	0.0015	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.50	0.01	0.33	0.01	0.44	0.01	<0.01	0.01	mg/L	~
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 517457

Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06		Field Blank			
Sample Date	10/30/2023 10:10 AM		10/30/2023 9:50 AM		10/30/2023 9:10 AM		10/30/2023 12:00 AM			
Lab ID	1946539		1946540		1946541		1946542			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Lead	0.00037	0.00005	0.00077	0.00005	0.00012	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Lithium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Magnesium	1.420	0.004	1.490	0.004	3.280	0.004	<0.004	0.004	mg/L	~
Dissolved Manganese	0.0257	0.0001	0.0304	0.0001	0.0196	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Nickel	0.0006	0.0005	<0.0005	0.0005	0.0007	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.11	0.05	0.06	0.05	0.20	0.05	<0.05	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	0.0004	0.0002	<0.0002	0.0002	0.0006	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Scandium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Selenium	0.00013	0.00005	0.00015	0.00005	0.00015	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Silicon	1.23	0.05	1.37	0.05	1.54	0.05	<0.05	0.05	mg/L	~
Dissolved Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Sodium	0.68	0.05	7.61	0.05	3.11	0.05	<0.05	0.05	mg/L	~
Dissolved Strontium	0.0116	0.0002	0.0102	0.0002	0.0177	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Sulfur	<0.5	0.5	<0.5	0.5	0.6	0.5	<0.5	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Tin	0.0002	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	mg/L	~
Dissolved Titanium	0.0048	0.0003	0.0016	0.0003	0.0027	0.0003	<0.0003	0.0003	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 517457

Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06		Field Blank			
Sample Date	10/30/2023 10:10 AM		10/30/2023 9:50 AM		10/30/2023 9:10 AM		10/30/2023 12:00 AM			
Lab ID	1946539		1946540		1946541		1946542			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Uranium	0.00003	0.00001	<0.00001	0.00001	0.00003	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Vanadium	0.0006	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.010	0.001	0.009	0.001	0.005	0.001	<0.001	0.001	mg/L	~
Dissolved Zirconium	0.0008	0.0002	0.0003	0.0002	0.0007	0.0002	<0.0002	0.0002	mg/L	~

Sample Description	Travel Blank			
Sample Date	10/30/2023 12:00 AM			
Lab ID	1946543			
Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Antimony	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Arsenic	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Barium	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Beryllium	<0.00002 [<0.00002]	0.00002	mg/L	~
Dissolved Bismuth	<0.00005 [<0.00005]	0.00005	mg/L	~
Dissolved Boron	<0.002 [<0.002]	0.002	mg/L	~
Dissolved Cadmium	<0.000005 [<0.000005]	0.000005	mg/L	~
Dissolved Calcium	<0.05 [<0.05]	0.05	mg/L	~
Dissolved Cerium	<0.001 [<0.001]	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 517457

Sample Description	Travel Blank
Sample Date	10/30/2023 12:00 AM
Lab ID	1946543

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Cesium	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Chromium	0.0002 [0.0001]	0.0001	mg/L	~
Dissolved Cobalt	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Copper	<0.0002 [<0.0002]	0.0002	mg/L	~
Dissolved Europium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Gallium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Iron	<0.01 [<0.01]	0.01	mg/L	~
Dissolved Lanthanum	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Lead	<0.00005 [<0.00005]	0.00005	mg/L	~
Dissolved Lithium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Magnesium	<0.004 [<0.004]	0.004	mg/L	~
Dissolved Manganese	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Mercury	<0.0001 [<0.0001]	0.0001	mg/L	0.0002
Dissolved Molybdenum	<0.00005 [<0.00005]	0.00005	mg/L	~
Dissolved Nickel	<0.0005 [<0.0005]	0.0005	mg/L	~
Dissolved Niobium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Phosphorus	<0.05 [<0.05]	0.05	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 517457

Sample Description	Travel Blank
Sample Date	10/30/2023 12:00 AM
Lab ID	1946543

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Potassium	<0.05 [<0.05]	0.05	mg/L	~
Dissolved Rhodium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Rubidium	<0.0002 [<0.0002]	0.0002	mg/L	~
Dissolved Scandium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Selenium	0.00007 [<0.00005]	0.00005	mg/L	~
Dissolved Silicon	<0.05 [<0.05]	0.05	mg/L	~
Dissolved Silver	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Sodium	<0.05 [<0.05]	0.05	mg/L	~
Dissolved Strontium	<0.0002 [<0.0002]	0.0002	mg/L	~
Dissolved Sulfur	<0.5 [<0.5]	0.5	mg/L	~
Dissolved Tellurium	<0.0002 [<0.0002]	0.0002	mg/L	~
Dissolved Thallium	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Thorium	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Tin	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Titanium	<0.0003 [<0.0003]	0.0003	mg/L	~
Dissolved Tungsten	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Uranium	<0.00001 [<0.00001]	0.00001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 517457

Sample Description	Travel Blank
Sample Date	10/30/2023 12:00 AM
Lab ID	1946543

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Vanadium	<0.0005 [<0.0005]	0.0005	mg/L	~
Dissolved Yttrium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Zinc	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Zirconium	<0.0002 [<0.0002]	0.0002	mg/L	~

Sample Description	JCRK - 02	JC - S - 01	NDR - S - 06	Field Blank
Sample Date	10/30/2023 10:10 AM	10/30/2023 9:50 AM	10/30/2023 9:10 AM	10/30/2023 12:00 AM
Lab ID	1946539	1946540	1946541	1946542

Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.294	0.001	0.133	0.001	0.208	0.001	0.003	0.001	mg/L	0.075
Total Antimony	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.02
Total Arsenic	0.0007	0.0001	0.0006	0.0001	0.0007	0.0001	<0.0001	0.0001	mg/L	0.005
Total Barium	0.0048	0.0001	0.0048	0.0001	0.0068	0.0001	<0.0001	0.0001	mg/L	~
Total Beryllium	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	mg/L	0.011
Total Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Total Boron	<0.002	0.002	<0.002	0.002	0.002	0.002	<0.002	0.002	mg/L	0.2
Total Cadmium	0.000050	0.000005	0.000040	0.000005	0.000020	0.000005	<0.000005	0.000005	mg/L	0.0001
Total Calcium	6.27	0.05	6.87	0.05	12.60	0.05	<0.05	0.05	mg/L	~
Total Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Cesium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Total Chromium	0.0012	0.0001	0.0011	0.0001	0.0012	0.0001	0.0003	0.0001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 517457

Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06		Field Blank			
Sample Date	10/30/2023 10:10 AM		10/30/2023 9:50 AM		10/30/2023 9:10 AM		10/30/2023 12:00 AM			
Lab ID	1946539		1946540		1946541		1946542			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Cobalt	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	<0.0001	0.0001	mg/L	0.0009
Total Copper	0.0026	0.0002	0.0023	0.0002	0.0014	0.0002	0.0005	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.58	0.01	0.35	0.01	0.53	0.01	0.01	0.01	mg/L	0.3
Total Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00045	0.00005	0.00084	0.00005	0.00022	0.00005	0.00011	0.00005	mg/L	0.001
Total Lithium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Magnesium	1.490	0.004	1.500	0.004	3.410	0.004	<0.004	0.004	mg/L	~
Total Manganese	0.0286	0.0001	0.0318	0.0001	0.0277	0.0001	<0.0001	0.0001	mg/L	~
Total Molybdenum	0.00005	0.00005	<0.00005	0.00005	0.00014	0.00005	<0.00005	0.00005	mg/L	0.04
Total Nickel	0.0005	0.0005	0.0008	0.0005	0.0007	0.0005	<0.0005	0.0005	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.16	0.05	0.07	0.05	0.19	0.05	<0.05	0.05	mg/L	~
Total Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	0.0006	0.0002	<0.0002	0.0002	0.0006	0.0002	<0.0002	0.0002	mg/L	~
Total Scandium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Selenium	0.00011	0.00005	0.00020	0.00005	0.00016	0.00005	<0.00005	0.00005	mg/L	0.1
Total Silicon	1.41	0.05	1.45	0.05	1.72	0.05	0.13	0.05	mg/L	~
Total Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0001
Total Sodium	0.76	0.05	7.72	0.05	3.10	0.05	<0.05	0.05	mg/L	~
Total Strontium	0.0122	0.0002	0.0108	0.0002	0.0191	0.0002	<0.0002	0.0002	mg/L	~
Total Sulphur	<0.5	0.5	0.6	0.5	0.8	0.5	<0.5	0.5	mg/L	~
Total Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 517457

Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06		Field Blank			
Sample Date	10/30/2023 10:10 AM		10/30/2023 9:50 AM		10/30/2023 9:10 AM		10/30/2023 12:00 AM			
Lab ID	1946539		1946540		1946541		1946542			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0003
Total Thorium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Total Tin	0.0003	0.0001	0.0003	0.0001	0.0003	0.0001	0.0002	0.0001	mg/L	~
Total Titanium	0.0072	0.0003	0.0021	0.0003	0.0052	0.0003	<0.0003	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00004	0.00001	<0.00001	0.00001	0.00004	0.00001	<0.00001	0.00001	mg/L	0.005
Total Vanadium	0.0007	0.0005	<0.0005	0.0005	0.0006	0.0005	<0.0005	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.013	0.001	0.015	0.001	0.007	0.001	0.002	0.001	mg/L	0.02
Total Zirconium	0.0009	0.0002	0.0003	0.0002	0.0007	0.0002	<0.0002	0.0002	mg/L	0.004

Sample Description	Travel Blank			
Sample Date	10/30/2023 12:00 AM			
Lab ID	1946543			
Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.004 [0.005]	0.001	mg/L	0.075
Total Antimony	<0.0001 [<0.0001]	0.0001	mg/L	0.02
Total Arsenic	<0.0001 [<0.0001]	0.0001	mg/L	0.005
Total Barium	<0.0001 [0.0001]	0.0001	mg/L	~
Total Beryllium	<0.00002 [<0.00002]	0.00002	mg/L	0.011
Total Bismuth	<0.00005 [<0.00005]	0.00005	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 517457

Sample Description	Travel Blank
Sample Date	10/30/2023 12:00 AM
Lab ID	1946543

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Boron	<0.002 [<0.002]	0.002	mg/L	0.2
Total Cadmium	<0.000005 [<0.000005]	0.000005	mg/L	0.0001
Total Calcium	<0.05 [<0.05]	0.05	mg/L	~
Total Cerium	<0.001 [<0.001]	0.001	mg/L	~
Total Cesium	<0.00001 [<0.00001]	0.00001	mg/L	~
Total Chromium	0.0003 [0.0003]	0.0001	mg/L	~
Total Cobalt	<0.0001 [<0.0001]	0.0001	mg/L	0.0009
Total Copper	<0.0002 [<0.0002]	0.0002	mg/L	0.001
Total Europium	<0.001 [<0.001]	0.001	mg/L	~
Total Gallium	<0.001 [<0.001]	0.001	mg/L	~
Total Iron	<0.01 [<0.01]	0.01	mg/L	0.3
Total Lanthanum	<0.001 [<0.001]	0.001	mg/L	~
Total Lead	0.00006 [<0.00005]	0.00005	mg/L	0.001
Total Lithium	<0.001 [<0.001]	0.001	mg/L	~
Total Magnesium	<0.004 [0.004]	0.004	mg/L	~
Total Manganese	0.0001 [0.0001]	0.0001	mg/L	~
Total Molybdenum	<0.00005 [<0.00005]	0.00005	mg/L	0.04

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 517457

Sample Description	Travel Blank
Sample Date	10/30/2023 12:00 AM
Lab ID	1946543

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Nickel	<0.0005 [<0.0005]	0.0005	mg/L	0.025
Total Niobium	<0.001 [<0.001]	0.001	mg/L	~
Total Potassium	<0.05 [<0.05]	0.05	mg/L	~
Total Rhodium	<0.001 [<0.001]	0.001	mg/L	~
Total Rubidium	<0.0002 [<0.0002]	0.0002	mg/L	~
Total Scandium	<0.001 [<0.001]	0.001	mg/L	~
Total Selenium	0.00008 [<0.00005]	0.00005	mg/L	0.1
Total Silicon	0.13 [0.13]	0.05	mg/L	~
Total Silver	<0.00001 [<0.00001]	0.00001	mg/L	0.0001
Total Sodium	<0.05 [<0.05]	0.05	mg/L	~
Total Strontium	<0.0002 [<0.0002]	0.0002	mg/L	~
Total Sulphur	<0.5 [<0.5]	0.5	mg/L	~
Total Tellurium	<0.0002 [<0.0002]	0.0002	mg/L	~
Total Thallium	<0.00001 [<0.00001]	0.00001	mg/L	0.0003
Total Thorium	<0.0001 [<0.0001]	0.0001	mg/L	~
Total Tin	0.0002 [0.0003]	0.0001	mg/L	~
Total Titanium	<0.0003 [<0.0003]	0.0003	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 517457

Sample Description	Travel Blank			
Sample Date	10/30/2023 12:00 AM			
Lab ID	1946543			
Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Tungsten	<0.0001 [<0.0001]	0.0001	mg/L	0.03
Total Uranium	<0.00001 [<0.00001]	0.00001	mg/L	0.005
Total Vanadium	<0.0005 [<0.0005]	0.0005	mg/L	0.006
Total Yttrium	<0.001 [<0.001]	0.001	mg/L	~
Total Zinc	0.002 [0.002]	0.001	mg/L	0.02
Total Zirconium	<0.0002 [<0.0002]	0.0002	mg/L	0.004

Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06		Field Blank			
Sample Date	10/30/2023 10:10 AM		10/30/2023 9:50 AM		10/30/2023 9:10 AM		10/30/2023 12:00 AM			
Lab ID	1946539		1946540		1946541		1946542			
MethylMercury	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.30	0.02	0.89	0.02	0.30	0.02	<0.02	0.02	ng/L	~

Sample Description	Travel Blank			
Sample Date	10/30/2023 12:00 AM			
Lab ID	1946543			
MethylMercury	Result	MDL	Units	Criteria: PWQO
Methyl mercury	<0.02	0.02	ng/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 517457

Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06		Field Blank			
Sample Date	10/30/2023 10:10 AM		10/30/2023 9:50 AM		10/30/2023 9:10 AM		10/30/2023 12:00 AM			
Lab ID	1946539		1946540		1946541		1946542			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	75	10	100	10	110	10	15	10	mg/L	~
Total Suspended Solids	2.30	0.67	1.70	0.67	4.00	0.67	<0.67	0.67	mg/L	~

Sample Description	Travel Blank			
Sample Date	10/30/2023 12:00 AM			
Lab ID	1946543			
Solids	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	<10	10	mg/L	~
Total Suspended Solids	1.00	0.67	mg/L	~

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Organic Soil Analysis: Data reported for organic analysis in soils samples are corrected for moisture content.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

Reproduction of Report: Report shall not be reproduced, except in full, without the approval of Testmark Laboratories Ltd.

ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	517852
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation:	PWQO
		Project #:	Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	Jacques Picotte & Cody Wight
Date Order Received:	11/1/2023	Analysis Started:	11/2/2023
Arrival Temperature:	16 C	Analysis Completed:	11/28/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
MARLk	1948016	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	10/31/2023	10:50 AM
MATR-01	1948017	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	11/1/2023	12:50 PM
MATR-02	1948018	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	11/1/2023	1:40 PM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water FF (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water -> Field-Filtered	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 517852

Method	Lab	Description	Reference
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 517852

WORK ORDER RESULTS

Sample Description	MARLk		MATR - 01		MATR - 02			
Sample Date	10/31/2023 10:50 AM		11/1/2023 12:50 PM		11/1/2023 1:40 PM			
Lab ID	1948016		1948017		1948018			
Anions	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	<0.2	0.2	1.8	0.2	1.8	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	<0.01	0.01	mg/L	~
Sulphate	<0.5	0.5	3.3	0.5	3.2	0.5	mg/L	~

Sample Description	MARLk		MATR - 01		MATR - 02			
Sample Date	10/31/2023 10:50 AM		11/1/2023 12:50 PM		11/1/2023 1:40 PM			
Lab ID	1948016		1948017		1948018			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	4.68	N/A	6.48	N/A	6.53	N/A	pH	~
Field Temp	2.48	N/A	5.78	N/A	5.75	N/A	°C	~

Sample Description	MARLk		MATR - 01		MATR - 02			
Sample Date	10/31/2023 10:50 AM		11/1/2023 12:50 PM		11/1/2023 1:40 PM			
Lab ID	1948016		1948017		1948018			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	12	5	<5	5	<5	5	mg/L as CaCO3	~
Ammonia (as N)	0.041	0.005	0.022	0.005	0.020	0.005	mg/L	~
Conductivity	29	1	91	1	90	1	µS/cm	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 517852

Sample Description	MARLk		MATR - 01		MATR - 02			
Sample Date	10/31/2023 10:50 AM		11/1/2023 12:50 PM		11/1/2023 1:40 PM			
Lab ID	1948016		1948017		1948018			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Organic Carbon	29.3	0.4	16.8 [16.8]	0.4	17.0	0.4	mg/L	~
Free Cyanide	<0.001	0.001	<0.001	0.001			mg/L	0.005
M-Alkalinity (pH 4.5)	12	2	42	2	44	2	mg/L as CaCO3	~
pH	5.78	N/A	7.25	N/A	7.29	N/A	pH	~
Strong Acid Dissociable Cyanide	<0.002	0.002	<0.002	0.002			mg/L	~
Total Hardness (as CaCO3) (Calc.)	20.7	0.1	46.5	0.1	46.8	0.1	mg/L	~
Total Phosphorus (as P)	0.015	0.002	0.014	0.002	0.016	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.002	0.001	0.002	0.001			mg/L	~

Sample Description	MARLk		MATR - 01			
Sample Date	10/31/2023 10:50 AM		11/1/2023 12:50 PM			
Lab ID	1948016		1948017			
Mercury (Trace)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	3.37	0.01	1.63	0.01	ng/L	200

Sample Description	MARLk		MATR - 01			
Sample Date	10/31/2023 10:50 AM		11/1/2023 12:50 PM			
Lab ID	1948016		1948017			
Mercury by CV	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01	0.01	ug/L	0.2

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 517852

Sample Description	MARLk		MATR - 01		MATR - 02			
Sample Date	10/31/2023 10:50 AM		11/1/2023 12:50 PM		11/1/2023 1:40 PM			
Lab ID	1948016		1948017		1948018			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.120	0.001	0.061	0.001	0.057	0.001	mg/L	~

Sample Description	MARLk		MATR - 01		MATR - 02			
Sample Date	10/31/2023 10:50 AM		11/1/2023 12:50 PM		11/1/2023 1:40 PM			
Lab ID	1948016		1948017		1948018			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Antimony	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Arsenic	0.0005	0.0001	0.0004	0.0001	0.0004	0.0001	mg/L	~
Dissolved Barium	0.0034	0.0001	0.0053	0.0001	0.0052	0.0001	mg/L	~
Dissolved Beryllium	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	mg/L	~
Dissolved Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Boron	0.004	0.002	0.009	0.002	0.009	0.002	mg/L	~
Dissolved Cadmium	0.000040	0.000005	0.000010	0.000005	0.000010	0.000005	mg/L	~
Dissolved Calcium	5.62	0.05	13.50	0.05	13.50	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0008	0.0001	0.0006	0.0001	0.0009	0.0001	mg/L	~
Dissolved Cobalt	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Copper	0.0010	0.0002	0.0009	0.0002	0.0010	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.52	0.01	0.21	0.01	0.21	0.01	mg/L	~
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 517852

