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**Great Bear Lake Sites
2016 Water Quality Monitoring Report**

**Indigenous and Northern Affairs Canada
Great Bear Lake Sites Call-up #4500352804 against SOA #4600000874**

**March 2018
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GREAT BEAR LAKE SITES 2016 WATER QUALITY MONITORING REPORT

SLR Project No.: 234.01016.00001

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LIST OF ABBREVIATIONS

%	Percent
AFW	Aquatic Life Freshwater
BFD	Blind Field Duplicate
Bq/L	Becquerel per litre
BTEX	Benzene, toluene, ethylbenzene and xylenes
CALA	Canadian Association for Laboratory Accreditation Inc.
CCME	Canadian Council of Ministers of the Environment
COPC	Contaminants of Potential Concern
DM	Dissolved Metals
DO	Dissolved Oxygen
DWQG	Canadian Drinking Water Quality Guidelines
EPH	Extractable Petroleum Hydrocarbons
EQG	Environmental Quality Guideline
GBL	Great Bear Lake
GP	General Parameters
GPS	Global Positioning System
INAC–CARD	Indigenous and Northern Affairs Canada – Contaminants and Remediation Division
km	Kilometers
L	Litre
LEL	Lowest Effects Levels
m	Metres
m ³	Cubic meters
MACs	Maximum Acceptable Concentrations
MDL	Method detection limit
mg/L	Milligrams per litre
MMER	Metal Mining Effluent Regulations
NP/AP	Neutralization potential/acid potential
NRCan	Natural Resources Canada
PHC	Petroleum Hydrocarbon Compounds
QA / QC	Quality Assurance / Quality Control
Rads	Radionuclides
RCAF	Royal Canadian Air Forces
RPD	Relative Percent Difference
SLR	SLR Consulting (Canada) Ltd.
SOA	Standing Offer Agreement
SOW	Statement of Work
SOW	Scope of Work
TM	Total Metals
TSS	Total Suspended Solids
VPH	Volatile Petroleum Hydrocarbons
WQMP	Water Quality Monitoring Program
µg/L	Micrograms per litre

1.0 INTRODUCTION

SLR Consulting (Canada) Ltd. (SLR) has prepared the 2016 Great Bear Lake Water Quality Monitoring Report for Indigenous and Northern Affairs Canada – Contaminants and Remediation Division (INAC – CARD). This work has been undertaken through the Statement of Work for Water Quality Monitoring Program (WQMP) at the Great Bear Lake Sites call-ups #4500352804 and #4500377047 against the Standing Offer Agreement (SOA) #4600000874.

As noted in the Statement of Work (SOW):

“The Great Bear Lake (GBL) Sites Remediation Project consists of several contaminated sites at the east end of Great Bear Lake in the Northwest Territories... The GBL Sites are being remediated together due to their close proximity to one another. The proposed remediation plan for the GBL Sites is a five year project, which has been delayed until funding for the full scope of the remediation has been secured.” (INAC, 2016)

This report presents the results of the 2016 field program and laboratory analysis in the context of available historical water quality data and appropriate guidelines. Specifically, this report draws attention to 2016 water quality data that indicates elevated concentrations; and data that approaches or exceeds applicable guidelines. It also provides a summary of previous monitoring programs undertaken at each site location.

Overall, this report addresses INAC – CARD's commitment to monitor the aquatic environment in and around these sites as part of Water Licence S15L8.

Seven (7) sites have been identified as part of the WQMP:

1. Sawmill Bay
2. Contact Lake
3. El Bonanza; and Bonanza (note that for this report, Bonanza and El Bonanza will be discussed together as El Bonanza)
4. Silver Bear Mines consisting of four (4) separate sites:
 - Terra
 - Northrim
 - Norex/Graham Vein
 - Smallwood

The GBL sites are located on the eastern portion of Great Bear Lake, approximately 400 kilometres (km) northwest of Yellowknife (Appendix A: Drawing 1).

2.0 2016 WATER QUALITY MONITORING PROGRAM

The following section presents the methodology of the 2016 field program undertaken by SLR and laboratory analysis of the water quality samples collected by SLR. Given that the 2016 program represents a milestone in the overall water monitoring program going forward into the remediation and post-remediation phases, effort has been placed on defining the water sampling parameters and sampling protocol.

2.1 Water Sampling Parameters and Sampling Protocol

At any given station, the following field tasks were performed:

- Sample location geo-referencing;
- Recording of visual observations;
- Photos;
- Measurement of field parameters; and
- Sample collection.