Sample Description	MARLk		MATR - 01		MATR - 02			
Sample Date	10/31/2023 10:50 AM		11/1/2023 12:50 PM		11/1/2023 1:40 PM			
Lab ID	1948016		1948017		1948018			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Lead	0.00035	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Lithium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Magnesium	1.490	0.004	3.290	0.004	3.270	0.004	mg/L	~
Dissolved Manganese	0.0391	0.0001	0.0104	0.0001	0.0106	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00007	0.00005	0.00012	0.00005	0.00008	0.00005	mg/L	~
Dissolved Nickel	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05	0.05	0.56	0.05	mg/L	~
Dissolved Potassium	0.21	0.05	0.37	0.05	0.37	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	0.0008	0.0002	0.0010	0.0002	0.0009	0.0002	mg/L	~
Dissolved Scandium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Selenium	0.00019	0.00005	0.00011	0.00005	0.00014	0.00005	mg/L	~
Dissolved Silicon	1.00	0.05	2.45	0.05	2.47	0.05	mg/L	~
Dissolved Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Sodium	0.45	0.05	1.87	0.05	1.85	0.05	mg/L	~
Dissolved Strontium	0.0110	0.0002	0.0208	0.0002	0.0207	0.0002	mg/L	~
Dissolved Sulfur	1.4	0.5	2.7	0.5	2.8	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Tin	0.0002	0.0001	0.0002	0.0001	0.0002	0.0001	mg/L	~
Dissolved Titanium	0.0040	0.0003	0.0015	0.0003	0.0034	0.0003	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 517852

Sample Description	MARLk		MATR - 01		MATR - 02			
Sample Date	10/31/2023 10:50 AM		11/1/2023 12:50 PM		11/1/2023 1:40 PM			
Lab ID	1948016		1948017		1948018			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Uranium	0.00004	0.00001	0.00005	0.00001	0.00005	0.00001	mg/L	~
Dissolved Vanadium	0.0006	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.007	0.001	0.002	0.001	0.004	0.001	mg/L	~
Dissolved Zirconium	0.0005	0.0002	0.0004	0.0002	0.0004	0.0002	mg/L	~

Sample Description	MARLk		MATR - 01		MATR - 02			
Sample Date	10/31/2023 10:50 AM		11/1/2023 12:50 PM		11/1/2023 1:40 PM			
Lab ID	1948016		1948017		1948018			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.235	0.001	0.116	0.001	0.142	0.001	mg/L	0.075
Total Antimony	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.02
Total Arsenic	0.0005	0.0001	0.0004	0.0001	0.0004	0.0001	mg/L	0.005
Total Barium	0.0045	0.0001	0.0057	0.0001	0.0059	0.0001	mg/L	~
Total Beryllium	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	mg/L	0.011
Total Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Total Boron	0.003	0.002	0.009	0.002	0.009	0.002	mg/L	0.2
Total Cadmium	0.000050	0.000005	0.000010	0.000005	0.000010	0.000005	mg/L	0.0001
Total Calcium	5.47	0.05	13.60	0.05	13.40	0.05	mg/L	~
Total Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Cesium	0.00002	0.00001	<0.00001	0.00001	0.00001	0.00001	mg/L	~
Total Chromium	0.0009	0.0001	0.0007	0.0001	0.0009	0.0001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 517852

Sample Description	MARLk	MATR - 01	MATR - 02				
Sample Date	10/31/2023 10:50 AM	11/1/2023 12:50 PM	11/1/2023 1:40 PM				
Lab ID	1948016	1948017	1948018				
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Cobalt	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0009
Total Copper	0.0009	0.0002	0.0010	0.0002	0.0014	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.6	0.1	0.29	0.01	0.33	0.01	mg/L	0.3
Total Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00072	0.00005	0.00010	0.00005	0.00019	0.00005	mg/L	0.001
Total Lithium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Magnesium	1.530	0.004	3.330	0.004	3.290	0.004	mg/L	~
Total Manganese	0.0833	0.0001	0.0191	0.0001	0.0196	0.0001	mg/L	~
Total Mercury					<0.0001	0.0001	mg/L	0.0002
Total Molybdenum	<0.00005	0.00005	0.00008	0.00005	0.00016	0.00005	mg/L	0.04
Total Nickel	0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.24	0.05	0.37	0.05	0.40	0.05	mg/L	~
Total Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	0.0010	0.0002	0.0010	0.0002	0.0010	0.0002	mg/L	~
Total Scandium	<0.001	0.001	0.001	0.001	0.001	0.001	mg/L	~
Total Selenium	0.00013	0.00005	0.00015	0.00005	0.00007	0.00005	mg/L	0.1
Total Silicon	1.22	0.05	2.56	0.05	2.60	0.05	mg/L	~
Total Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0001
Total Sodium	0.41	0.05	1.88	0.05	1.97	0.05	mg/L	~
Total Strontium	0.0105	0.0002	0.0211	0.0002	0.0206	0.0002	mg/L	~
Total Sulphur	1.3	0.5	2.7	0.5	2.7	0.5	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 517852

Sample Description	MARLk		MATR - 01		MATR - 02			
Sample Date	10/31/2023 10:50 AM		11/1/2023 12:50 PM		11/1/2023 1:40 PM			
Lab ID	1948016		1948017		1948018			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Total Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0003
Total Thorium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Total Tin	0.0002	0.0001	0.0002	0.0001	0.0002	0.0001	mg/L	~
Total Titanium	0.0075	0.0003	0.0029	0.0003	0.0040	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00004	0.00001	0.00005	0.00001	0.00006	0.00001	mg/L	0.005
Total Vanadium	0.0008	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.007	0.001	0.004	0.001	0.004	0.001	mg/L	0.02
Total Zirconium	0.0006	0.0002	0.0004	0.0002	0.0004	0.0002	mg/L	0.004

Sample Description	MARLk		MATR - 01			
Sample Date	10/31/2023 10:50 AM		11/1/2023 12:50 PM			
Lab ID	1948016		1948017			
MethylMercury	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.11 [0.10]	0.02	0.14	0.02	ng/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 517852

Sample Description	MARLk		MATR - 01		MATR - 02			
Sample Date	10/31/2023 10:50 AM		11/1/2023 12:50 PM		11/1/2023 1:40 PM			
Lab ID	1948016		1948017		1948018			
Solids	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	75	10	80	10	65	10	mg/L	~
Total Suspended Solids	1.30	0.67	3.00	0.67	4.00	0.67	mg/L	~

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Organic Soil Analysis: Data reported for organic analysis in soils samples are corrected for moisture content.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	519511
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation:	PWQO
		Project #:	Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	David Duciaume
Date Order Received:	11/20/2023	Analysis Started:	11/20/2023
Arrival Temperature:	9 C	Analysis Completed:	12/6/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
NDR.S-04b	1953842	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	11/15/2023	2:50 PM
JCRK-01	1953843	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	11/14/2023	8:45 AM
MATR-REF	1953844	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	11/14/2023	8:55 AM
PRSLK	1953845	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	11/16/2023	3:13 PM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C

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Canada Nickel Company Inc.

Work Order Number: 519511

Method	Lab	Description	Reference
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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Canada Nickel Company Inc.

Work Order Number: 519511

WORK ORDER RESULTS

Sample Description	NDR.S - 04b		JCRK - 01		MATR - REF		PRSLK			
Sample Date	11/15/2023 2:50 PM		11/14/2023 8:45 AM		11/14/2023 8:55 AM		11/16/2023 3:13 PM			
Lab ID	1953842		1953843		1953844		1953845			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	7.7	0.2	2.1	0.2	2.2	0.2	0.5	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	0.2 [0.2]	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	0.04 [0.04]	0.01	0.04	0.01	0.04	0.01	0.04	0.01	mg/L	~
Sulphate	0.6	0.5	3.9	0.5	3.9	0.5	0.8	0.5	mg/L	~

Sample Description	NDR.S - 04b		JCRK - 01		MATR - REF		PRSLK			
Sample Date	11/15/2023 2:50 PM		11/14/2023 8:45 AM		11/14/2023 8:55 AM		11/16/2023 3:13 PM			
Lab ID	1953842		1953843		1953844		1953845			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	7.9	N/A	7.59	N/A	7.53	N/A	7.52	N/A	pH	~
Field Temp	1.87	N/A	2.72	N/A	2.65	N/A	2.78	N/A	°C	~

Sample Description	NDR.S - 04b		JCRK - 01		MATR - REF		PRSLK			
Sample Date	11/15/2023 2:50 PM		11/14/2023 8:45 AM		11/14/2023 8:55 AM		11/16/2023 3:13 PM			
Lab ID	1953842		1953843		1953844		1953845			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	7	5	<5	5	<5	5	7	5	mg/L as CaCO3	~
Ammonia (as N)	0.09	0.05	0.023 [0.022]	0.005	0.024	0.005	0.05	0.05	mg/L	~
Conductivity	95	1	96	1	95	1	107	1	µS/cm	~

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Canada Nickel Company Inc.

Work Order Number: 519511

Sample Description	NDR.S - 04b		JCRK - 01		MATR - REF		PRSLK			
Sample Date	11/15/2023 2:50 PM		11/14/2023 8:45 AM		11/14/2023 8:55 AM		11/16/2023 3:13 PM			
Lab ID	1953842		1953843		1953844		1953845			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Organic Carbon	41 [42]	2	13.9	0.4	<0.4	0.4	30	2	mg/L	~
Free Cyanide	0.002	0.001	<0.001	0.001			<0.001	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	30	2	41	2	40	2	56	2	mg/L as CaCO3	~
pH	6.88	N/A	7.37	N/A	7.34	N/A	7.12	N/A	pH	~
Strong Acid Dissociable Cyanide	0.007	0.002	0.006	0.002			0.004	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	44.0	0.1	46.3	0.1	46.4	0.1	60.7	0.1	mg/L	~
Total Phosphorus (as P)	0.019	0.002	0.008	0.002	0.008	0.002	0.030	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.004	0.001	0.003	0.001			0.003	0.001	mg/L	~

Sample Description	NDR.S - 04b		JCRK - 01		PRSLK			
Sample Date	11/15/2023 2:50 PM		11/14/2023 8:45 AM		11/16/2023 3:13 PM			
Lab ID	1953842		1953843		1953845			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	5.47	0.01	2.18	0.01	4.66	0.01	ng/L	200

Sample Description	NDR.S - 04b		JCRK - 01		PRSLK			
Sample Date	11/15/2023 2:50 PM		11/14/2023 8:45 AM		11/16/2023 3:13 PM			
Lab ID	1953842		1953843		1953845			
Mercury by CV	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01	0.01	<0.01	0.01	ug/L	0.2

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Work Order Number: 519511

Sample Description	NDR.S - 04b		JCRK - 01		MATR - REF		PRSLK			
Sample Date	11/15/2023 2:50 PM		11/14/2023 8:45 AM		11/14/2023 8:55 AM		11/16/2023 3:13 PM			
Lab ID	1953842		1953843		1953844		1953845			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.146	0.001	0.043 [0.044]	0.001	0.043	0.001	0.150	0.001	mg/L	~

Sample Description	NDR.S - 04b		JCRK - 01		MATR - REF		PRSLK			
Sample Date	11/15/2023 2:50 PM		11/14/2023 8:45 AM		11/14/2023 8:55 AM		11/16/2023 3:13 PM			
Lab ID	1953842		1953843		1953844		1953845			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Antimony	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Arsenic	0.0007	0.0001	0.0004 [0.0003]	0.0001	0.0003	0.0001	0.0005	0.0001	mg/L	~
Dissolved Barium	0.0052	0.0001	0.0047 [0.0045]	0.0001	0.0047	0.0001	0.0094	0.0001	mg/L	~
Dissolved Beryllium	<0.00002	0.00002	<0.00002 [<0.00002]	0.00002	<0.00002	0.00002	<0.00002	0.00002	mg/L	~
Dissolved Bismuth	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Boron	0.002	0.002	0.006 [0.006]	0.002	0.006	0.002	0.005	0.002	mg/L	~
Dissolved Cadmium	0.000030	0.000005	0.000010 [0.000009]	0.000005	0.000020	0.000005	0.000020	0.000005	mg/L	~
Dissolved Calcium	11.90	0.05	13.20 [12.90]	0.05	13.00	0.05	17.50	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0007	0.0001	0.0005 [0.0005]	0.0001	0.0005	0.0001	0.0010	0.0001	mg/L	~
Dissolved Cobalt	0.0001	0.0001	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 519511

Sample Description	NDR.S - 04b		JCRK - 01		MATR - REF		PRSLK			
Sample Date	11/15/2023 2:50 PM		11/14/2023 8:45 AM		11/14/2023 8:55 AM		11/16/2023 3:13 PM			
Lab ID	1953842		1953843		1953844		1953845			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Copper	0.0023	0.0002	0.0017 [0.0016]	0.0002	0.0014	0.0002	0.0015	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.50	0.01	0.18 [0.18]	0.01	0.18	0.01	0.56	0.01	mg/L	~
Dissolved Lanthanum	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	0.00014	0.00005	<0.00005 [<0.00005]	0.00005	<0.00005	0.00005	0.00014	0.00005	mg/L	~
Dissolved Lithium	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Magnesium	3.270	0.004	3.170 [3.120]	0.004	3.140	0.004	4.250	0.004	mg/L	~
Dissolved Manganese	0.0465	0.0001	0.0094 [0.0092]	0.0001	0.0092	0.0001	0.0464	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00006	0.00005	0.00010 [0.00009]	0.00005	0.00038	0.00005	0.00013	0.00005	mg/L	~
Dissolved Nickel	0.0005	0.0005	<0.0005 [<0.0005]	0.0005	<0.0005	0.0005	0.0006	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05 [<0.05]	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.18	0.05	0.35 [0.34]	0.05	0.34	0.05	0.46	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	0.0005	0.0002	0.0009 [0.0009]	0.0002	0.0009	0.0002	0.0010	0.0002	mg/L	~

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Sample Description	NDR.S - 04b		JCRK - 01		MATR - REF		PRSLK			
Sample Date	11/15/2023 2:50 PM		11/14/2023 8:45 AM		11/14/2023 8:55 AM		11/16/2023 3:13 PM			
Lab ID	1953842		1953843		1953844		1953845			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Scandium	0.001	0.001	0.001 [0.001]	0.001	0.001	0.001	0.001	0.001	mg/L	~
Dissolved Selenium	0.00013	0.00005	<0.00005 [<0.00005]	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Silicon	1.90	0.05	2.33 [2.26]	0.05	2.29	0.05	2.31	0.05	mg/L	~
Dissolved Silver	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Sodium	5.25	0.05	2.06 [1.99]	0.05	2.03	0.05	1.78	0.05	mg/L	~
Dissolved Strontium	0.0184	0.0002	0.0195 [0.0190]	0.0002	0.0194	0.0002	0.0328	0.0002	mg/L	~
Dissolved Sulfur	<0.5	0.5	1.6 [1.2]	0.5	1.2	0.5	<0.5	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Thallium	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	0.00002	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Tin	0.0002	0.0001	0.0002 [0.0002]	0.0001	0.0002	0.0001	0.0002	0.0001	mg/L	~
Dissolved Titanium	0.0030	0.0003	0.0013 [0.0012]	0.0003	0.0012	0.0003	0.0037	0.0003	mg/L	~
Dissolved Tungsten	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Uranium	0.00003	0.00001	0.00006 [0.00006]	0.00001	0.00006	0.00001	0.00008	0.00001	mg/L	~
Dissolved Vanadium	<0.0005	0.0005	<0.0005 [<0.0005]	0.0005	<0.0005	0.0005	0.0006	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.005	0.001	0.003 [0.003]	0.001	0.002	0.001	0.004	0.001	mg/L	~

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Sample Description	NDR.S - 04b		JCRK - 01		MATR - REF		PRSLK			
Sample Date	11/15/2023 2:50 PM		11/14/2023 8:45 AM		11/14/2023 8:55 AM		11/16/2023 3:13 PM			
Lab ID	1953842		1953843		1953844		1953845			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Zirconium	0.0008	0.0002	0.0004 [0.0004]	0.0002	0.0004	0.0002	0.0008	0.0002	mg/L	~

Sample Description	NDR.S - 04b		JCRK - 01		MATR - REF		PRSLK			
Sample Date	11/15/2023 2:50 PM		11/14/2023 8:45 AM		11/14/2023 8:55 AM		11/16/2023 3:13 PM			
Lab ID	1953842		1953843		1953844		1953845			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.209	0.001	0.100 [0.099]	0.001	0.096	0.001	0.204	0.001	mg/L	0.075
Total Antimony	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.02
Total Arsenic	0.0006	0.0001	0.0004 [0.0003]	0.0001	0.0003	0.0001	0.0005	0.0001	mg/L	0.005
Total Barium	0.0058	0.0001	0.0050 [0.0050]	0.0001	0.0049	0.0001	0.0095	0.0001	mg/L	~
Total Beryllium	<0.00002	0.00002	<0.00002 [<0.00002]	0.00002	<0.00002	0.00002	<0.00002	0.00002	mg/L	0.011
Total Bismuth	<0.00005	0.00005	<0.00005 [<0.00005]	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Total Boron	<0.002	0.002	0.006 [0.005]	0.002	0.008	0.002	0.005	0.002	mg/L	0.2
Total Cadmium	0.000030	0.000005	0.000010 [0.000010]	0.000005	0.000020	0.000005	0.000030	0.000005	mg/L	0.0001
Total Calcium	11.80	0.05	13.00 [13.20]	0.05	12.90	0.05	16.90	0.05	mg/L	~
Total Cerium	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Cesium	<0.00001	0.00001	<0.00001 [0.00001]	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Total Chromium	0.0008	0.0001	0.0005 [0.0005]	0.0001	0.0005	0.0001	0.0007	0.0001	mg/L	~

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Sample Description	NDR.S - 04b		JCRK - 01		MATR - REF		PRSLK			
Sample Date	11/15/2023 2:50 PM		11/14/2023 8:45 AM		11/14/2023 8:55 AM		11/16/2023 3:13 PM			
Lab ID	1953842		1953843		1953844		1953845			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Cobalt	0.0002	0.0001	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	0.0001	0.0001	mg/L	0.0009
Total Copper	0.0017	0.0002	0.0011 [0.0013]	0.0002	0.0010	0.0002	0.0017	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.62	0.01	0.27 [0.26]	0.01	0.26	0.01	0.59	0.01	mg/L	0.3
Total Lanthanum	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00030	0.00005	0.00011 [0.00010]	0.00005	0.00012	0.00005	0.00024	0.00005	mg/L	0.001
Total Lithium	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Magnesium	3.290	0.004	3.190 [3.140]	0.004	3.120	0.004	4.220	0.004	mg/L	~
Total Manganese	0.0704	0.0001	0.0140 [0.0137]	0.0001	0.0133	0.0001	0.0492	0.0001	mg/L	~
Total Mercury					<0.0001	0.0001			mg/L	0.0002
Total Molybdenum	<0.00005	0.00005	0.00009 [0.00008]	0.00005	0.00036	0.00005	0.00008	0.00005	mg/L	0.04
Total Nickel	<0.0005	0.0005	<0.0005 [<0.0005]	0.0005	<0.0005	0.0005	0.0005	0.0005	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.18	0.05	0.36 [0.38]	0.05	0.34	0.05	0.48	0.05	mg/L	~
Total Rhodium	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	0.0006	0.0002	0.0009 [0.0010]	0.0002	0.0009	0.0002	0.0011	0.0002	mg/L	~

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Sample Description	NDR.S - 04b		JCRK - 01		MATR - REF		PRSLK			
Sample Date	11/15/2023 2:50 PM		11/14/2023 8:45 AM		11/14/2023 8:55 AM		11/16/2023 3:13 PM			
Lab ID	1953842		1953843		1953844		1953845			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Scandium	0.001	0.001	0.001 [0.001]	0.001	0.001	0.001	0.001	0.001	mg/L	~
Total Selenium	0.00013	0.00005	<0.00005 [0.00006]	0.00005	0.00006	0.00005	<0.00005	0.00005	mg/L	0.1
Total Silicon	1.94	0.05	2.36 [2.36]	0.05	2.29	0.05	2.28	0.05	mg/L	~
Total Silver	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0001
Total Sodium	5.10	0.05	2.12 [2.09]	0.05	1.97	0.05	1.77	0.05	mg/L	~
Total Strontium	0.0184	0.0002	0.0192 [0.0194]	0.0002	0.0187	0.0002	0.0326	0.0002	mg/L	~
Total Sulphur	<0.5	0.5	1.4 [1.2]	0.5	0.9	0.5	<0.5	0.5	mg/L	~
Total Tellurium	<0.0002	0.0002	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Total Thallium	<0.00001	0.00001	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0003
Total Thorium	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Total Tin	0.0004	0.0001	0.0003 [0.0003]	0.0001	0.0003	0.0001	0.0003	0.0001	mg/L	~
Total Titanium	0.0052	0.0003	0.0029 [0.0032]	0.0003	0.0029	0.0003	0.0050	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00004	0.00001	0.00006 [0.00006]	0.00001	0.00006	0.00001	0.00008	0.00001	mg/L	0.005
Total Vanadium	0.0006	0.0005	<0.0005 [<0.0005]	0.0005	<0.0005	0.0005	0.0006	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.006	0.001	0.004 [0.004]	0.001	0.003	0.001	0.005	0.001	mg/L	0.02

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Sample Description	NDR.S - 04b		JCRK - 01		MATR - REF		PRSLK			
Sample Date	11/15/2023 2:50 PM		11/14/2023 8:45 AM		11/14/2023 8:55 AM		11/16/2023 3:13 PM			
Lab ID	1953842		1953843		1953844		1953845			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Zirconium	0.0010	0.0002	0.0005 [0.0005]	0.0002	0.0004	0.0002	0.0010	0.0002	mg/L	0.004

Sample Description	NDR.S - 04b		JCRK - 01		PRSLK			
Sample Date	11/15/2023 2:50 PM		11/14/2023 8:45 AM		11/16/2023 3:13 PM			
Lab ID	1953842		1953843		1953845			
MethylMercury	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.20 [0.21]	0.02	0.13	0.02	1.20	0.02	ng/L	~

Sample Description	NDR.S - 04b		JCRK - 01		MATR - REF		PRSLK			
Sample Date	11/15/2023 2:50 PM		11/14/2023 8:45 AM		11/14/2023 8:55 AM		11/16/2023 3:13 PM			
Lab ID	1953842		1953843		1953844		1953845			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	100	10	75	10	95	10	110	10	mg/L	~
Total Suspended Solids	28	1	5.00	0.67	3.00	0.67	18.30	0.67	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 519511

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Organic Soil Analysis: Data reported for organic analysis in soils samples are corrected for moisture content.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

Reproduction of Report: Report shall not be reproduced, except in full, without the approval of Testmark Laboratories Ltd.

ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	519857
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	Adam Gauthier
Date Order Received:	11/21/2023	Analysis Started:	11/22/2023
Arrival Temperature:	12 C	Analysis Completed:	12/13/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
MARLk	1954955	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	11/21/2023	12:10 PM
NDR-S-06	1954956	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	11/21/2023	11:10 AM
JC-S-01	1954957	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	11/21/2023	12:30 PM
JCRK-02	1954958	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	11/21/2023	12:55 PM
SWDup	1954959	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	11/21/2023	

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B

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Method	Lab	Description	Reference
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 519857

WORK ORDER RESULTS

Sample Description	MARLk		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	11/21/2023 12:10 PM		11/21/2023 11:10 AM		11/21/2023 12:30 PM		11/21/2023 12:55 PM			
Lab ID	1954955		1954956		1954957		1954958			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	<0.2	0.2	5.3	0.2	4.9 [4.9]	0.2	0.8	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05 [<0.05]	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	0.2	0.1	0.4	0.1	0.1	0.1	mg/L	~
Nitrite (as N)	0.04	0.01	0.04	0.01	0.04	0.01	0.04	0.01	mg/L	~
Sulphate	<0.5	0.5	0.6	0.5	1.7 [1.6]	0.5	<0.5	0.5	mg/L	~

Sample Description	SWDup			
Sample Date	11/21/2023 12:00 AM			
Lab ID	1954959			
Anions	Result	MDL	Units	Criteria: PWQO
Chloride	5.4	0.2	mg/L	~
Fluoride	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	0.2	0.1	mg/L	~
Nitrite (as N)	0.04	0.01	mg/L	~
Sulphate	0.8	0.5	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 519857

Sample Description	MARLk		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	11/21/2023 12:10 PM		11/21/2023 11:10 AM		11/21/2023 12:30 PM		11/21/2023 12:55 PM			
Lab ID	1954955		1954956		1954957		1954958			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	5.64	N/A	5.71	N/A	4.83	N/A	5.14	N/A	pH	~
Field Temp	0.52	N/A	0.09	N/A	0.1	N/A	0.76	N/A	°C	~

Sample Description	MARLk		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	11/21/2023 12:10 PM		11/21/2023 11:10 AM		11/21/2023 12:30 PM		11/21/2023 12:55 PM			
Lab ID	1954955		1954956		1954957		1954958			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	10	5	8	5	17	5	11	5	mg/L as CaCO3	~
Ammonia (as N)	0.042	0.005	0.058	0.005	0.082	0.005	0.055	0.005	mg/L	~
Conductivity	32	1	80	1	58	1	35	1	µS/cm	~
Dissolved Organic Carbon	35	2	44	2	58	2	43	2	mg/L	~
Free Cyanide	0.007	0.001	0.007	0.001	0.009	0.001	0.006	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	12	2	27	2	11	2	11	2	mg/L as CaCO3	~
pH	6.04	N/A	6.63	N/A	5.52	N/A	5.92	N/A	pH	~
Strong Acid Dissociable Cyanide	0.002	0.002	0.005	0.002	0.004	0.002	0.005 [0.005]	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	21.8	0.1	45.2	0.1	33.4	0.1	23.6	0.1	mg/L	~
Total Phosphorus (as P)	0.015	0.002	0.020	0.002	0.015	0.002	0.023	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.003	0.001	0.003	0.001	0.003	0.001	0.003	0.001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 519857

Sample Description	SWDup
Sample Date	11/21/2023 12:00 AM
Lab ID	1954959

General Chemistry	Result	MDL	Units	Criteria: PWQO
Acidity	8	5	mg/L as CaCO3	~
Ammonia (as N)	0.058	0.005	mg/L	~
Conductivity	81	1	µS/cm	~
Dissolved Organic Carbon	44	2	mg/L	~
Free Cyanide	0.005	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	29	2	mg/L as CaCO3	~
pH	6.67	N/A	pH	~
Strong Acid Dissociable Cyanide	0.004	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	43.5	0.1	mg/L	~
Total Phosphorus (as P)	0.018	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.002	0.001	mg/L	~

Sample Description	MARLk		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	11/21/2023 12:10 PM		11/21/2023 11:10 AM		11/21/2023 12:30 PM		11/21/2023 12:55 PM			
Lab ID	1954955		1954956		1954957		1954958			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	3.06	0.01	3.21	0.01	10.80	0.01	3.89	0.01	ng/L	200

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Canada Nickel Company Inc.

Work Order Number: 519857

Sample Description	SWDup			
Sample Date	11/21/2023 12:00 AM			
Lab ID	1954959			
Mercury (Trace)	Result	MDL	Units	Criteria: PWQO
Total Mercury	4.35	0.01	ng/L	200

Sample Description	MARLk		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	11/21/2023 12:10 PM		11/21/2023 11:10 AM		11/21/2023 12:30 PM		11/21/2023 12:55 PM			
Lab ID	1954955		1954956		1954957		1954958			
Mercury by CV	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01	0.01	0.02	0.01	<0.01	0.01	ug/L	0.2

Sample Description	SWDup			
Sample Date	11/21/2023 12:00 AM			
Lab ID	1954959			
Mercury by CV	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	ug/L	0.2

Sample Description	MARLk		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	11/21/2023 12:10 PM		11/21/2023 11:10 AM		11/21/2023 12:30 PM		11/21/2023 12:55 PM			
Lab ID	1954955		1954956		1954957		1954958			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.122	0.001	0.164	0.001	0.302	0.001	0.237	0.001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 519857

Sample Description	SWDup
Sample Date	11/21/2023 12:00 AM
Lab ID	1954959

Metals (Dissolved - 0.2um)	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.165 [0.166]	0.001	mg/L	~

Sample Description	MARLk		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	11/21/2023 12:10 PM		11/21/2023 11:10 AM		11/21/2023 12:30 PM		11/21/2023 12:55 PM			
Lab ID	1954955		1954956		1954957		1954958			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Antimony	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Arsenic	0.0005	0.0001	0.0007	0.0001	0.0010	0.0001	0.0008	0.0001	mg/L	~
Dissolved Barium	0.0038	0.0001	0.0049	0.0001	0.0058	0.0001	0.0044	0.0001	mg/L	~
Dissolved Beryllium	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	mg/L	~
Dissolved Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Boron	<0.002	0.002	0.003	0.002	<0.002	0.002	0.002	0.002	mg/L	~
Dissolved Cadmium	0.000040	0.000005	0.000020	0.000005	0.000050	0.000005	0.000060	0.000005	mg/L	~
Dissolved Calcium	6.02	0.05	12.10	0.05	9.53	0.05	6.85	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0004	0.0001	0.0007	0.0001	0.0008	0.0001	0.0008	0.0001	mg/L	~
Dissolved Cobalt	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Copper	0.0014	0.0002	0.0004	0.0002	0.0023	0.0002	0.0020	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.46	0.01	0.45	0.01	0.46	0.01	0.52	0.01	mg/L	~
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 519857

Sample Description	MARLk		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	11/21/2023 12:10 PM		11/21/2023 11:10 AM		11/21/2023 12:30 PM		11/21/2023 12:55 PM			
Lab ID	1954955		1954956		1954957		1954958			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Lead	0.00043	0.00005	0.00012	0.00005	0.00029	0.00005	0.00040	0.00005	mg/L	~
Dissolved Lithium	<0.001	0.001	0.001	0.001	0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Magnesium	1.570	0.004	3.520	0.004	2.200	0.004	1.630	0.004	mg/L	~
Dissolved Manganese	0.0365	0.0001	0.0213	0.0001	0.0187	0.0001	0.0339	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00008	0.00005	<0.00005	0.00005	0.00006	0.00005	0.00008	0.00005	mg/L	~
Dissolved Nickel	<0.0005	0.0005	0.0006	0.0005	0.0006	0.0005	0.0006	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.18	0.05	0.16	0.05	<0.05	0.05	0.11	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	0.0006	0.0002	0.0004	0.0002	<0.0002	0.0002	0.0004	0.0002	mg/L	~
Dissolved Scandium	<0.001	0.001	0.001	0.001	0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Selenium	<0.00005	0.00005	0.00013	0.00005	0.00020	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Silicon	0.97	0.05	1.81	0.05	1.95	0.05	1.58	0.05	mg/L	~
Dissolved Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Sodium	0.43	0.05	4.00	0.05	3.18	0.05	0.91	0.05	mg/L	~
Dissolved Strontium	0.0090	0.0002	0.0161	0.0002	0.0136	0.0002	0.0116	0.0002	mg/L	~
Dissolved Sulfur	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Tin	0.0003	0.0001	0.0003	0.0001	0.0003	0.0001	0.0003	0.0001	mg/L	~
Dissolved Titanium	0.0037	0.0003	0.0033	0.0003	0.0033	0.0003	0.0052	0.0003	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 519857

Sample Description	MARLk		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	11/21/2023 12:10 PM		11/21/2023 11:10 AM		11/21/2023 12:30 PM		11/21/2023 12:55 PM			
Lab ID	1954955		1954956		1954957		1954958			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Uranium	0.00004	0.00001	0.00003	0.00001	<0.00001	0.00001	0.00004	0.00001	mg/L	~
Dissolved Vanadium	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.007	0.001	0.004	0.001	0.009	0.001	0.010	0.001	mg/L	~
Dissolved Zirconium	0.0006	0.0002	0.0008	0.0002	0.0009	0.0002	0.0010	0.0002	mg/L	~

Sample Description	SWDup			
Sample Date	11/21/2023 12:00 AM			
Lab ID	1954959			
Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Antimony	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Arsenic	0.0007 [0.0008]	0.0001	mg/L	~
Dissolved Barium	0.0052 [0.0052]	0.0001	mg/L	~
Dissolved Beryllium	<0.00002 [<0.00002]	0.00002	mg/L	~
Dissolved Bismuth	<0.00005 [<0.00005]	0.00005	mg/L	~
Dissolved Boron	0.002 [0.003]	0.002	mg/L	~
Dissolved Cadmium	0.000020 [0.000020]	0.000005	mg/L	~
Dissolved Calcium	12.00 [12.20]	0.05	mg/L	~
Dissolved Cerium	<0.001 [<0.001]	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 519857

Sample Description	SWDup
Sample Date	11/21/2023 12:00 AM
Lab ID	1954959

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Cesium	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Chromium	0.0006 [0.0007]	0.0001	mg/L	~
Dissolved Cobalt	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Copper	0.0011 [0.0010]	0.0002	mg/L	~
Dissolved Europium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Gallium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Iron	0.45 [0.45]	0.01	mg/L	~
Dissolved Lanthanum	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Lead	0.00015 [0.00016]	0.00005	mg/L	~
Dissolved Lithium	0.001 [0.001]	0.001	mg/L	~
Dissolved Magnesium	3.490 [3.520]	0.004	mg/L	~
Dissolved Manganese	0.0213 [0.0212]	0.0001	mg/L	~
Dissolved Mercury	<0.0001 [<0.0001]	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00010 [0.00009]	0.00005	mg/L	~
Dissolved Nickel	<0.0005 [<0.0005]	0.0005	mg/L	~
Dissolved Niobium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Phosphorus	<0.05 [<0.05]	0.05	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 519857

Sample Description	SWDup
Sample Date	11/21/2023 12:00 AM
Lab ID	1954959

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Potassium	0.16 [0.16]	0.05	mg/L	~
Dissolved Rhodium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Rubidium	0.0004 [0.0004]	0.0002	mg/L	~
Dissolved Scandium	<0.001 [0.001]	0.001	mg/L	~
Dissolved Selenium	0.00009 [0.00014]	0.00005	mg/L	~
Dissolved Silicon	1.82 [1.82]	0.05	mg/L	~
Dissolved Silver	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Sodium	3.95 [4.00]	0.05	mg/L	~
Dissolved Strontium	0.0160 [0.0160]	0.0002	mg/L	~
Dissolved Sulfur	<0.5 [<0.5]	0.5	mg/L	~
Dissolved Tellurium	<0.0002 [<0.0002]	0.0002	mg/L	~
Dissolved Thallium	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Thorium	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Tin	0.0003 [0.0003]	0.0001	mg/L	~
Dissolved Titanium	0.0033 [0.0033]	0.0003	mg/L	~
Dissolved Tungsten	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Uranium	0.00003 [0.00003]	0.00001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 519857

Sample Description	SWDup
Sample Date	11/21/2023 12:00 AM
Lab ID	1954959

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Vanadium	<0.0005 [<0.0005]	0.0005	mg/L	~
Dissolved Yttrium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Zinc	0.005 [0.005]	0.001	mg/L	~
Dissolved Zirconium	0.0008 [0.0008]	0.0002	mg/L	~

Sample Description	MARLk	NDR - S - 06	JC - S - 01	JCRK - 02
Sample Date	11/21/2023 12:10 PM	11/21/2023 11:10 AM	11/21/2023 12:30 PM	11/21/2023 12:55 PM
Lab ID	1954955	1954956	1954957	1954958

Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.252	0.001	0.314	0.001	0.324	0.001	0.416	0.001	mg/L	0.075
Total Antimony	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.02
Total Arsenic	0.0005	0.0001	0.0008	0.0001	0.0009	0.0001	0.0008	0.0001	mg/L	0.005
Total Barium	0.0041	0.0001	0.0056	0.0001	0.0054	0.0001	0.0054	0.0001	mg/L	~
Total Beryllium	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	mg/L	0.011
Total Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Total Boron	0.002	0.002	0.003	0.002	<0.002	0.002	0.002	0.002	mg/L	0.2
Total Cadmium	0.000040	0.000005	0.000020	0.000005	0.000050	0.000005	0.000060	0.000005	mg/L	0.0001
Total Calcium	6.34	0.05	12.00	0.05	9.55	0.05	6.99	0.05	mg/L	~
Total Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Cesium	0.00002	0.00001	0.00001	0.00001	<0.00001	0.00001	0.00002	0.00001	mg/L	~
Total Chromium	0.0006	0.0001	0.0008	0.0001	0.0008	0.0001	0.0011	0.0001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 519857

Sample Description	MARLk		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	11/21/2023 12:10 PM		11/21/2023 11:10 AM		11/21/2023 12:30 PM		11/21/2023 12:55 PM			
Lab ID	1954955		1954956		1954957		1954958			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Cobalt	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	0.0002	0.0001	mg/L	0.0009
Total Copper	0.0006	0.0002	0.0006	0.0002	0.0011	0.0002	0.0017	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.59	0.01	0.61	0.01	0.49	0.01	0.57	0.01	mg/L	0.3
Total Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00053	0.00005	0.00020	0.00005	0.00028	0.00005	0.00056	0.00005	mg/L	0.001
Total Lithium	<0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	mg/L	~
Total Magnesium	1.690	0.004	3.500	0.004	2.320	0.004	1.710	0.004	mg/L	~
Total Manganese	0.0499	0.0001	0.0294	0.0001	0.0201	0.0001	0.0617	0.0001	mg/L	~
Total Molybdenum	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	0.04
Total Nickel	<0.0005	0.0005	0.0009	0.0005	0.0010	0.0005	0.0007	0.0005	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.20	0.05	0.19	0.05	<0.05	0.05	0.15	0.05	mg/L	~
Total Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	0.0008	0.0002	0.0007	0.0002	<0.0002	0.0002	0.0007	0.0002	mg/L	~
Total Scandium	<0.001	0.001	0.001	0.001	0.001	0.001	<0.001	0.001	mg/L	~
Total Selenium	0.00008	0.00005	0.00013	0.00005	0.00017	0.00005	0.00012	0.00005	mg/L	0.1
Total Silicon	1.13	0.05	1.97	0.05	1.94	0.05	1.78	0.05	mg/L	~
Total Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0001
Total Sodium	0.50	0.05	3.87	0.05	3.20	0.05	0.93	0.05	mg/L	~
Total Strontium	0.0102	0.0002	0.0163	0.0002	0.0137	0.0002	0.0122	0.0002	mg/L	~
Total Sulphur	<0.5	0.5	<0.5	0.5	<0.5	0.5	<0.5	0.5	mg/L	~
Total Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 519857