2.1.1 Geo-Referencing

The Global Positioning System (GPS) coordinates were recorded using a handheld GPS in units of decimal, degree, latitude and longitude, to a minimum of 5 decimal places, using the WGS84 datum, as per the SOW. All sample locations and GPS coordinates are given in Appendix E – Master Sample Location List.

2.1.2 Visual Observations

Visual observations recorded included, but was not limited to:

- Flow clarity;
- Colour;
- Odour;
- Flow rate estimate;
- Flow path; and
- Other observations relevant to understanding the conditions of the site with respect to monitoring objectives and anything that may bias the results.

2.1.3 Photos

Photos were taken of the monitoring locations and at any other location where observations were made that would be relevant to the interpretation of water quality and site conditions. They were accompanied by the GPS coordinates and observations notes. They were taken in such a manner that the scale of the photo is evident and the direction of the view recorded. Photos from the sites can be found in Appendix D – Photographs.

2.1.4 Field Measurements

A Horiba U-53 multimeter was used for the monitoring of field parameters, including temperature, pH, conductivity, and dissolved oxygen (DO). At lake sites where multiple depths were to be sampled, the field parameters were recorded every meter, to a total depth of 10 metres (m) with the exception of deeper lakes where this was modified to every 2 m. Select field parameters are recorded in Appendix B tables.

2.1.5 Sample Collection

Surface water sampling was undertaken using methods consistent with the Canadian Council of Ministers of the Environment (CCME) Protocols Manual for Water Quality Sampling in Canada (2011), with special attention being paid to the following sections:

- Section 2.3 Protocol for Safety in Sampling from Boats and Aircraft;
- Section 6.2.4 Protocol for Sampling the Water Column in Lake and Streams at Depth; and
- Section 6.14 Protocol for Radionuclides Sampling.

Samples were collected in-situ wherever possible by submerging new sample bottles directly into the water being sampled. Exceptions to this in-situ sampling included Total Suspended Solids (TSS) sampling; whenever preservatives had already been preloaded in the bottles; and when samples were field filtered. New, clean nitrile gloves were worn for each sample collected and equipment was decontaminated between sampling locations.

Samples were kept cool and shipped to Maxxam Analytics, a Canadian Association for Laboratory Accreditation Inc. (CALA) accredited lab, for analysis of: pH, conductivity, ammonia, alkalinity (total, bicarbonate, carbonate and hydroxide), nitrite-nitrogen, nitrate-nitrogen, chloride, sulphate, total phosphorus, dissolved phosphorus, dissolved organic carbon,; total and dissolved metals (aluminium, antimony, arsenic, barium, beryllium, bismuth, boron, cadmium, calcium, chromium (total, +6, and +3), cobalt, copper, iron, lead, lithium, magnesium, manganese, mercury, molybdenum, nickel, potassium, selenium, silver, sodium, strontium, thallium, tin, titanium, uranium, vanadium, zinc, and zirconium); alpha and beta radiation; radionuclides; and/or petroleum hydrocarbon (PHC) related parameters (F1, F2, F3, F4, benzene, toluene, ethylbenzene and xylenes (BTEX), F1-BTEX), as required. Based on the high level review of the existing historic data, PCBs were not included in the sampling suite for any of the sites.

Analytical laboratory reports for samples collected during the 2016 WQMP can be found in Appendix C and data tables are reported in Appendix B – 2016 Chemistry Results Tables.

2.1.5.1 *Column Sampling*

For open lake (as opposed to shoreline) samples, water was sampled in the epilimnion and the metalimnion. This also applied to dock locations where samples at two depths were noted.

For preliminary purposes, these stations had been listed as requiring samples from a 2 m depth and a 10 m depth; however, the actual depth of the thermocline was unknown prior to the field program. For these sites, the Horiba multimeter was used to record the field parameters (including temperature) 1 m below the surface and at 1 m intervals to a depth of 10 m. In deeper waters, this was modified to 2 m below the surface and at 2 m intervals (to a depth of 10 m).

Depth samples were collected using a Van Dorn sampler within the epilimnion and metalimnion, with surface layer sampling potentially occurring within the top 2 m of the water column and lower samples collected from between 6 and 10 m deep. Actual sample depths were to be determined based on the thermocline observed in the field.

2.1.5.2 *Radionuclides*

Three 1 litre (L) plastic bottles were used at each site requiring radionuclide testing and the sampling method undertaken allowed for the evacuation of radon gas to prevent its interference with radium-226 detection (see the finalised WQMP for more details (SLR, 2016).