Sample Description	MARLk		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	11/21/2023 12:10 PM		11/21/2023 11:10 AM		11/21/2023 12:30 PM		11/21/2023 12:55 PM			
Lab ID	1954955		1954956		1954957		1954958			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0003
Total Thorium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Total Tin	0.0004	0.0001	0.0004	0.0001	0.0005	0.0001	0.0004	0.0001	mg/L	~
Total Titanium	0.0079	0.0003	0.0082	0.0003	0.0036	0.0003	0.0109	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00005	0.00001	0.00004	0.00001	0.00001	0.00001	0.00004	0.00001	mg/L	0.005
Total Vanadium	0.0006	0.0005	0.0006	0.0005	<0.0005	0.0005	0.0007	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.007	0.001	0.005	0.001	0.010	0.001	0.011	0.001	mg/L	0.02
Total Zirconium	0.0006	0.0002	0.0008	0.0002	0.0008	0.0002	0.0011	0.0002	mg/L	0.004

Sample Description	SWDup			
Sample Date	11/21/2023 12:00 AM			
Lab ID	1954959			
Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.337 [0.330]	0.001	mg/L	0.075
Total Antimony	<0.0001 [<0.0001]	0.0001	mg/L	0.02
Total Arsenic	0.0007 [0.0008]	0.0001	mg/L	0.005
Total Barium	0.0056 [0.0059]	0.0001	mg/L	~
Total Beryllium	<0.00002 [<0.00002]	0.00002	mg/L	0.011
Total Bismuth	<0.00005 [<0.00005]	0.00005	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 519857

Sample Description	SWDup
Sample Date	11/21/2023 12:00 AM
Lab ID	1954959

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Boron	0.002 [0.002]	0.002	mg/L	0.2
Total Cadmium	0.000020 [0.000020]	0.000005	mg/L	0.0001
Total Calcium	12.00 [12.00]	0.05	mg/L	~
Total Cerium	<0.001 [<0.001]	0.001	mg/L	~
Total Cesium	0.00002 [0.00002]	0.00001	mg/L	~
Total Chromium	0.0008 [0.0009]	0.0001	mg/L	~
Total Cobalt	<0.0001 [<0.0001]	0.0001	mg/L	0.0009
Total Copper	0.0006 [0.0005]	0.0002	mg/L	0.001
Total Europium	<0.001 [<0.001]	0.001	mg/L	~
Total Gallium	<0.001 [<0.001]	0.001	mg/L	~
Total Iron	0.61 [0.61]	0.01	mg/L	0.3
Total Lanthanum	<0.001 [<0.001]	0.001	mg/L	~
Total Lead	0.00020 [0.00023]	0.00005	mg/L	0.001
Total Lithium	0.001 [0.001]	0.001	mg/L	~
Total Magnesium	3.560 [3.520]	0.004	mg/L	~
Total Manganese	0.0276 [0.0284]	0.0001	mg/L	~
Total Molybdenum	<0.00005 [<0.00005]	0.00005	mg/L	0.04

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 519857

Sample Description	SWDup
Sample Date	11/21/2023 12:00 AM
Lab ID	1954959

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Nickel	<0.0005 [<0.0005]	0.0005	mg/L	0.025
Total Niobium	<0.001 [<0.001]	0.001	mg/L	~
Total Potassium	0.20 [0.20]	0.05	mg/L	~
Total Rhodium	<0.001 [<0.001]	0.001	mg/L	~
Total Rubidium	0.0007 [0.0008]	0.0002	mg/L	~
Total Scandium	0.001 [0.001]	0.001	mg/L	~
Total Selenium	0.00014 [0.00017]	0.00005	mg/L	0.1
Total Silicon	2.00 [2.06]	0.05	mg/L	~
Total Silver	<0.00001 [<0.00001]	0.00001	mg/L	0.0001
Total Sodium	3.96 [3.96]	0.05	mg/L	~
Total Strontium	0.0161 [0.0164]	0.0002	mg/L	~
Total Sulphur	<0.5 [<0.5]	0.5	mg/L	~
Total Tellurium	<0.0002 [<0.0002]	0.0002	mg/L	~
Total Thallium	<0.00001 [<0.00001]	0.00001	mg/L	0.0003
Total Thorium	<0.0001 [<0.0001]	0.0001	mg/L	~
Total Tin	0.0004 [0.0004]	0.0001	mg/L	~
Total Titanium	0.0095 [0.0096]	0.0003	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 519857

Sample Description	SWDup
Sample Date	11/21/2023 12:00 AM
Lab ID	1954959

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Tungsten	<0.0001 [<0.0001]	0.0001	mg/L	0.03
Total Uranium	0.00004 [0.00004]	0.00001	mg/L	0.005
Total Vanadium	0.0006 [0.0007]	0.0005	mg/L	0.006
Total Yttrium	<0.001 [<0.001]	0.001	mg/L	~
Total Zinc	0.004 [0.005]	0.001	mg/L	0.02
Total Zirconium	0.0009 [0.0009]	0.0002	mg/L	0.004

Sample Description	MARLk		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	11/21/2023 12:10 PM		11/21/2023 11:10 AM		11/21/2023 12:30 PM		11/21/2023 12:55 PM			
Lab ID	1954955		1954956		1954957		1954958			
MethylMercury	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.74	0.02	0.81	0.02	0.82	0.02	0.10	0.02	ng/L	~

Sample Description	SWDup
Sample Date	11/21/2023 12:00 AM
Lab ID	1954959

MethylMercury	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.17 [0.23]	0.02	ng/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 519857

Sample Description	MARLk		NDR - S - 06		JC - S - 01		JCRK - 02			
Sample Date	11/21/2023 12:10 PM		11/21/2023 11:10 AM		11/21/2023 12:30 PM		11/21/2023 12:55 PM			
Lab ID	1954955		1954956		1954957		1954958			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	95	10	120	10	105	10	115	10	mg/L	~
Total Suspended Solids	1.70	0.67	4.00	0.67	1.00	0.67	3.70	0.67	mg/L	~

Sample Description	SWDup			
Sample Date	11/21/2023 12:00 AM			
Lab ID	1954959			
Solids	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	125	10	mg/L	~
Total Suspended Solids	1.30	0.67	mg/L	~

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Organic Soil Analysis: Data reported for organic analysis in soils samples are corrected for moisture content.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

Reproduction of Report: Report shall not be reproduced, except in full, without the approval of Testmark Laboratories Ltd.

ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	520603
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation:	PWQO
		Project #:	Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	Adam Gauthier
Date Order Received:	11/30/2023	Analysis Started:	11/30/2023
Arrival Temperature:	3 C	Analysis Completed:	12/7/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
NDR-S-02	1957348	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	11/22/2023	10:00 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 520603

Method	Lab	Description	Reference
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

WORK ORDER RESULTS

Sample Description	NDR - S - 02
Sample Date	11/22/2023 10:00 AM
Lab ID	1957348

Anions	Result	MDL	Units	Criteria: PWQO
Chloride	13.2	0.2	mg/L	~
Fluoride	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	0.6	0.1	mg/L	~
Nitrite (as N)	0.03	0.01	mg/L	~
Sulphate	2.8	0.5	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 520603

Sample Description	NDR - S - 02
Sample Date	11/22/2023 10:00 AM
Lab ID	1957348

Field Parameters	Result	MDL	Units	Criteria: PWQO
Field pH	7.78	N/A	pH	~
Field Temp	0.85	N/A	°C	~

Sample Description	NDR - S - 02
Sample Date	11/22/2023 10:00 AM
Lab ID	1957348

General Chemistry	Result	MDL	Units	Criteria: PWQO
Acidity	8	5	mg/L as CaCO3	~
Ammonia (as N)	0.052 [0.052]	0.005	mg/L	~
Conductivity	92	1	µS/cm	~
Dissolved Organic Carbon	29	2	mg/L	~
M-Alkalinity (pH 4.5)	32	2	mg/L as CaCO3	~
pH	6.76	N/A	pH	~
Total Hardness (as CaCO3) (Calc.)	41.5	0.1	mg/L	~
Total Phosphorus (as P)	0.026	0.002	mg/L	~

Sample Description	NDR - S - 02
Sample Date	11/22/2023 10:00 AM
Lab ID	1957348

Metals (Dissolved - 0.2um)	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.17 [0.175]	0.01	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 520603

Sample Description	NDR - S - 02
Sample Date	11/22/2023 10:00 AM
Lab ID	1957348

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Antimony	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Arsenic	0.0007 [0.0007]	0.0001	mg/L	~
Dissolved Barium	0.0055 [0.0055]	0.0001	mg/L	~
Dissolved Beryllium	<0.00002 [<0.00002]	0.00002	mg/L	~
Dissolved Bismuth	<0.00005 [<0.00005]	0.00005	mg/L	~
Dissolved Boron	0.003 [0.003]	0.002	mg/L	~
Dissolved Cadmium	0.000020 [0.000020]	0.000005	mg/L	~
Dissolved Calcium	11.90 [11.80]	0.05	mg/L	~
Dissolved Cerium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Cesium	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Chromium	0.0014 [0.0012]	0.0001	mg/L	~
Dissolved Cobalt	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Copper	0.0027 [0.0028]	0.0002	mg/L	~
Dissolved Europium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Gallium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Iron	0.49 [0.50]	0.01	mg/L	~
Dissolved Lanthanum	<0.001 [<0.001]	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 520603

Sample Description	NDR - S - 02
Sample Date	11/22/2023 10:00 AM
Lab ID	1957348

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Lead	0.00013 [0.00013]	0.00005	mg/L	~
Dissolved Lithium	0.001 [0.001]	0.001	mg/L	~
Dissolved Magnesium	2.800 [2.810]	0.004	mg/L	~
Dissolved Manganese	0.0239 [0.0241]	0.0001	mg/L	~
Dissolved Mercury	<0.0001 [<0.0001]	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00008 [0.00008]	0.00005	mg/L	~
Dissolved Nickel	0.0006 [0.0007]	0.0005	mg/L	~
Dissolved Niobium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Phosphorus	<0.05 [<0.05]	0.05	mg/L	~
Dissolved Potassium	0.15 [0.16]	0.05	mg/L	~
Dissolved Rhodium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Rubidium	0.0004 [0.0004]	0.0002	mg/L	~
Dissolved Scandium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Selenium	0.00017 [0.00019]	0.00005	mg/L	~
Dissolved Silicon	1.84 [1.81]	0.05	mg/L	~
Dissolved Silver	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Sodium	3.20 [3.21]	0.05	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 520603

Sample Description	NDR - S - 02
Sample Date	11/22/2023 10:00 AM
Lab ID	1957348

Metals (Dissolved)	Result	MDL	Units	Criteria: PWQO
Dissolved Strontium	0.0180 [0.0182]	0.0002	mg/L	~
Dissolved Sulfur	1.1 [1.4]	0.5	mg/L	~
Dissolved Tellurium	<0.0002 [<0.0002]	0.0002	mg/L	~
Dissolved Thallium	<0.00001 [<0.00001]	0.00001	mg/L	~
Dissolved Thorium	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Tin	0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Titanium	0.0027 [0.0027]	0.0003	mg/L	~
Dissolved Tungsten	<0.0001 [<0.0001]	0.0001	mg/L	~
Dissolved Uranium	0.00003 [0.00003]	0.00001	mg/L	~
Dissolved Vanadium	0.0006 [0.0005]	0.0005	mg/L	~
Dissolved Yttrium	<0.001 [<0.001]	0.001	mg/L	~
Dissolved Zinc	0.005 [0.005]	0.001	mg/L	~
Dissolved Zirconium	0.0009 [0.0009]	0.0002	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 520603

Sample Description	NDR - S - 02
Sample Date	11/22/2023 10:00 AM
Lab ID	1957348

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.216 [0.209]	0.001	mg/L	0.075
Total Antimony	<0.0001 [<0.0001]	0.0001	mg/L	0.02
Total Arsenic	0.0007 [0.0007]	0.0001	mg/L	0.005
Total Barium	0.0057 [0.0057]	0.0001	mg/L	~
Total Beryllium	<0.00002 [<0.00002]	0.00002	mg/L	0.011
Total Bismuth	<0.00005 [<0.00005]	0.00005	mg/L	~
Total Boron	0.002 [0.002]	0.002	mg/L	0.2
Total Cadmium	0.000030 [0.000030]	0.000005	mg/L	0.0001
Total Calcium	11.70 [12.10]	0.05	mg/L	~
Total Cerium	<0.001 [<0.001]	0.001	mg/L	~
Total Cesium	<0.00001 [<0.00001]	0.00001	mg/L	~
Total Chromium	0.0011 [0.0010]	0.0001	mg/L	~
Total Cobalt	<0.0001 [<0.0001]	0.0001	mg/L	0.0009
Total Copper	0.0028 [0.0031]	0.0002	mg/L	0.001
Total Europium	<0.001 [<0.001]	0.001	mg/L	~
Total Gallium	<0.001 [<0.001]	0.001	mg/L	~
Total Iron	0.55 [0.55]	0.01	mg/L	0.3

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 520603

Sample Description	NDR - S - 02
Sample Date	11/22/2023 10:00 AM
Lab ID	1957348

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Lanthanum	<0.001 [<0.001]	0.001	mg/L	~
Total Lead	0.00019 [0.00019]	0.00005	mg/L	0.001
Total Lithium	0.001 [0.001]	0.001	mg/L	~
Total Magnesium	2.890 [2.810]	0.004	mg/L	~
Total Manganese	0.0293 [0.0299]	0.0001	mg/L	~
Total Mercury	<0.0001 [<0.0001]	0.0001	mg/L	0.0002
Total Molybdenum	0.00008 [0.00006]	0.00005	mg/L	0.04
Total Nickel	<0.0005 [<0.0005]	0.0005	mg/L	0.025
Total Niobium	<0.001 [<0.001]	0.001	mg/L	~
Total Potassium	0.16 [0.15]	0.05	mg/L	~
Total Rhodium	<0.001 [<0.001]	0.001	mg/L	~
Total Rubidium	0.0004 [0.0004]	0.0002	mg/L	~
Total Scandium	<0.001 [<0.001]	0.001	mg/L	~
Total Selenium	0.00025 [0.00015]	0.00005	mg/L	0.1
Total Silicon	1.98 [1.96]	0.05	mg/L	~
Total Silver	<0.00001 [<0.00001]	0.00001	mg/L	0.0001
Total Sodium	3.24 [3.27]	0.05	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 520603

Sample Description	NDR - S - 02
Sample Date	11/22/2023 10:00 AM
Lab ID	1957348

Metals (Total)	Result	MDL	Units	Criteria: PWQO
Total Strontium	0.0178 [0.0180]	0.0002	mg/L	~
Total Sulphur	1.2 [1.4]	0.5	mg/L	~
Total Tellurium	<0.0002 [<0.0002]	0.0002	mg/L	~
Total Thallium	<0.00001 [<0.00001]	0.00001	mg/L	0.0003
Total Thorium	<0.0001 [<0.0001]	0.0001	mg/L	~
Total Tin	0.0001 [<0.0001]	0.0001	mg/L	~
Total Titanium	0.0043 [0.0041]	0.0003	mg/L	~
Total Tungsten	<0.0001 [<0.0001]	0.0001	mg/L	0.03
Total Uranium	0.00003 [0.00003]	0.00001	mg/L	0.005
Total Vanadium	0.0006 [0.0006]	0.0005	mg/L	0.006
Total Yttrium	<0.001 [<0.001]	0.001	mg/L	~
Total Zinc	0.005 [0.005]	0.001	mg/L	0.02
Total Zirconium	0.0009 [0.0009]	0.0002	mg/L	0.004

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 520603

Sample Description	NDR - S - 02
Sample Date	11/22/2023 10:00 AM
Lab ID	1957348

Solids	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	95	10	mg/L	~
Total Suspended Solids	3.70	0.67	mg/L	~

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Organic Soil Analysis: Data reported for organic analysis in soils samples are corrected for moisture content.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	520817
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	DD/ JP
Date Order Received:	12/4/2023	Analysis Started:	12/5/2023
Arrival Temperature:	7 C	Analysis Completed:	12/20/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
MATR-02	1958005	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	12/4/2023	9:10 AM
WBR-S-Ref	1958006	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	12/4/2023	2:00 PM
WBR-S-04	1958007	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	12/4/2023	12:10 PM
WBR-P-03	1958008	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	12/4/2023	12:30 PM
WBR-P-04	1958009	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	12/4/2023	12:55 PM
PC-01	1958010	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	12/4/2023	2:05 PM
WBR-S-07	1958011	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	12/4/2023	11:25 AM
SWDup	1958012	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	12/4/2023	

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179

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Canada Nickel Company Inc.

Work Order Number: 520817

Method	Lab	Description	Reference
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Asbestos (Sub)	Subcontracted	Determination of Asbestos Fibers by Polarized Light Microscopy	Subcontracted
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
PAH Water SIM (A41)	Garson	Determination of PAH in Water by GC/MS	Modified from SW846-8270D
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Ra226 (A129)	Garson	Determination of Radium-226 in Water	In-House
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

REPORT COMMENTS

The reported cyanide results are within acceptable quality control limits and have been reviewed for accuracy in relation to the laboratory blank.

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 520817

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

WORK ORDER RESULTS

Sample Description	MATR - 02		WBR - S - Ref		WBR - S - 04		WBR - P - 03			
Sample Date	12/4/2023 9:10 AM		12/4/2023 2:00 PM		12/4/2023 12:10 PM		12/4/2023 12:30 PM			
Lab ID	1958005		1958006		1958007		1958008			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	1.6	0.2	0.6	0.2	0.3	0.2	0.3	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1 [<0.1]	0.1	0.5	0.1	0.3	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	0.04 [0.04]	0.01	0.05	0.01	0.04	0.01	0.04	0.01	mg/L	~
Sulphate	3.2	0.5	2.4	0.5	0.7	0.5	<0.5	0.5	mg/L	~

Sample Description	WBR - P - 04		PC - 01		WBR - S - 07		SWDup			
Sample Date	12/4/2023 12:55 PM		12/4/2023 2:05 PM		12/4/2023 11:25 AM		12/4/2023 12:00 AM			
Lab ID	1958009		1958010		1958011		1958012			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	0.4	0.2	0.5	0.2	0.5	0.2	0.4	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	0.2	0.1	0.2	0.1	0.5	0.1	0.5	0.1	mg/L	~
Nitrite (as N)	0.04	0.01	0.04	0.01	0.04	0.01	0.04	0.01	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 520817

Sample Description	WBR - P - 04		PC - 01		WBR - S - 07		SWDup			
Sample Date	12/4/2023 12:55 PM		12/4/2023 2:05 PM		12/4/2023 11:25 AM		12/4/2023 12:00 AM			
Lab ID	1958009		1958010		1958011		1958012			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Sulphate	<0.5	0.5	1.2	0.5	1.4	0.5	1.4	0.5	mg/L	~

Sample Description	MATR - 02		WBR - S - Ref		WBR - S - 04		WBR - P - 03			
Sample Date	12/4/2023 9:10 AM		12/4/2023 2:00 PM		12/4/2023 12:10 PM		12/4/2023 12:30 PM			
Lab ID	1958005		1958006		1958007		1958008			
Asbestos	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Asbestos, Chrysotile	ND	0.5	ND	0.5	ND	0.5	ND	0.5	%	~

Sample Description	WBR - P - 04		PC - 01		WBR - S - 07			
Sample Date	12/4/2023 12:55 PM		12/4/2023 2:05 PM		12/4/2023 11:25 AM			
Lab ID	1958009		1958010		1958011			
Asbestos	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Asbestos, Chrysotile	ND	0.5	ND	0.5	ND	0.5	%	~

Sample Description	MATR - 02		WBR - S - Ref		WBR - S - 04		WBR - P - 03			
Sample Date	12/4/2023 9:10 AM		12/4/2023 2:00 PM		12/4/2023 12:10 PM		12/4/2023 12:30 PM			
Lab ID	1958005		1958006		1958007		1958008			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	5.48	N/A	6.21	N/A	5.06	N/A	4.77	N/A	pH	~
Field Temp	0.27	N/A	0.34	N/A	0.75	N/A	0.6	N/A	°C	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 520817

Sample Description	WBR - P - 04		PC - 01		WBR - S - 07			
Sample Date	12/4/2023 12:55 PM		12/4/2023 2:05 PM		12/4/2023 11:25 AM			
Lab ID	1958009		1958010		1958011			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	4.5	N/A	6.42	N/A	6.67	N/A	pH	~
Field Temp	0.56	N/A	0.16	N/A	0.37	N/A	°C	~

Sample Description	MATR - 02		WBR - S - Ref		WBR - S - 04		WBR - P - 03			
Sample Date	12/4/2023 9:10 AM		12/4/2023 2:00 PM		12/4/2023 12:10 PM		12/4/2023 12:30 PM			
Lab ID	1958005		1958006		1958007		1958008			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	<5	5	5	5	23	5	12	5	mg/L as CaCO3	~
Ammonia (as N)	0.021 [0.021]	0.005	0.108	0.005	0.077	0.005	0.073	0.005	mg/L	~
Conductivity	105	1	64	1	47	1	47	1	µS/cm	~
Dissolved Organic Carbon	13.8	0.4	40	2	48	2	51	2	mg/L	~
Free Cyanide	0.002 [0.002]	0.001	0.002	0.001	0.003 [0.004]	0.001	0.003	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	46	2	21	2	17	2	11	2	mg/L as CaCO3	~
pH	7.57	N/A	6.83	N/A	5.91	N/A	5.96	N/A	pH	~
Strong Acid Dissociable Cyanide	<0.002 [<0.002]	0.002	<0.002	0.002	<0.002	0.002	<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	47.2	0.1	34.6	0.1	29.7	0.1	24.6	0.1	mg/L	~
Total Phosphorus (as P)	0.012 [0.012]	0.002	0.024	0.002	0.019	0.002	0.016	0.002	mg/L	~
Weak Acid Dissociable Cyanide	<0.001	0.001	0.003	0.001	0.004 [0.003]	0.001	0.004	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 520817

Sample Description	WBR - P - 04		PC - 01		WBR - S - 07		SWDup			
Sample Date	12/4/2023 12:55 PM		12/4/2023 2:05 PM		12/4/2023 11:25 AM		12/4/2023 12:00 AM			
Lab ID	1958009		1958010		1958011		1958012			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	15	5	10	5	12	5	6	5	mg/L as CaCO3	~
Ammonia (as N)	0.061	0.005	0.056	0.005	0.106	0.005	0.107	0.005	mg/L	~
Conductivity	36	1	92	1	74	1	81	1	µS/cm	~
Dissolved Organic Carbon	51	2	42 [42]	2	44	2	44	2	mg/L	~
Free Cyanide	0.004	0.001	0.003	0.001	0.004	0.001			mg/L	0.005
M-Alkalinity (pH 4.5)	3	2	42	2	31	2	34	2	mg/L as CaCO3	~
pH	4.73	N/A	6.82	N/A	6.5	N/A	6.96	N/A	pH	~
Strong Acid Dissociable Cyanide	<0.002	0.002	0.002	0.002	0.002	0.002			mg/L	~
Total Hardness (as CaCO3) (Calc.)	17.1	0.1	55.8	0.1	44.9	0.1	44.2	0.1	mg/L	~
Total Phosphorus (as P)	0.013	0.002	0.026	0.002	0.030	0.002	0.028 [0.027]	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.004	0.001	0.003	0.001	0.003	0.001			mg/L	~

Sample Description	MATR - 02		WBR - S - Ref		WBR - S - 04		WBR - P - 03			
Sample Date	12/4/2023 9:10 AM		12/4/2023 2:00 PM		12/4/2023 12:10 PM		12/4/2023 12:30 PM			
Lab ID	1958005		1958006		1958007		1958008			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	1.94	0.01	4.66	0.01	3.61	0.01	2.92	0.01	ng/L	200

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Canada Nickel Company Inc.

Work Order Number: 520817

Sample Description	WBR - P - 04		PC - 01		WBR - S - 07			
Sample Date	12/4/2023 12:55 PM		12/4/2023 2:05 PM		12/4/2023 11:25 AM			
Lab ID	1958009		1958010		1958011			
Mercury (Trace)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	4.38	0.01	5.94	0.01	4.68	0.01	ng/L	200

Sample Description	MATR - 02		WBR - S - Ref		WBR - S - 04		WBR - P - 03			
Sample Date	12/4/2023 9:10 AM		12/4/2023 2:00 PM		12/4/2023 12:10 PM		12/4/2023 12:30 PM			
Lab ID	1958005		1958006		1958007		1958008			
Mercury by CV	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	ug/L	0.2

Sample Description	WBR - P - 04		PC - 01		WBR - S - 07			
Sample Date	12/4/2023 12:55 PM		12/4/2023 2:05 PM		12/4/2023 11:25 AM			
Lab ID	1958009		1958010		1958011			
Mercury by CV	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01 [<0.01]	0.01	<0.01	0.01	ug/L	0.2

Sample Description	MATR - 02		WBR - S - Ref		WBR - S - 04		WBR - P - 03			
Sample Date	12/4/2023 9:10 AM		12/4/2023 2:00 PM		12/4/2023 12:10 PM		12/4/2023 12:30 PM			
Lab ID	1958005		1958006		1958007		1958008			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.045 [0.046]	0.001	0.253	0.001	0.237	0.001	0.215	0.001	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 520817

Sample Description	WBR - P - 04		PC - 01		WBR - S - 07		SWDup			
Sample Date	12/4/2023 12:55 PM		12/4/2023 2:05 PM		12/4/2023 11:25 AM		12/4/2023 12:00 AM			
Lab ID	1958009		1958010		1958011		1958012			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.150	0.001	0.253	0.001	0.231	0.001	0.227	0.001	mg/L	~

Sample Description	MATR - 02		WBR - S - Ref		WBR - S - 04		WBR - P - 03			
Sample Date	12/4/2023 9:10 AM		12/4/2023 2:00 PM		12/4/2023 12:10 PM		12/4/2023 12:30 PM			
Lab ID	1958005		1958006		1958007		1958008			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Antimony	<0.0001 [<0.0001]	0.0001	0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Arsenic	0.0004 [0.0004]	0.0001	0.0009	0.0001	0.0008	0.0001	0.0008	0.0001	mg/L	~
Dissolved Barium	0.0058 [0.0056]	0.0001	0.0065	0.0001	0.0060	0.0001	0.0052	0.0001	mg/L	~
Dissolved Beryllium	<0.00002 [<0.00002]	0.00002	0.00003	0.00002	<0.00002	0.00002	<0.00002	0.00002	mg/L	~
Dissolved Bismuth	<0.00005 [<0.00005]	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Boron	0.006 [0.006]	0.002	0.006	0.002	<0.002	0.002	<0.002	0.002	mg/L	~
Dissolved Cadmium	0.000010 [0.000010]	0.000005	0.000070	0.000005	0.000050	0.000005	0.000050	0.000005	mg/L	~
Dissolved Calcium	13.80 [13.80]	0.05	9.83	0.05	8.45	0.05	6.87	0.05	mg/L	~
Dissolved Cerium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0037 [0.0037]	0.0001	0.0010	0.0001	0.0009	0.0001	0.0008	0.0001	mg/L	~
Dissolved Cobalt	<0.0001 [<0.0001]	0.0001	0.0001	0.0001	0.0003	0.0001	0.0003	0.0001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 520817

Sample Description	MATR - 02		WBR - S - Ref		WBR - S - 04		WBR - P - 03			
Sample Date	12/4/2023 9:10 AM		12/4/2023 2:00 PM		12/4/2023 12:10 PM		12/4/2023 12:30 PM			
Lab ID	1958005		1958006		1958007		1958008			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Copper	0.0016 [0.0016]	0.0002	0.0028	0.0002	0.0020	0.0002	0.0017	0.0002	mg/L	~
Dissolved Europium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.17 [0.17]	0.01	0.7	0.1	0.7	0.1	0.6	0.1	mg/L	~
Dissolved Lanthanum	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	0.00007 [0.00008]	0.00005	0.00031	0.00005	0.00037	0.00005	0.00040	0.00005	mg/L	~
Dissolved Lithium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Magnesium	3.130 [3.130]	0.004	2.340	0.004	2.130	0.004	1.810	0.004	mg/L	~
Dissolved Manganese	0.0111 [0.0109]	0.0001	0.0345	0.0001	0.1010	0.0001	0.0883	0.0001	mg/L	~
Dissolved Mercury	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00013 [0.00015]	0.00005	0.00109	0.00005	0.00040	0.00005	0.00022	0.00005	mg/L	~
Dissolved Nickel	0.0006 [0.0006]	0.0005	0.0010	0.0005	0.0008	0.0005	0.0007	0.0005	mg/L	~
Dissolved Niobium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05 [<0.05]	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.35 [0.35]	0.05	0.33	0.05	0.14	0.05	0.07	0.05	mg/L	~
Dissolved Rhodium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	0.0008 [0.0008]	0.0002	0.0008	0.0002	0.0005	0.0002	0.0003	0.0002	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 520817

Sample Description	MATR - 02		WBR - S - Ref		WBR - S - 04		WBR - P - 03			
Sample Date	12/4/2023 9:10 AM		12/4/2023 2:00 PM		12/4/2023 12:10 PM		12/4/2023 12:30 PM			
Lab ID	1958005		1958006		1958007		1958008			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Scandium	<0.001 [0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Selenium	<0.00005 [<0.00005]	0.00005	0.00012	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Silicon	2.33 [2.32]	0.05	1.96	0.05	2.04	0.05	2.04	0.05	mg/L	~
Dissolved Silver	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Sodium	1.88 [1.92]	0.05	1.51	0.05	0.76	0.05	0.47	0.05	mg/L	~
Dissolved Strontium	0.0198 [0.0198]	0.0002	0.0195	0.0002	0.0150	0.0002	0.0114	0.0002	mg/L	~
Dissolved Sulfur	1.6 [1.6]	0.5	1.1	0.5	<0.5	0.5	<0.5	0.5	mg/L	~
Dissolved Tellurium	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Thallium	<0.00001 [<0.00001]	0.00001	0.00003	0.00001	0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Thorium	<0.0001 [<0.0001]	0.0001	0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Tin	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Titanium	0.0011 [0.0011]	0.0003	0.0071	0.0003	0.0052	0.0003	0.0039	0.0003	mg/L	~
Dissolved Tungsten	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Uranium	0.00005 [0.00005]	0.00001	0.00005	0.00001	0.00003	0.00001	0.00001	0.00001	mg/L	~
Dissolved Vanadium	<0.0005 [<0.0005]	0.0005	0.0008	0.0005	0.0006	0.0005	0.0005	0.0005	mg/L	~
Dissolved Yttrium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.003 [0.002]	0.001	0.008	0.001	0.008	0.001	0.009	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 520817

Sample Description	MATR - 02		WBR - S - Ref		WBR - S - 04		WBR - P - 03			
Sample Date	12/4/2023 9:10 AM		12/4/2023 2:00 PM		12/4/2023 12:10 PM		12/4/2023 12:30 PM			
Lab ID	1958005		1958006		1958007		1958008			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Zirconium	0.0003 [0.0003]	0.0002	0.0016	0.0002	0.0009	0.0002	0.0006	0.0002	mg/L	~

Sample Description	WBR - P - 04		PC - 01		WBR - S - 07		SWDup			
Sample Date	12/4/2023 12:55 PM		12/4/2023 2:05 PM		12/4/2023 11:25 AM		12/4/2023 12:00 AM			
Lab ID	1958009		1958010		1958011		1958012			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Antimony	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Arsenic	0.0008	0.0001	0.0008	0.0001	0.0009	0.0001	0.0009	0.0001	mg/L	~
Dissolved Barium	0.0042	0.0001	0.0091	0.0001	0.0063	0.0001	0.0069	0.0001	mg/L	~
Dissolved Beryllium	<0.00002	0.00002	<0.00002	0.00002	0.00002	0.00002	<0.00002	0.00002	mg/L	~
Dissolved Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Boron	<0.002	0.002	0.003	0.002	0.003	0.002	0.004	0.002	mg/L	~
Dissolved Cadmium	0.000040	0.000005	0.000050	0.000005	0.000050	0.000005	0.000050	0.000005	mg/L	~
Dissolved Calcium	4.78	0.05	16.70	0.05	11.90	0.05	12.70	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0008	0.0001	0.0011	0.0001	0.0010	0.0001	0.0010	0.0001	mg/L	~
Dissolved Cobalt	0.0001	0.0001	<0.0001	0.0001	0.0002	0.0001	0.0003	0.0001	mg/L	~
Dissolved Copper	0.0019	0.0002	0.0024	0.0002	0.0016	0.0002	0.0023	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.41	0.01	0.64	0.01	0.7	0.1	0.8	0.1	mg/L	~
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 520817

Sample Description	WBR - P - 04		PC - 01		WBR - S - 07		SWDup			
Sample Date	12/4/2023 12:55 PM		12/4/2023 2:05 PM		12/4/2023 11:25 AM		12/4/2023 12:00 AM			
Lab ID	1958009		1958010		1958011		1958012			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Lead	0.00065	0.00005	0.00025	0.00005	0.00025	0.00005	0.00028	0.00005	mg/L	~
Dissolved Lithium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Magnesium	1.210	0.004	3.820	0.004	2.850	0.004	3.050	0.004	mg/L	~
Dissolved Manganese	0.0559	0.0001	0.0292	0.0001	0.0999	0.0001	0.1720	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00016	0.00005	0.00018	0.00005	0.00011	0.00005	0.00014	0.00005	mg/L	~
Dissolved Nickel	0.0005	0.0005	0.0010	0.0005	0.0010	0.0005	0.0009	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	<0.05	0.05	0.33	0.05	0.26	0.05	0.27	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	<0.0002	0.0002	0.0008	0.0002	0.0007	0.0002	0.0007	0.0002	mg/L	~
Dissolved Scandium	<0.001	0.001	0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Selenium	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Silicon	1.74	0.05	2.53	0.05	2.12	0.05	2.21	0.05	mg/L	~
Dissolved Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Sodium	0.47	0.05	1.62	0.05	1.28	0.05	1.27	0.05	mg/L	~
Dissolved Strontium	0.0079	0.0002	0.0315	0.0002	0.0212	0.0002	0.0229	0.0002	mg/L	~
Dissolved Sulfur	<0.5	0.5	0.9	0.5	0.9	0.5	1.1	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Tin	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Titanium	0.0019	0.0003	0.0055	0.0003	0.0064	0.0003	0.0063	0.0003	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 520817

Sample Description	WBR - P - 04		PC - 01		WBR - S - 07		SWDup			
Sample Date	12/4/2023 12:55 PM		12/4/2023 2:05 PM		12/4/2023 11:25 AM		12/4/2023 12:00 AM			
Lab ID	1958009		1958010		1958011		1958012			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Uranium	<0.00001	0.00001	0.00007	0.00001	0.00005	0.00001	0.00005	0.00001	mg/L	~
Dissolved Vanadium	<0.0005	0.0005	0.0007	0.0005	0.0007	0.0005	0.0008	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.008	0.001	0.006	0.001	0.006	0.001	0.007	0.001	mg/L	~
Dissolved Zirconium	0.0004	0.0002	0.0013	0.0002	0.0014	0.0002	0.0014	0.0002	mg/L	~

Sample Description	MATR - 02		WBR - S - Ref		WBR - S - 04		WBR - P - 03			
Sample Date	12/4/2023 9:10 AM		12/4/2023 2:00 PM		12/4/2023 12:10 PM		12/4/2023 12:30 PM			
Lab ID	1958005		1958006		1958007		1958008			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.12 [0.12]	0.01	0.71	0.01	0.381	0.001	0.236	0.001	mg/L	0.075
Total Antimony	<0.0001 [<0.0001]	0.0001	0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.02
Total Arsenic	0.0004 [0.0003]	0.0001	0.0009	0.0001	0.0007	0.0001	0.0007	0.0001	mg/L	0.005
Total Barium	0.0057 [0.0055]	0.0001	0.0087	0.0001	0.0062	0.0001	0.0047	0.0001	mg/L	~
Total Beryllium	<0.00002 [<0.00002]	0.00002	0.00004	0.00002	<0.00002	0.00002	<0.00002	0.00002	mg/L	0.011
Total Bismuth	<0.00005 [<0.00005]	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Total Boron	0.004 [0.004]	0.002	0.006	0.002	<0.002	0.002	<0.002	0.002	mg/L	0.2
Total Cadmium	0.000020 [0.000010]	0.000005	0.000070	0.000005	0.000040	0.000005	0.000040	0.000005	mg/L	0.0001
Total Calcium	13.70 [13.50]	0.05	10.10	0.05	8.29	0.05	6.98	0.05	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 520817

Sample Description	MATR - 02		WBR - S - Ref		WBR - S - 04		WBR - P - 03			
Sample Date	12/4/2023 9:10 AM		12/4/2023 2:00 PM		12/4/2023 12:10 PM		12/4/2023 12:30 PM			
Lab ID	1958005		1958006		1958007		1958008			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Cerium	<0.001 [<0.001]	0.001	0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Cesium	0.00001 [<0.00001]	0.00001	0.00005	0.00001	0.00001	0.00001	<0.00001	0.00001	mg/L	~
Total Chromium	0.0007 [0.0007]	0.0001	0.0018	0.0001	0.0012	0.0001	0.0010	0.0001	mg/L	~
Total Cobalt	0.0001 [<0.0001]	0.0001	0.0003	0.0001	0.0003	0.0001	0.0003	0.0001	mg/L	0.0009
Total Copper	0.0009 [0.0008]	0.0002	0.0025	0.0002	0.0015	0.0002	0.0016	0.0002	mg/L	0.001
Total Europium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.27 [0.26]	0.01	1.0	0.1	0.8	0.1	0.7	0.1	mg/L	0.3
Total Lanthanum	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00008 [0.00008]	0.00005	0.00042	0.00005	0.00038	0.00005	0.00039	0.00005	mg/L	0.001
Total Lithium	<0.001 [<0.001]	0.001	0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Magnesium	3.130 [3.220]	0.004	2.480	0.004	2.140	0.004	1.840	0.004	mg/L	~
Total Manganese	0.0151 [0.0147]	0.0001	0.0428	0.0001	0.1050	0.0001	0.0917	0.0001	mg/L	~
Total Molybdenum	0.00012 [0.00011]	0.00005	0.00020	0.00005	0.00007	0.00005	0.00005	0.00005	mg/L	0.04
Total Nickel	<0.0005 [<0.0005]	0.0005	0.0008	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	0.025
Total Niobium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.35 [0.35]	0.05	0.45	0.05	0.17	0.05	0.08	0.05	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 520817