Samples collected for radionuclide testing were shipped to the Maxxam Laboratory in Ontario for analysis. Samples were tested for gross alpha and gross beta, and only samples with results greater than 0.5 and 1.0 Bq/L, respectively, were further tested for Pb-210 and Ra-226.

2.1.5.3 *Chromium*

Chromium speciation was recommended for select sites based on historic results. These samples were placed on hold with the lab and speciation was only requested if the Total Chromium result was greater than 0.001 mg/L.

2.1.6 **Guidelines**

For the 2016 WQMP, surface water quality has been compared with the Canadian Council of Ministers of the Environment Canadian Water Quality Guidelines for the Protection of Aquatic Life (Freshwater) (CCME AFW), (CCME, 1999) including for uranium.

2.2 **Quality Assurance / Quality Control (QA / QC)**

Reliable analytical data is a critical component of any water quality assessment and monitoring program. The QA/QC program was designed to help reduce and identify potential errors associated with each step of the sampling process as well as to check on the quality of results from the analytical laboratory.

2.2.1 **Field**

2.2.1.1 *Replicate Samples*

A replicate sample is a sequential sample that is taken immediately following the collection of a regular sample. Replicate samples were collected on approximately 10 percent (%) of the samples collected as part of the QA/QC sampling program. Duplicates are a type of replicate sample (two of the same), and these samples provide a rough estimate of the overall variability of the field technique and laboratory analysis.

For this water quality monitoring program, blind duplicate samples were collected at a rate of one duplicate per 10 samples, with a minimum of one duplicate at each of the seven sites. This allows for each site to be evaluated on a stand-alone basis if required. In total, one duplicate was collected at each of the El Bonanza, Norex, Northrim, and Smallwood sites, and two duplicates were collected at each of the Contact Lake, Sawmill Bay, and Terra Mine sites.

2.2.1.2 *Field Blanks*

Field blanks are used to evaluate for contamination resulting from the sampling technique and from exposure to the air environment of the sampling location.

For this water quality monitoring program, as there was little variability anticipated between sampling techniques used at the various sites or between their atmospheres, one field blank at each of the seven sites was collected.

Deionised water was shipped from the lab immediately prior to the sampling event for use in the field blanks. Deionized water was poured into sampling bottles for the field blanks. No equipment blanks were collected.

2.2.1.3 *Travel Blanks*

A travel blank is a sample of distilled “clean” water that is prepared by the laboratory performing the analysis. The travel blank is shipped to the site and remains sealed before being shipped

back to the lab for analysis. The travel blank helps to identify the presence of container or preservative contamination. Due to the nature of the contaminants of concern relating to this project, one travel blank per site was analysed as part of the QA/QC program.

2.2.2 Laboratory

All surface water samples were analyzed by Maxxam Analytics. Maxxam is accredited by the CALA for the parameters analysed for in this report, and uses recognized methods to conduct laboratory analyses. As conveyed by the laboratory, method blanks, certified reference materials, method spikes, duplicates, surrogates and laboratory control samples are routinely analysed as part of their QA/QC programs. The internal laboratory analysis indicated the replicates were within the acceptable limits for samples analysed during this program. The results of laboratory internal quality control replicates can be found within the chemical analysis reports (Appendix C).

2.2.3 Relative Percent Difference

The relative percent difference (RPD – the absolute difference between the two values, divided by the mean) of duplicate analyses is used to evaluate the sample result variability. Where the concentration of a parameter is less than five times the laboratory method detection limit (MDL), the results are less precise and the RPD is not calculated.

Under the RPD targets recommended by the BC Environmental Laboratory Manual (2015) to the BC Ministry of Environment which have been adopted by SLR, the relevant RPD criteria for the GBL WQMP are as follows:

- 20% for an individual metal parameter and 20% for a batch average for metals in water and general parameters; and
- 30% for an individual parameter and 30% for a batch average for organic analyses (BTEx/Volatile Petroleum Hydrocarbons (VPH), PHC fractions F1 to F4) in water.

2.3 Summary of the 2016 Field Program

On August 29th, SLR mobilized staff to the Terra Mine basecamp to execute the 2016 water quality monitoring program. At the time of the 2016 WQMP, a drum removal program was being executed at the Terra site by an INAC – CARD third-party contractor, Excavation P. Huot. As such, the basecamp was open and in operation upon SLR's arrival, and the field staff was able to utilize their cook, medic, and facilities for the entire program.