Sample Description	MATR - 02		WBR - S - Ref		WBR - S - 04		WBR - P - 03			
Sample Date	12/4/2023 9:10 AM		12/4/2023 2:00 PM		12/4/2023 12:10 PM		12/4/2023 12:30 PM			
Lab ID	1958005		1958006		1958007		1958008			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Rhodium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	0.0009 [0.0009]	0.0002	0.0016	0.0002	0.0006	0.0002	0.0003	0.0002	mg/L	~
Total Scandium	0.001 [0.001]	0.001	0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Selenium	0.00016 [0.00018]	0.00005	0.00023	0.00005	0.00017	0.00005	0.00022	0.00005	mg/L	0.1
Total Silicon	2.48 [2.53]	0.05	2.94	0.05	2.29	0.05	2.14	0.05	mg/L	~
Total Silver	0.00001 [0.00001]	0.00001	0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0001
Total Sodium	1.86 [1.87]	0.05	1.56	0.05	0.75	0.05	0.47	0.05	mg/L	~
Total Strontium	0.0194 [0.0194]	0.0002	0.0211	0.0002	0.0151	0.0002	0.0114	0.0002	mg/L	~
Total Sulphur	1.7 [1.6]	0.5	1.2	0.5	<0.5	0.5	0.6	0.5	mg/L	~
Total Tellurium	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Total Thallium	<0.00001 [<0.00001]	0.00001	0.00002	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0003
Total Thorium	<0.0001 [<0.0001]	0.0001	0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Total Tin	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Total Titanium	0.0033 [0.0042]	0.0003	0.0242	0.0003	0.0097	0.0003	0.0043	0.0003	mg/L	~
Total Tungsten	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00006 [0.00006]	0.00001	0.00006	0.00001	0.00003	0.00001	0.00001	0.00001	mg/L	0.005
Total Vanadium	<0.0005 [<0.0005]	0.0005	0.0014	0.0005	0.0008	0.0005	0.0005	0.0005	mg/L	0.006

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 520817

Sample Description	MATR - 02		WBR - S - Ref		WBR - S - 04		WBR - P - 03			
Sample Date	12/4/2023 9:10 AM		12/4/2023 2:00 PM		12/4/2023 12:10 PM		12/4/2023 12:30 PM			
Lab ID	1958005		1958006		1958007		1958008			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Yttrium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.002 [0.002]	0.001	0.007	0.001	0.007	0.001	0.007	0.001	mg/L	0.02
Total Zirconium	0.0004 [0.0004]	0.0002	0.0021	0.0002	0.0009	0.0002	0.0005	0.0002	mg/L	0.004

Sample Description	WBR - P - 04		PC - 01		WBR - S - 07		SWDup			
Sample Date	12/4/2023 12:55 PM		12/4/2023 2:05 PM		12/4/2023 11:25 AM		12/4/2023 12:00 AM			
Lab ID	1958009		1958010		1958011		1958012			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.159	0.001	0.352	0.001	0.580	0.001	0.577	0.001	mg/L	0.075
Total Antimony	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.02
Total Arsenic	0.0007	0.0001	0.0007	0.0001	0.0008	0.0001	0.0008	0.0001	mg/L	0.005
Total Barium	0.0037	0.0001	0.0087	0.0001	0.0084	0.0001	0.0082	0.0001	mg/L	~
Total Beryllium	<0.00002	0.00002	<0.00002	0.00002	0.00002	0.00002	0.00003	0.00002	mg/L	0.011
Total Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Total Boron	<0.002	0.002	<0.002	0.002	0.003	0.002	<0.002	0.002	mg/L	0.2
Total Cadmium	0.000040	0.000005	0.000040	0.000005	0.000050	0.000005	0.000050	0.000005	mg/L	0.0001
Total Calcium	5.05	0.05	16.00	0.05	12.70	0.05	12.50	0.05	mg/L	~
Total Cerium	<0.001	0.001	<0.001	0.001	0.001	0.001	0.001	0.001	mg/L	~
Total Cesium	<0.00001	0.00001	<0.00001	0.00001	0.00003	0.00001	0.00003	0.00001	mg/L	~
Total Chromium	0.0010	0.0001	0.0012	0.0001	0.0016	0.0001	0.0017	0.0001	mg/L	~
Total Cobalt	0.0002	0.0001	0.0001	0.0001	0.0005	0.0001	0.0005	0.0001	mg/L	0.0009
Total Copper	0.0015	0.0002	0.0018	0.0002	0.0020	0.0002	0.0019	0.0002	mg/L	0.001

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 520817

Sample Description	WBR - P - 04		PC - 01		WBR - S - 07		SWDup			
Sample Date	12/4/2023 12:55 PM		12/4/2023 2:05 PM		12/4/2023 11:25 AM		12/4/2023 12:00 AM			
Lab ID	1958009		1958010		1958011		1958012			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.43	0.01	0.6	0.1	1.1	0.1	1.1	0.1	mg/L	0.3
Total Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00060	0.00005	0.00022	0.00005	0.00036	0.00005	0.00037	0.00005	mg/L	0.001
Total Lithium	<0.001	0.001	<0.001	0.001	0.001	0.001	0.001	0.001	mg/L	~
Total Magnesium	1.280	0.004	3.850	0.004	3.230	0.004	3.190	0.004	mg/L	~
Total Manganese	0.0595	0.0001	0.0367	0.0001	0.1910	0.0001	0.1910	0.0001	mg/L	~
Total Mercury							<0.0001	0.0001	mg/L	0.0002
Total Molybdenum	<0.00005	0.00005	0.00007	0.00005	0.00007	0.00005	0.00008	0.00005	mg/L	0.04
Total Nickel	<0.0005	0.0005	0.0008	0.0005	0.0009	0.0005	0.0007	0.0005	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	<0.05	0.05	0.34	0.05	0.34	0.05	0.33	0.05	mg/L	~
Total Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	<0.0002	0.0002	0.0008	0.0002	0.0012	0.0002	0.0012	0.0002	mg/L	~
Total Scandium	<0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	mg/L	~
Total Selenium	0.00022	0.00005	0.00023	0.00005	0.00022	0.00005	0.00019	0.00005	mg/L	0.1
Total Silicon	1.88	0.05	2.67	0.05	2.85	0.05	2.81	0.05	mg/L	~
Total Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0001
Total Sodium	0.53	0.05	1.57	0.05	1.30	0.05	1.28	0.05	mg/L	~
Total Strontium	0.0088	0.0002	0.0299	0.0002	0.0232	0.0002	0.0234	0.0002	mg/L	~
Total Sulphur	<0.5	0.5	1.1	0.5	1.0	0.5	1.0	0.5	mg/L	~
Total Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Total Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0003

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 520817

Sample Description	WBR - P - 04		PC - 01		WBR - S - 07		SWDup			
Sample Date	12/4/2023 12:55 PM		12/4/2023 2:05 PM		12/4/2023 11:25 AM		12/4/2023 12:00 AM			
Lab ID	1958009		1958010		1958011		1958012			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Thorium	<0.0001	0.0001	<0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	mg/L	~
Total Tin	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Total Titanium	0.0021	0.0003	0.0083	0.0003	0.0167	0.0003	0.0174	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	<0.00001	0.00001	0.00007	0.00001	0.00006	0.00001	0.00006	0.00001	mg/L	0.005
Total Vanadium	<0.0005	0.0005	0.0008	0.0005	0.0012	0.0005	0.0012	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.007	0.001	0.017	0.001	0.008	0.001	0.006	0.001	mg/L	0.02
Total Zirconium	0.0003	0.0002	0.0012	0.0002	0.0016	0.0002	0.0015	0.0002	mg/L	0.004

Sample Description	MATR - 02		WBR - S - Ref		WBR - S - 04		WBR - P - 03			
Sample Date	12/4/2023 9:10 AM		12/4/2023 2:00 PM		12/4/2023 12:10 PM		12/4/2023 12:30 PM			
Lab ID	1958005		1958006		1958007		1958008			
MethylMercury	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.10	0.02	0.10	0.02	0.09	0.02	0.08	0.02	ng/L	~

Sample Description	WBR - P - 04		PC - 01		WBR - S - 07			
Sample Date	12/4/2023 12:55 PM		12/4/2023 2:05 PM		12/4/2023 11:25 AM			
Lab ID	1958009		1958010		1958011			
MethylMercury	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.13	0.02	0.29	0.02	0.24	0.02	ng/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 520817

Sample Description	MATR - 02		WBR - S - Ref		WBR - S - 04		WBR - P - 03			
Sample Date	12/4/2023 9:10 AM		12/4/2023 2:00 PM		12/4/2023 12:10 PM		12/4/2023 12:30 PM			
Lab ID	1958005		1958006		1958007		1958008			
PAH	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
1+2-Methylnaphthalene (Calc.)	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	ug/L	~
1-Methylnaphthalene	<0.04	0.04	<0.04	0.04	<0.04	0.04	<0.03	0.03	ug/L	2
2-Methylnaphthalene	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	ug/L	2
3,3'-Dichlorobenzidine	<0.06	0.06	<0.06	0.06	<0.06	0.06	<0.06	0.06	ug/L	0.6
Acenaphthene	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	ug/L	~
Acenaphthylene	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	ug/L	~
Anthracene	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	ug/L	0.0008
Benzo(a)anthracene	<0.02	0.02	<0.02	0.02	<0.02	0.02	<0.02	0.02	ug/L	~
Benzo(a)pyrene	<0.01	0.01	<0.01	0.01	<0.01	0.01	<0.009	0.009	ug/L	~
Benzo(b)fluoranthene	<0.07	0.07	<0.07	0.07	<0.07	0.07	<0.07	0.07	ug/L	~
Benzo(ghi)perylene	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	ug/L	0.00002
Benzo(k)fluoranthene	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	ug/L	0.0002
Biphenyl	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.2
Chrysene	<0.06	0.06	<0.06	0.06	<0.06	0.06	<0.06	0.06	ug/L	0.0001
Dibenz(a,h)anthracene	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	ug/L	0.002
Fluoranthene	<0.04	0.04	<0.04	0.04	<0.04	0.04	<0.03	0.03	ug/L	0.0008
Fluorene	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	ug/L	0.2
Fluorobiphenyl (Surr.)	83.1	N/A	73.6	N/A	77.6	N/A	77.2	N/A	% Rec	~
Indeno(1,2,3-c,d)pyrene	<0.04	0.04	<0.04	0.04	<0.04	0.04	<0.03	0.03	ug/L	~
Naphthalene	<0.06	0.06	<0.06	0.06	<0.06	0.06	<0.06	0.06	ug/L	7
Phenanthrene	<0.04	0.04	<0.04	0.04	<0.04	0.04	<0.03	0.03	ug/L	0.03
p-Terphenyl-d14 (Surr.)	76.8	N/A	75.1	N/A	83.2	N/A	83.6	N/A	% Rec	~
Pyrene	<0.06	0.06	<0.06	0.06	<0.06	0.06	<0.06	0.06	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 520817

Sample Description	WBR - P - 04		PC - 01		WBR - S - 07			
Sample Date	12/4/2023 12:55 PM		12/4/2023 2:05 PM		12/4/2023 11:25 AM			
Lab ID	1958009		1958010		1958011			
PAH	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
1+2-Methylnaphthalene (Calc.)	<0.05	0.05	<0.05	0.05	<0.05	0.05	ug/L	~
1-Methylnaphthalene	<0.03	0.03	<0.04	0.04	<0.03	0.03	ug/L	2
2-Methylnaphthalene	<0.02	0.02	<0.02	0.02	<0.02	0.02	ug/L	2
3,3'-Dichlorobenzidine	<0.06	0.06	<0.06	0.06	<0.06	0.06	ug/L	0.6
Acenaphthene	<0.05	0.05	<0.05	0.05	<0.05	0.05	ug/L	~
Acenaphthylene	<0.05	0.05	<0.05	0.05	<0.05	0.05	ug/L	~
Anthracene	<0.02	0.02	<0.02	0.02	<0.02	0.02	ug/L	0.0008
Benzo(a)anthracene	<0.02	0.02	<0.02	0.02	<0.02	0.02	ug/L	~
Benzo(a)pyrene	<0.009	0.009	<0.009	0.009	<0.009	0.009	ug/L	~
Benzo(b)fluoranthene	<0.07	0.07	<0.07	0.07	<0.07	0.07	ug/L	~
Benzo(ghi)perylene	<0.05	0.05	<0.05	0.05	<0.05	0.05	ug/L	0.00002
Benzo(k)fluoranthene	<0.05	0.05	<0.05	0.05	<0.05	0.05	ug/L	0.0002
Biphenyl	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.2
Chrysene	<0.06	0.06	<0.06	0.06	<0.06	0.06	ug/L	0.0001
Dibenz(a,h)anthracene	<0.05	0.05	<0.05	0.05	<0.05	0.05	ug/L	0.002
Fluoranthene	<0.03	0.03	<0.04	0.04	<0.03	0.03	ug/L	0.0008
Fluorene	<0.05	0.05	<0.05	0.05	<0.05	0.05	ug/L	0.2
Fluorobiphenyl (Surr.)	72.3	N/A	81.2	N/A	76.8	N/A	% Rec	~
Indeno(1,2,3-c,d)pyrene	<0.03	0.03	<0.04	0.04	<0.03	0.03	ug/L	~
Naphthalene	<0.06	0.06	<0.06	0.06	<0.06	0.06	ug/L	7
Phenanthrene	<0.03	0.03	<0.04	0.04	<0.03	0.03	ug/L	0.03
p-Terphenyl-d14 (Surr.)	77.6	N/A	88.5	N/A	81.8	N/A	% Rec	~
Pyrene	<0.06	0.06	<0.06	0.06	<0.06	0.06	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 520817

Sample Description	MATR - 02		WBR - S - Ref		WBR - S - 04		WBR - P - 03			
Sample Date	12/4/2023 9:10 AM		12/4/2023 2:00 PM		12/4/2023 12:10 PM		12/4/2023 12:30 PM			
Lab ID	1958005		1958006		1958007		1958008			
Radionuclides	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Radium-226	0.009	0.005	<0.005	0.005	<0.005	0.005	<0.005	0.005	Bq/L	1

Sample Description	WBR - P - 04		PC - 01		WBR - S - 07			
Sample Date	12/4/2023 12:55 PM		12/4/2023 2:05 PM		12/4/2023 11:25 AM			
Lab ID	1958009		1958010		1958011			
Radionuclides	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Radium-226	<0.005	0.005	0.006	0.005	0.007	0.005	Bq/L	1

Sample Description	MATR - 02		WBR - S - Ref		WBR - S - 04		WBR - P - 03			
Sample Date	12/4/2023 9:10 AM		12/4/2023 2:00 PM		12/4/2023 12:10 PM		12/4/2023 12:30 PM			
Lab ID	1958005		1958006		1958007		1958008			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	45	10	115	10	90	10	90	10	mg/L	~
Total Suspended Solids	4.00	0.67	7.00	0.67	5.00	0.67	1.30	0.67	mg/L	~

Sample Description	WBR - P - 04		PC - 01		WBR - S - 07		SWDup			
Sample Date	12/4/2023 12:55 PM		12/4/2023 2:05 PM		12/4/2023 11:25 AM		12/4/2023 12:00 AM			
Lab ID	1958009		1958010		1958011		1958012			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	90	10	120	10	100	10	75	10	mg/L	~
Total Suspended Solids	2.00	0.67	2.30	0.67	4.30	0.67	4.30	0.67	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 520817

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

% Rec: Surrogate compounds are added to the sample in some cases and the recovery is reported as a % recovered.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Organic Soil Analysis: Data reported for organic analysis in soils samples are corrected for moisture content.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Benzo(b)fluoranthene: Results for benzo(b)fluoranthene may include contributions from benzo(j)fluoranthene.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

Reproduction of Report: Report shall not be reproduced, except in full, without the approval of Testmark Laboratories Ltd.

ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	521073
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation:	PWQO
		Project #:	Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	Adam Gauthier
Date Order Received:	12/5/2023	Analysis Started:	12/6/2023
Arrival Temperature:	11 C	Analysis Completed:	12/27/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
MARLk	1958860	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	12/5/2023	12:50 PM
GERLk	1958861	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	12/5/2023	1:20 PM
NDR.S-04b	1958862	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	12/5/2023	10:50 AM
NDR-S-02	1958863	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	12/5/2023	9:30 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Kirkland Lake	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Asbestos (Sub)	Subcontracted	Determination of Asbestos Fibers by Polarized Light Microscopy	Subcontracted
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 521073

Method	Lab	Description	Reference
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
PAH Water SIM (A41)	Garson	Determination of PAH in Water by GC/MS	Modified from SW846-8270D
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Ra226 (A129)	Garson	Determination of Radium-226 in Water	In-House
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

REPORT COMMENTS

The reported cyanide results are within acceptable quality control limits and have been reviewed for accuracy in relation to the laboratory blank 12/11/23 TP

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 521073

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

WORK ORDER RESULTS

Sample Description	MARLk		GERLk		NDR.S - 04b		NDR - S - 02			
Sample Date	12/5/2023 12:50 PM		12/5/2023 1:20 PM		12/5/2023 10:50 AM		12/5/2023 9:30 AM			
Lab ID	1958860		1958861		1958862		1958863			
Anions	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	0.3	0.2	0.7	0.2	5.2	0.2	3.5	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	0.1	mg/L	~
Nitrite (as N)	0.04	0.01	0.32	0.01	0.04	0.01	0.04	0.01	mg/L	~
Sulphate	<0.5	0.5	1.4	0.5	0.7	0.5	0.7	0.5	mg/L	~

Sample Description	MARLk		NDR.S - 04b		NDR - S - 02			
Sample Date	12/5/2023 12:50 PM		12/5/2023 10:50 AM		12/5/2023 9:30 AM			
Lab ID	1958860		1958862		1958863			
Asbestos	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Asbestos, Chrysotile	0.5	0.5	ND	0.5	ND	0.5	[NONE]	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 521073

Sample Description	MARLk		GERLk		NDR.S - 04b		NDR - S - 02			
Sample Date	12/5/2023 12:50 PM		12/5/2023 1:20 PM		12/5/2023 10:50 AM		12/5/2023 9:30 AM			
Lab ID	1958860		1958861		1958862		1958863			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	6.3	N/A	6.89	N/A	6.58	N/A	6.54	N/A	pH	~
Field Temp	0.09	N/A	0.07	N/A	0.08	N/A	0.06	N/A	°C	~

Sample Description	MARLk		GERLk		NDR.S - 04b		NDR - S - 02			
Sample Date	12/5/2023 12:50 PM		12/5/2023 1:20 PM		12/5/2023 10:50 AM		12/5/2023 9:30 AM			
Lab ID	1958860		1958861		1958862		1958863			
General Chemistry	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Acidity	11	5	11	5	12	5	11	5	mg/L as CaCO3	~
Ammonia (as N)	0.046	0.005	0.058	0.005	0.066	0.005	0.064	0.005	mg/L	~
Conductivity	36	1	216	1	97	1	86	1	µS/cm	~
Dissolved Organic Carbon	32	2	46	2	44	2	44	2	mg/L	~
Free Cyanide	0.003	0.001			0.003	0.001			mg/L	0.005
M-Alkalinity (pH 4.5)	12	2	111	2	35	2	36	2	mg/L as CaCO3	~
pH	5.92	N/A	7.25	N/A	6.59	N/A	6.61	N/A	pH	~
Strong Acid Dissociable Cyanide	<0.002	0.002			0.002	0.002			mg/L	~
Total Hardness (as CaCO3) (Calc.)	17.2	0.1	110.0	0.1	45.6	0.1	43.7	0.1	mg/L	~
Total Phosphorus (as P)	0.030	0.002	0.213	0.002	0.025	0.002	0.021	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.004	0.001			0.004	0.001			mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 521073

Sample Description	MARLk		NDR.S - 04b			
Sample Date	12/5/2023 12:50 PM		12/5/2023 10:50 AM			
Lab ID	1958860		1958862			
Mercury (Trace)	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Mercury	2.84	0.01	3.78	0.01	ng/L	200

Sample Description	MARLk		NDR.S - 04b			
Sample Date	12/5/2023 12:50 PM		12/5/2023 10:50 AM			
Lab ID	1958860		1958862			
Mercury by CV	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01	0.01	ug/L	0.2

Sample Description	MARLk		GERLk		NDR.S - 04b		NDR - S - 02			
Sample Date	12/5/2023 12:50 PM		12/5/2023 1:20 PM		12/5/2023 10:50 AM		12/5/2023 9:30 AM			
Lab ID	1958860		1958861		1958862		1958863			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.106 [0.107]	0.001	0.135	0.001	0.146	0.001	0.150	0.001	mg/L	~

Sample Description	MARLk		GERLk		NDR.S - 04b		NDR - S - 02			
Sample Date	12/5/2023 12:50 PM		12/5/2023 1:20 PM		12/5/2023 10:50 AM		12/5/2023 9:30 AM			
Lab ID	1958860		1958861		1958862		1958863			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Antimony	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Arsenic	0.0004 [0.0005]	0.0001	0.0008	0.0001	0.0007	0.0001	0.0007	0.0001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 521073

Sample Description	MARLk		GERLk		NDR.S - 04b		NDR - S - 02			
Sample Date	12/5/2023 12:50 PM		12/5/2023 1:20 PM		12/5/2023 10:50 AM		12/5/2023 9:30 AM			
Lab ID	1958860		1958861		1958862		1958863			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Barium	0.0034 [0.0034]	0.0001	0.0168	0.0001	0.0062	0.0001	0.0066	0.0001	mg/L	~
Dissolved Beryllium	<0.00002 [<0.00002]	0.00002	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	mg/L	~
Dissolved Bismuth	<0.00005 [<0.00005]	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Boron	<0.002 [<0.002]	0.002	0.004	0.002	<0.002	0.002	<0.002	0.002	mg/L	~
Dissolved Cadmium	0.000040 [0.000040]	0.000005	0.000030	0.000005	0.000030	0.000005	0.000030	0.000005	mg/L	~
Dissolved Calcium	4.71 [4.69]	0.05	29.8	0.5	12.40	0.05	12.40	0.05	mg/L	~
Dissolved Cerium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Chromium	0.0007 [0.0007]	0.0001	0.0016	0.0001	0.0011	0.0001	0.0011	0.0001	mg/L	~
Dissolved Cobalt	0.0002 [0.0002]	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	mg/L	~
Dissolved Copper	0.0016 [0.0016]	0.0002	<0.0002	0.0002	<0.0002	0.0002	0.0036	0.0002	mg/L	~
Dissolved Europium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.49 [0.50]	0.01	0.58	0.01	0.58	0.01	0.58	0.01	mg/L	~
Dissolved Lanthanum	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	0.00041 [0.00040]	0.00005	0.00014	0.00005	0.00020	0.00005	0.00020	0.00005	mg/L	~
Dissolved Lithium	<0.001 [<0.001]	0.001	0.002	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 521073

Sample Description	MARLk		GERLk		NDR.S - 04b		NDR - S - 02			
Sample Date	12/5/2023 12:50 PM		12/5/2023 1:20 PM		12/5/2023 10:50 AM		12/5/2023 9:30 AM			
Lab ID	1958860		1958861		1958862		1958863			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Magnesium	1.190 [1.200]	0.004	7.250	0.004	3.270	0.004	3.090	0.004	mg/L	~
Dissolved Manganese	0.0942 [0.0938]	0.0001	0.0410	0.0001	0.0587	0.0001	0.0511	0.0001	mg/L	~
Dissolved Mercury	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00010 [0.00009]	0.00005	0.00044	0.00005	0.00017	0.00005	0.00018	0.00005	mg/L	~
Dissolved Nickel	<0.0005 [<0.0005]	0.0005	0.0009	0.0005	0.0008	0.0005	0.0007	0.0005	mg/L	~
Dissolved Niobium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05 [<0.05]	0.05	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.15 [0.15]	0.05	0.76	0.05	0.18	0.05	0.19	0.05	mg/L	~
Dissolved Rhodium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	0.0007 [0.0006]	0.0002	0.0012	0.0002	0.0006	0.0002	0.0005	0.0002	mg/L	~
Dissolved Scandium	<0.001 [<0.001]	0.001	0.002	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Selenium	0.00005 [0.00005]	0.00005	0.00014	0.00005	0.00015	0.00005	0.00012	0.00005	mg/L	~
Dissolved Silicon	1.08 [1.07]	0.05	3.22	0.05	1.99	0.05	1.97	0.05	mg/L	~
Dissolved Silver	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Sodium	0.37 [0.36]	0.05	2.68	0.05	3.75	0.05	2.71	0.05	mg/L	~
Dissolved Strontium	0.0091 [0.0090]	0.0002	0.0554	0.0002	0.0211	0.0002	0.0217	0.0002	mg/L	~
Dissolved Sulfur	<0.5 [<0.5]	0.5	1.3	0.5	0.8	0.5	0.8	0.5	mg/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 521073

Sample Description	MARLk		GERLk		NDR.S - 04b		NDR - S - 02			
Sample Date	12/5/2023 12:50 PM		12/5/2023 1:20 PM		12/5/2023 10:50 AM		12/5/2023 9:30 AM			
Lab ID	1958860		1958861		1958862		1958863			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Tellurium	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Thallium	<0.00001 [<0.00001]	0.00001	0.00002	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Thorium	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Tin	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Titanium	0.0039 [0.0039]	0.0003	0.0030	0.0003	0.0035	0.0003	0.0034	0.0003	mg/L	~
Dissolved Tungsten	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Uranium	0.00003 [0.00003]	0.00001	0.00004	0.00001	0.00004	0.00001	0.00003	0.00001	mg/L	~
Dissolved Vanadium	0.0005 [0.0006]	0.0005	0.0006	0.0005	0.0006	0.0005	0.0006	0.0005	mg/L	~
Dissolved Yttrium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.006 [0.006]	0.001	0.006	0.001	0.006	0.001	0.007	0.001	mg/L	~
Dissolved Zirconium	0.0008 [0.0008]	0.0002	0.0009	0.0002	0.0011	0.0002	0.0011	0.0002	mg/L	~

Sample Description	MARLk		GERLk		NDR.S - 04b		NDR - S - 02			
Sample Date	12/5/2023 12:50 PM		12/5/2023 1:20 PM		12/5/2023 10:50 AM		12/5/2023 9:30 AM			
Lab ID	1958860		1958861		1958862		1958863			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.318 [0.313]	0.001	0.365	0.001	0.347	0.001	0.317	0.001	mg/L	0.075
Total Antimony	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.02

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Canada Nickel Company Inc.

Work Order Number: 521073

Sample Description	MARLk		GERLk		NDR.S - 04b		NDR - S - 02			
Sample Date	12/5/2023 12:50 PM		12/5/2023 1:20 PM		12/5/2023 10:50 AM		12/5/2023 9:30 AM			
Lab ID	1958860		1958861		1958862		1958863			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Arsenic	0.0004 [0.0004]	0.0001	0.0009	0.0001	0.0007	0.0001	0.0007	0.0001	mg/L	0.005
Total Barium	0.0041 [0.0042]	0.0001	0.0287	0.0001	0.0069	0.0001	0.0069	0.0001	mg/L	~
Total Beryllium	<0.00002 [<0.00002]	0.00002	0.00003	0.00002	<0.00002	0.00002	<0.00002	0.00002	mg/L	0.011
Total Bismuth	<0.00005 [<0.00005]	0.00005	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Total Boron	<0.002 [<0.002]	0.002	0.004	0.002	<0.002	0.002	<0.002	0.002	mg/L	0.2
Total Cadmium	0.000040 [0.000050]	0.000005	0.000040	0.000005	0.000030	0.000005	0.000030	0.000005	mg/L	0.0001
Total Calcium	4.77 [4.74]	0.05	31.4	0.5	12.40	0.05	12.60	0.05	mg/L	~
Total Cerium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Cesium	0.00003 [0.00003]	0.00001	0.00002	0.00001	0.00002	0.00001	0.00002	0.00001	mg/L	~
Total Chromium	0.0011 [0.0011]	0.0001	0.0016	0.0001	0.0013	0.0001	0.0013	0.0001	mg/L	~
Total Cobalt	0.0003 [0.0003]	0.0001	0.0003	0.0001	0.0002	0.0001	0.0002	0.0001	mg/L	0.0009
Total Copper	0.0002 [0.0003]	0.0002	0.0008	0.0002	0.0003	0.0002	0.0002	0.0002	mg/L	0.001
Total Europium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.7 [0.7]	0.1	1.2	0.1	0.7	0.1	0.7	0.1	mg/L	0.3
Total Lanthanum	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00053 [0.00053]	0.00005	0.00038	0.00005	0.00039	0.00005	0.00024	0.00005	mg/L	0.001

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Canada Nickel Company Inc.

Work Order Number: 521073

Sample Description	MARLk		GERLk		NDR.S - 04b		NDR - S - 02			
Sample Date	12/5/2023 12:50 PM		12/5/2023 1:20 PM		12/5/2023 10:50 AM		12/5/2023 9:30 AM			
Lab ID	1958860		1958861		1958862		1958863			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Lithium	<0.001 [<0.001]	0.001	0.002	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Magnesium	1.300 [1.290]	0.004	7.570	0.004	3.350	0.004	3.170	0.004	mg/L	~
Total Manganese	0.0864 [0.0877]	0.0001	0.1250	0.0001	0.0734	0.0001	0.0618	0.0001	mg/L	~
Total Mercury			<0.0001	0.0001			<0.0001	0.0001	mg/L	0.0002
Total Molybdenum	<0.00005 [<0.00005]	0.00005	0.00025	0.00005	0.00006	0.00005	0.00005	0.00005	mg/L	0.04
Total Nickel	0.0005 [0.0005]	0.0005	0.0016	0.0005	0.0009	0.0005	0.0006	0.0005	mg/L	0.025
Total Niobium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.21 [0.20]	0.05	0.87	0.05	0.22	0.05	0.22	0.05	mg/L	~
Total Rhodium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	0.0010 [0.0010]	0.0002	0.0015	0.0002	0.0009	0.0002	0.0008	0.0002	mg/L	~
Total Scandium	<0.001 [<0.001]	0.001	0.002	0.001	0.001	0.001	0.001	0.001	mg/L	~
Total Selenium	<0.00005 [0.00009]	0.00005	0.00015	0.00005	0.00016	0.00005	0.00013	0.00005	mg/L	0.1
Total Silicon	1.47 [1.47]	0.05	3.52	0.05	2.28	0.05	2.30	0.05	mg/L	~
Total Silver	<0.00001 [<0.00001]	0.00001	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0001
Total Sodium	0.40 [0.40]	0.05	2.70	0.05	3.65	0.05	2.72	0.05	mg/L	~
Total Strontium	0.0100 [0.0099]	0.0002	0.0560	0.0002	0.0215	0.0002	0.0210	0.0002	mg/L	~
Total Sulphur	<0.5 [<0.5]	0.5	1.2	0.5	0.6	0.5	0.6	0.5	mg/L	~

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Canada Nickel Company Inc.

Work Order Number: 521073

Sample Description	MARLk		GERLk		NDR.S - 04b		NDR - S - 02			
Sample Date	12/5/2023 12:50 PM		12/5/2023 1:20 PM		12/5/2023 10:50 AM		12/5/2023 9:30 AM			
Lab ID	1958860		1958861		1958862		1958863			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Tellurium	<0.0002 [<0.0002]	0.0002	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Total Thallium	<0.00001 [<0.00001]	0.00001	0.00002	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0003
Total Thorium	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Total Tin	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Total Titanium	0.0114 [0.0112]	0.0003	0.0107	0.0003	0.0128	0.0003	0.0090	0.0003	mg/L	~
Total Tungsten	<0.0001 [<0.0001]	0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00003 [0.00004]	0.00001	0.00005	0.00001	0.00004	0.00001	0.00004	0.00001	mg/L	0.005
Total Vanadium	0.0008 [0.0009]	0.0005	0.0010	0.0005	0.0008	0.0005	0.0008	0.0005	mg/L	0.006
Total Yttrium	<0.001 [<0.001]	0.001	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.007 [0.007]	0.001	0.007	0.001	0.007	0.001	0.007	0.001	mg/L	0.02
Total Zirconium	0.0011 [0.0011]	0.0002	0.0012	0.0002	0.0013	0.0002	0.0013	0.0002	mg/L	0.004

Sample Description	MARLk		NDR.S - 04b			
Sample Date	12/5/2023 12:50 PM		12/5/2023 10:50 AM			
Lab ID	1958860		1958862			
MethylMercury	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.65	0.02	1.62	0.02	ng/L	~

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Canada Nickel Company Inc.

Work Order Number: 521073

Sample Description	MARLk		NDR.S - 04b		NDR - S - 02			
Sample Date	12/5/2023 12:50 PM		12/5/2023 10:50 AM		12/5/2023 9:30 AM			
Lab ID	1958860		1958862		1958863			
PAH	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
1+2-Methylnaphthalene (Calc.)	<0.05	0.05	<0.05	0.05	<0.05	0.05	ug/L	~
1-Methylnaphthalene	<0.03	0.03	<0.04	0.04	<0.04	0.04	ug/L	2
2-Methylnaphthalene	<0.02	0.02	<0.02	0.02	<0.02	0.02	ug/L	2
3,3'-Dichlorobenzidine	<0.06	0.06	<0.06	0.06	<0.06	0.06	ug/L	0.6
Acenaphthene	<0.05	0.05	<0.05	0.05	<0.05	0.05	ug/L	~
Acenaphthylene	<0.05	0.05	<0.05	0.05	<0.05	0.05	ug/L	~
Anthracene	<0.02	0.02	<0.02	0.02	<0.02	0.02	ug/L	0.0008
Benzo(a)anthracene	<0.02	0.02	<0.02	0.02	<0.02	0.02	ug/L	~
Benzo(a)pyrene	<0.009	0.009	<0.009	0.009	<0.01	0.01	ug/L	~
Benzo(b)fluoranthene	<0.07	0.07	<0.07	0.07	<0.07	0.07	ug/L	~
Benzo(ghi)perylene	<0.05	0.05	<0.05	0.05	<0.05	0.05	ug/L	0.00002
Benzo(k)fluoranthene	<0.05	0.05	<0.05	0.05	<0.05	0.05	ug/L	0.0002
Biphenyl	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.2
Chrysene	<0.06	0.06	<0.06	0.06	<0.06	0.06	ug/L	0.0001
Dibenz(a,h)anthracene	<0.05	0.05	<0.05	0.05	<0.05	0.05	ug/L	0.002
Fluoranthene	<0.03	0.03	<0.04	0.04	<0.04	0.04	ug/L	0.0008
Fluorene	<0.05	0.05	<0.05	0.05	<0.05	0.05	ug/L	0.2
Fluorobiphenyl (Surr.)	75.7	N/A	67.6	N/A	80.3	N/A	% Rec	~
Indeno(1,2,3-c,d)pyrene	<0.03	0.03	<0.04	0.04	<0.04	0.04	ug/L	~
Naphthalene	<0.06	0.06	<0.06	0.06	<0.06	0.06	ug/L	7
Phenanthrene	<0.03	0.03	<0.04	0.04	<0.04	0.04	ug/L	0.03
p-Terphenyl-d14 (Surr.)	85.7	N/A	75.6	N/A	84.1	N/A	% Rec	~
Pyrene	<0.06	0.06	<0.06	0.06	<0.06	0.06	ug/L	~

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Canada Nickel Company Inc.

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Sample Description	MARLk		NDR.S - 04b		NDR - S - 02			
Sample Date	12/5/2023 12:50 PM		12/5/2023 10:50 AM		12/5/2023 9:30 AM			
Lab ID	1958860		1958862		1958863			
Radionuclides	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Radium-226	<0.005	0.005	<0.005	0.005	<0.005	0.005	Bq/L	1

Sample Description	MARLk		GERLk		NDR.S - 04b		NDR - S - 02			
Sample Date	12/5/2023 12:50 PM		12/5/2023 1:20 PM		12/5/2023 10:50 AM		12/5/2023 9:30 AM			
Lab ID	1958860		1958861		1958862		1958863			
Solids	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	65	10	195	10	105	10	95	10	mg/L	~
Total Suspended Solids	2.30	0.67	27.3	1.3	5.70	0.67	4.00	0.67	mg/L	~

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

% Rec: Surrogate compounds are added to the sample in some cases and the recovery is reported as a % recovered.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Organic Soil Analysis: Data reported for organic analysis in soils samples are corrected for moisture content.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Benzo(b)fluoranthene: Results for benzo(b)fluoranthene may include contributions from benzo(j)fluoranthene.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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CERTIFICATE OF ANALYSIS

Client:	Adam Gauthier	Work Order Number:	521230
Company:	Canada Nickel Company Inc.	PO #:	
Address:	130 King St West, Ste 1900 Toronto, ON, M5X 1E3	Regulation: Project #:	PWQO Crawford Project
Phone:	(705) 363-7397	DWS #:	
Email:	adamgauthier@canadanickel.com	Sampled By:	DD/ CW
Date Order Received:	12/6/2023	Analysis Started:	12/7/2023
Arrival Temperature:	12 C	Analysis Completed:	12/27/2023

WORK ORDER SUMMARY

ANALYSES WERE PERFORMED ON THE FOLLOWING SAMPLES. THE RESULTS RELATE ONLY TO THE ITEMS TESTED.

Sample Description	Lab ID	Matrix	Type	Comments	Date Collected	Time Collected
JCRK-02	1959314	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	12/6/2023	9:00 AM
JC-S-01	1959315	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	12/6/2023	12:20 PM
NDR-S-06	1959316	Surface Water	Grab	SAMPLE CONTAINED RESULT EXCEEDENCES.	12/6/2023	10:10 AM

METHODS AND INSTRUMENTATION

THE FOLLOWING METHODS WERE USED FOR YOUR SAMPLE(S):

Method	Lab	Description	Reference
Acidity (A24.0)	Timmins	Determination of Acidity by Titration	Modified from APHA-2310B
Alkalinity (A1.0)	Timmins	Determination of Alkalinity by Titration	Modified from APHA-2320B
Ammonia Water (Low Level) (A42)	Garson	Determination of Ammonia/Ammonium in Water by On-Line Derivitization with Fluorormetric Detection	Based on Goyal et. al., Anal. Chem. 1988, 60, 175-179
Anion (Nitrate/Nitrite) by Colourimetry (A126)	Timmins	Determination of Nitrate+Nitrite by Colorimetry	Modified from EPA 353.1
Anions Water (mg/L by IC) (A5)	Timmins	Determination of Anions in Water by Ion Chromatography	Modified from SW846-9056A
Asbestos (Sub)	Subcontracted	Determination of Asbestos Fibers by Polarized Light Microscopy	Subcontracted
Conductivity of Water (A12)	Timmins	Determination of Conductivity in Water at 25°C	Modified from SM 2510 B
DOC Water (A55.1)	Timmins	Determination of Dissolved Organic Carbon in Water	Modified from SM-5310 C

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Canada Nickel Company Inc.

Work Order Number: 521230

Method	Lab	Description	Reference
Field pH (R112)	Timmins	Client Supplied Field Determination of pH of Water	Field Test
Field Temp (R113)	Timmins	Client Supplied Field Determination of Temperature of Water	Field Test
Free CN Water (A43)	Kirkland Lake	Determination of Free Cyanide in Water by Flow Injection Analysis	Modified from ASTM D7237
Hg-T/MeHg (Sub)	Subcontracted	Determination of trace level Total Mercury and Methylmercury	Subcontracted
ICPMS Dis. Water (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Dis. Water FF (A13.3)	Timmins	Determination of Dissolved (Lab Filtered) Metals in Water by ICP/MS -> Field-Filtered	Modified from SW846-6020A
ICPMS Reg. Water (A13.1)	Timmins	Determination of Metals in Water by ICP/MS	Modified from SW846-6020A
ICPMS Tot. Water (A13.2)	Timmins	Determination of Total Metals in Water by ICP/MS with Digestion	Modified from SW846-6020A
Mercury CV Water (S8)	Timmins	Determination of Inorganic Mercury in Water by Cold Vapour	Modified from EPA 245.7
Methylmercury (A141)	Garson	Determination of Methylmercury in water	Modified from EPA 1630
PAH Water SIM (A41)	Garson	Determination of PAH in Water by GC/MS	Modified from SW846-8270D
pH of Water (A2.0)	Timmins	Determination of Water pH by Ion Selective Electrode	Modified from APHA-4500H+ B
Ra226 (A129)	Garson	Determination of Radium-226 in Water	In-House
Reg. Hardness (A13)	Timmins	Determination of Total Hardness	Modified from APHA-2340B
SAD CN Water (A43.8)	Kirkland Lake	Determination of Strong Acid Dissociable Cyanide in Water	Modified from APHA-4500
TDS (A27)	Timmins	Determination of Total Dissolved Solids in water by gravimetry	Modified from SM-2540
TP Water (A23.2)	Kirkland Lake	Determination of Total Phosphorus in Water.	Modified from EPA 365.3 and ESS 310.2,
TSS (A27)	Timmins	Determination of Total Suspended Solids in water by gravimetry	Modified from SM-2540
WAD CN Water (A43)	Kirkland Lake	Determination of Weak Acid Dissociable (WAD) Cyanide in Water	Modified from ASTM D6888

REPORT COMMENTS

The reported cyanide results are within acceptable quality control limits and have been reviewed for accuracy in relation to the laboratory blank 12/11/23 TP

This report has been approved by:

<original signed by>

Adam Tam, M.Sc.
Laboratory Director

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 521230

WORK ORDER RESULTS

Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06			
Sample Date	12/6/2023 9:00 AM		12/6/2023 12:20 PM		12/6/2023 10:10 AM			
Lab ID	1959314		1959315		1959316			
Anions	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Chloride	0.5	0.2	14.1	0.2	3.2	0.2	mg/L	~
Fluoride	<0.05	0.05	<0.05	0.05	0.07	0.05	mg/L	~
Nitrate (as N) (Calc.)	<0.1	0.1	<0.1	0.1	0.1 [0.1]	0.1	mg/L	~
Nitrite (as N)	<0.01	0.01	<0.01	0.01	<0.01 [<0.01]	0.01	mg/L	~
Sulphate	<0.5	0.5	<0.5	0.5	<0.5	0.5	mg/L	~

Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06			
Sample Date	12/6/2023 9:00 AM		12/6/2023 12:20 PM		12/6/2023 10:10 AM			
Lab ID	1959314		1959315		1959316			
Asbestos	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Asbestos, Chrysotile	ND	0.5	ND	0.5	ND	0.5	%	~

Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06			
Sample Date	12/6/2023 9:00 AM		12/6/2023 12:20 PM		12/6/2023 10:10 AM			
Lab ID	1959314		1959315		1959316			
Field Parameters	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Field pH	6.6	N/A	5.86	N/A	6.78	N/A	pH	~
Field Temp	1.32	N/A	0.45	N/A	1.35	N/A	°C	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 521230

Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06			
Sample Date	12/6/2023 9:00 AM		12/6/2023 12:20 PM		12/6/2023 10:10 AM			
Lab ID	1959314		1959315		1959316			
General Chemistry	**Result**	**MDL**	**Result**	**MDL**	**Result**	**MDL**	**Units**	**Criteria: PWQO**
Acidity	10	5	14	5	10	5	mg/L as CaCO3	~
Ammonia (as N)	0.064	0.005	0.060	0.005	0.062	0.005	mg/L	~
Conductivity	39	1	83	1	89	1	µS/cm	~
Dissolved Organic Carbon	29	2	47	2	43	2	mg/L	~
Free Cyanide	0.003	0.001	0.001	0.001	<0.001	0.001	mg/L	0.005
M-Alkalinity (pH 4.5)	14	2	8	2	38	2	mg/L as CaCO3	~
pH	6.07	N/A	5.4	N/A	6.68	N/A	pH	~
Strong Acid Dissociable Cyanide	<0.002	0.002	<0.002	0.002	<0.002	0.002	mg/L	~
Total Hardness (as CaCO3) (Calc.)	21.9	0.1	23.0	0.1	44.7	0.1	mg/L	~
Total Phosphorus (as P)	0.017	0.002	0.008	0.002	0.018	0.002	mg/L	~
Weak Acid Dissociable Cyanide	0.004 [0.004]	0.001	0.004	0.001	0.004 [0.004]	0.001	mg/L	~

Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06			
Sample Date	12/6/2023 9:00 AM		12/6/2023 12:20 PM		12/6/2023 10:10 AM			
Lab ID	1959314		1959315		1959316			
Mercury (Trace)	**Result**	**MDL**	**Result**	**MDL**	**Result**	**MDL**	**Units**	**Criteria: PWQO**
Total Mercury	3.28	0.01	2.21	0.01	2.12	0.01	ng/L	200

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Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06			
Sample Date	12/6/2023 9:00 AM		12/6/2023 12:20 PM		12/6/2023 10:10 AM			
Lab ID	1959314		1959315		1959316			
Mercury by CV	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Mercury	<0.01	0.01	<0.01	0.01	<0.01	0.01	ug/L	0.2

Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06			
Sample Date	12/6/2023 9:00 AM		12/6/2023 12:20 PM		12/6/2023 10:10 AM			
Lab ID	1959314		1959315		1959316			
Metals (Dissolved - 0.2um)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Aluminum	0.191 [0.189]	0.001	0.116	0.001	0.139	0.001	mg/L	~

Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06			
Sample Date	12/6/2023 9:00 AM		12/6/2023 12:20 PM		12/6/2023 10:10 AM			
Lab ID	1959314		1959315		1959316			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Antimony	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Arsenic	0.0006	0.0001	0.0007	0.0001	0.0008	0.0001	mg/L	~
Dissolved Barium	0.0046	0.0001	0.0035	0.0001	0.0057	0.0001	mg/L	~
Dissolved Beryllium	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	mg/L	~
Dissolved Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Dissolved Boron	<0.002	0.002	<0.002	0.002	<0.002	0.002	mg/L	~
Dissolved Cadmium	0.000070	0.000005	0.000040	0.000005	0.000020	0.000005	mg/L	~
Dissolved Calcium	6.57	0.05	7.10	0.05	13.20	0.05	mg/L	~
Dissolved Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Cesium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~

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Canada Nickel Company Inc.

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Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06			
Sample Date	12/6/2023 9:00 AM		12/6/2023 12:20 PM		12/6/2023 10:10 AM			
Lab ID	1959314		1959315		1959316			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Chromium	0.0010	0.0001	0.0007	0.0001	0.0009	0.0001	mg/L	~
Dissolved Cobalt	0.0002	0.0001	0.0002	0.0001	0.0001	0.0001	mg/L	~
Dissolved Copper	0.0018	0.0002	0.0011	0.0002	0.0010	0.0002	mg/L	~
Dissolved Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Iron	0.65	0.01	0.31	0.01	0.58	0.01	mg/L	~
Dissolved Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Lead	0.00043	0.00005	0.00073	0.00005	0.00016	0.00005	mg/L	~
Dissolved Lithium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Magnesium	1.610	0.004	1.590	0.004	3.690	0.004	mg/L	~
Dissolved Manganese	0.0694	0.0001	0.0444	0.0001	0.0398	0.0001	mg/L	~
Dissolved Mercury	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.0002
Dissolved Molybdenum	0.00012	0.00005	<0.00005	0.00005	0.00013	0.00005	mg/L	~
Dissolved Nickel	0.0008	0.0005	0.0007	0.0005	0.0008	0.0005	mg/L	~
Dissolved Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Phosphorus	<0.05	0.05	<0.05	0.05	<0.05	0.05	mg/L	~
Dissolved Potassium	0.14	0.05	<0.05	0.05	0.19	0.05	mg/L	~
Dissolved Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Rubidium	0.0006	0.0002	<0.0002	0.0002	0.0006	0.0002	mg/L	~
Dissolved Scandium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Selenium	0.00008	0.00005	0.00008	0.00005	0.00015	0.00005	mg/L	~
Dissolved Silicon	1.92	0.05	1.87	0.05	2.09	0.05	mg/L	~
Dissolved Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Sodium	0.68	0.05	8.71	0.05	2.98	0.05	mg/L	~

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Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06			
Sample Date	12/6/2023 9:00 AM		12/6/2023 12:20 PM		12/6/2023 10:10 AM			
Lab ID	1959314		1959315		1959316			
Metals (Dissolved)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Dissolved Strontium	0.0122	0.0002	0.0107	0.0002	0.0195	0.0002	mg/L	~
Dissolved Sulfur	1.2	0.5	1.1	0.5	1.3	0.5	mg/L	~
Dissolved Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Dissolved Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	~
Dissolved Thorium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Tin	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Titanium	0.0062	0.0003	0.0017	0.0003	0.0038	0.0003	mg/L	~
Dissolved Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Dissolved Uranium	0.00003	0.00001	<0.00001	0.00001	0.00004	0.00001	mg/L	~
Dissolved Vanadium	0.0006	0.0005	<0.0005	0.0005	<0.0005	0.0005	mg/L	~
Dissolved Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Dissolved Zinc	0.015	0.001	0.012	0.001	0.006	0.001	mg/L	~
Dissolved Zirconium	0.0014	0.0002	0.0005	0.0002	0.0011	0.0002	mg/L	~

Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06			
Sample Date	12/6/2023 9:00 AM		12/6/2023 12:20 PM		12/6/2023 10:10 AM			
Lab ID	1959314		1959315		1959316			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Aluminum	0.457	0.001	0.128	0.001	0.321	0.001	mg/L	0.075
Total Antimony	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.02
Total Arsenic	0.0008	0.0001	0.0006	0.0001	0.0007	0.0001	mg/L	0.005
Total Barium	0.0056	0.0001	0.0035	0.0001	0.0059	0.0001	mg/L	~
Total Beryllium	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00002	mg/L	0.011

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Sample Date	12/6/2023 9:00 AM		12/6/2023 12:20 PM		12/6/2023 10:10 AM			
Lab ID	1959314		1959315		1959316			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Bismuth	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	~
Total Boron	<0.002	0.002	<0.002	0.002	<0.002	0.002	mg/L	0.2
Total Cadmium	0.000070	0.000005	0.000040	0.000005	0.000030	0.000005	mg/L	0.0001
Total Calcium	6.70	0.05	7.23	0.05	13.10	0.05	mg/L	~
Total Cerium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Cesium	0.00003	0.00001	<0.00001	0.00001	0.00002	0.00001	mg/L	~
Total Chromium	0.0014	0.0001	0.0008	0.0001	0.0011	0.0001	mg/L	~
Total Cobalt	0.0003	0.0001	0.0002	0.0001	0.0002	0.0001	mg/L	0.0009
Total Copper	0.0011	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	0.001
Total Europium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Gallium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Iron	0.9	0.1	0.33	0.01	0.7	0.1	mg/L	0.3
Total Lanthanum	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Lead	0.00054	0.00005	0.00076	0.00005	0.00023	0.00005	mg/L	0.001
Total Lithium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Magnesium	1.690	0.004	1.650	0.004	3.710	0.004	mg/L	~
Total Manganese	0.0736	0.0001	0.0458	0.0001	0.0447	0.0001	mg/L	~
Total Molybdenum	<0.00005	0.00005	<0.00005	0.00005	<0.00005	0.00005	mg/L	0.04
Total Nickel	0.0010	0.0005	<0.0005	0.0005	0.0009	0.0005	mg/L	0.025
Total Niobium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Potassium	0.20	0.05	<0.05	0.05	0.24	0.05	mg/L	~
Total Rhodium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Rubidium	0.0010	0.0002	<0.0002	0.0002	0.0009	0.0002	mg/L	~
Total Scandium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~

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Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06			
Sample Date	12/6/2023 9:00 AM		12/6/2023 12:20 PM		12/6/2023 10:10 AM			
Lab ID	1959314		1959315		1959316			
Metals (Total)	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Selenium	<0.00005	0.00005	0.00006	0.00005	0.00010	0.00005	mg/L	0.1
Total Silicon	2.28	0.05	1.87	0.05	2.31	0.05	mg/L	~
Total Silver	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0001
Total Sodium	0.71	0.05	8.55	0.05	2.86	0.05	mg/L	~
Total Strontium	0.0130	0.0002	0.0109	0.0002	0.0196	0.0002	mg/L	~
Total Sulphur	1.1	0.5	1.1	0.5	1.1	0.5	mg/L	~
Total Tellurium	<0.0002	0.0002	<0.0002	0.0002	<0.0002	0.0002	mg/L	~
Total Thallium	<0.00001	0.00001	<0.00001	0.00001	<0.00001	0.00001	mg/L	0.0003
Total Thorium	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Total Tin	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	~
Total Titanium	0.0148	0.0003	0.0021	0.0003	0.0099	0.0003	mg/L	~
Total Tungsten	<0.0001	0.0001	<0.0001	0.0001	<0.0001	0.0001	mg/L	0.03
Total Uranium	0.00004	0.00001	<0.00001	0.00001	0.00004	0.00001	mg/L	0.005
Total Vanadium	0.0009	0.0005	<0.0005	0.0005	0.0007	0.0005	mg/L	0.006
Total Yttrium	<0.001	0.001	<0.001	0.001	<0.001	0.001	mg/L	~
Total Zinc	0.013	0.001	0.01	0.01	0.006	0.001	mg/L	0.02
Total Zirconium	0.0017	0.0002	0.0005	0.0002	0.0013	0.0002	mg/L	0.004

Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06			
Sample Date	12/6/2023 9:00 AM		12/6/2023 12:20 PM		12/6/2023 10:10 AM			
Lab ID	1959314		1959315		1959316			
MethylMercury	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Methyl mercury	0.13	0.02	0.18	0.02	0.15 [0.14]	0.02	ng/L	~

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Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06			
Sample Date	12/6/2023 9:00 AM		12/6/2023 12:20 PM		12/6/2023 10:10 AM			
Lab ID	1959314		1959315		1959316			
PAH	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
1+2-Methylnaphthalene (Calc.)	<0.05	0.05	<0.05	0.05	<0.05	0.05	ug/L	~
1-Methylnaphthalene	<0.03	0.03	<0.04	0.04	<0.04	0.04	ug/L	2
2-Methylnaphthalene	<0.02	0.02	<0.02	0.02	<0.02	0.02	ug/L	2
3,3'-Dichlorobenzidine	<0.06	0.06	<0.06	0.06	<0.06	0.06	ug/L	0.6
Acenaphthene	<0.05	0.05	<0.05	0.05	<0.05	0.05	ug/L	~
Acenaphthylene	<0.05	0.05	<0.05	0.05	<0.05	0.05	ug/L	~
Anthracene	<0.02	0.02	<0.02	0.02	<0.02	0.02	ug/L	0.0008
Benzo(a)anthracene	<0.02	0.02	<0.02	0.02	<0.02	0.02	ug/L	~
Benzo(a)pyrene	<0.009	0.009	<0.01	0.01	<0.01	0.01	ug/L	~
Benzo(b)fluoranthene	<0.07	0.07	<0.07	0.07	<0.07	0.07	ug/L	~
Benzo(ghi)perylene	<0.05	0.05	<0.05	0.05	<0.05	0.05	ug/L	0.00002
Benzo(k)fluoranthene	<0.05	0.05	<0.05	0.05	<0.05	0.05	ug/L	0.0002
Biphenyl	<0.1	0.1	<0.1	0.1	<0.1	0.1	ug/L	0.2
Chrysene	<0.06	0.06	<0.06	0.06	<0.06	0.06	ug/L	0.0001
Dibenz(a,h)anthracene	<0.05	0.05	<0.05	0.05	<0.05	0.05	ug/L	0.002
Fluoranthene	<0.03	0.03	<0.04	0.04	<0.04	0.04	ug/L	0.0008
Fluorene	<0.05	0.05	<0.05	0.05	<0.05	0.05	ug/L	0.2
Fluorobiphenyl (Surr.)	67.4	N/A	54.8	N/A	56.9	N/A	% Rec	~
Indeno(1,2,3-c,d)pyrene	<0.03	0.03	<0.04	0.04	<0.04	0.04	ug/L	~
Naphthalene	<0.06	0.06	<0.06	0.06	<0.06	0.06	ug/L	7
Phenanthrene	<0.03	0.03	<0.04	0.04	<0.04	0.04	ug/L	0.03
p-Terphenyl-d14 (Surr.)	84.7	N/A	60	N/A	77.4	N/A	% Rec	~
Pyrene	<0.06	0.06	<0.06	0.06	<0.06	0.06	ug/L	~

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CERTIFICATE OF ANALYSIS

Canada Nickel Company Inc.

Work Order Number: 521230

Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06			
Sample Date	12/6/2023 9:00 AM		12/6/2023 12:20 PM		12/6/2023 10:10 AM			
Lab ID	1959314		1959315		1959316			
Radionuclides	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Radium-226	<0.005	0.005	<0.005	0.005	<0.005	0.005	Bq/L	1

Sample Description	JCRK - 02		JC - S - 01		NDR - S - 06			
Sample Date	12/6/2023 9:00 AM		12/6/2023 12:20 PM		12/6/2023 10:10 AM			
Lab ID	1959314		1959315		1959316			
Solids	Result	MDL	Result	MDL	Result	MDL	Units	Criteria: PWQO
Total Dissolved Solids	110	10	120	10	105	10	mg/L	~
Total Suspended Solids	3.30	0.67	1.00	0.67	4.70	0.67	mg/L	~

LEGEND

Dates: Dates are formatted as mm/dd/year throughout this report.

[rr]: After a parameter name indicates a re-run of that parameter. If multiple re-runs exist they are suffixed by a number. Sample may not have been handled according to the recommended temperature, hold time and head space requirements of the method after the initial analysis.

MDL: Method detection limit or minimum reporting limit.

[ ]: Results for laboratory replicates are shown in square brackets immediately below the associated sample result for ease of comparison.

% Rec: Surrogate compounds are added to the sample in some cases and the recovery is reported as a % recovered.

~: In a criteria column indicates the criteria is not applicable for the parameter row.

Organic Soil Analysis: Data reported for organic analysis in soils samples are corrected for moisture content.

Quality Control: All associated Quality Control data is available on request.

Exceedences: HIGHLIGHTED CELLS INDICATE THAT THE RESULT EXCEEDS A REGULATORY LIMIT. CALCULATED UNCERTAINTY ESTIMATIONS ARE NOT APPLIED FOR DETERMINING SAMPLE EXCEEDANCES.

Benzo(b)fluoranthene: Results for benzo(b)fluoranthene may include contributions from benzo(j)fluoranthene.

Field Data: Reports containing Field Parameters represent data that has been collected and provided by the client. Testmark is not responsible for the validity of this data which may be used in subsequent calculations.

Sample Condition Deviations: A noted sample condition deviation may affect the validity of the result. Results apply to the sample(s) as received.

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ICPMS Dustfall Insoluble: The ICPMS Dustfall Insoluble Portion method analyzes only the particulate matter from the Dustfall Sampler which is retained on the analysis filter during the Dustfall method.

Regulation Comparisons: Disclaimer: Please note that regulation criteria are provided for comparative purposes, however the onus on ensuring the validity of this comparison rests with the client.

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