Crew and gear were mobilized to site via a wheeled Twin Otter aircraft chartered through Air Tindi (Discovery Air) from Yellowknife. Upon arrival at site, the SLR field staff received site and safety orientations from Excavation P. Huot, and the remainder of the day was spent preparing to start sampling the following day.

SLR personnel were accompanied in the field daily by an INAC – CARD staff member who acted as the Wildlife Monitor for the program. In addition, INAC was able to help the SLR field staff in locating historical sampling points and to aid in making field-level decisions, greatly improving the efficiency of the program. Excavation P. Huot provided a Wildlife Monitor to SLR for one of the field days.

The dates spent at the various sites were as follows:

Table 2-1 2016 Field Program Timeline and Sampling Dates

SITE	DATE
Mobilization to Terra Mine Basecamp	August 29 th
El Bonanza (including Bonanza)	August 30 th
Contact Lake	August 31 st
Sawmill Bay	September 1 st
Resupply Flight; Terra Mine	September 2 nd
Terra Mine	September 3 rd
Norex & Smallwood	September 4 th
Northrim	September 5 th
Demobilization from Site	September 6 th

For more information on the 2016 field program please refer to the Great Bear Lake Sites, Water Quality Monitoring Program, Field Program Completion Update (SLR, 2016).

The following outlines the analytical results of the 2016 water sampling program. It is noteworthy that the 2016 monitoring took place in late August/early September and represents the latest dates in the year that sampling has taken place at many of these sites. In the fall, water levels and flow rates of shallow pooled water is often lower than at other times of the year, therefore at some locations samples were only collected at one depth where multiple depths had been recommended. It was also expected that concentrations at some of these shallow sites would represent seasonal highs. However, at larger water bodies (including TCAs), metal concentrations in the fall are generally lower (suspended loads during freshet).

Sample locations are shown in drawings for each site and are located in Appendix A – Drawings. Select photographs for each site are located in Appendix D – Photographs.

Summary tables of the 2016 WQMP analytical results are in Appendix B and laboratory reports are in Appendix C. Water quality results were compared to the CCME AFW with total metals guidelines being applied to dissolved metals in the absence of specific dissolved metals guidelines. Dissolved metals samples were not collected at all sample locations. A summary of CCME exceedances are given for each site within the text.

3.0 2016 SAWMILL BAY WATER QUALITY RESULTS

3.1 Description

3.1.1 Location and History

The Sawmill Bay site is situated on the southern edge of Great Bear Lake, Northwest Territories, approximately 65 km southwest of the Port Radium mine site (Appendix A: Drawing 1). The Sawmill Bay site was originally developed to support timber requirements for the Port Radium mine and is located on the northern part of the Leith Peninsula on the eastern end of Great Bear Lake. The Sawmill Bay site is a relatively small site compared to the Silver Bear Mines but has historical significance as part of the uranium ore transportation route from Port Radium. From the mid 1940's Sawmill Bay site was used as uranium ore transfer point. Spillages during transfer operations resulted in the contamination of a few small areas at the site. Since the 1940's, the site has hosted a variety of operations including timber sawmills (pre-1946); an airfield for the trans-shipment of uranium ore (1946-1960); a base camp for a Loran Navigation system and the Royal Canadian Air Forces (RCAF) aerial mapping (late 1940s to early 1950s); a staging ground for the construction of the DEW Line (1954-1957); and a sport fishing lodge (1961-1987). Drawing 2 (Appendix A) and Photograph 1 (Appendix D) show the former Fishing Dock, Beach Landing and Arctic Enterprises locations at Sawmill Bay.

At Sawmill Bay, environmental concerns have included gamma contamination associated with historical support to Port Radium. All licensable material was removed from the site during a 1997 clean up led by Natural Resources Canada (NRCan).

3.1.2 Site Characteristics and Physical Hazards

The site comprises approximately 2038 ha (20 km²) which extends from the Beach Landing on the south shore of the bay, to the Lodge area, to the two intersecting airstrips located approximately 1,000 m inland from the tip of the bay. The site is currently abandoned, located in a remote area that has not been used for extensive industrial activities since 1987, but is still occasionally accessed by air, land, and water.

3.1.3 Surface Water

Sawmill Bay is situated in the Mackenzie watershed, Great Bear Lake Subbasin on the shore of Sawmill Bay in Great Bear Lake. The natural drainage around the site is influenced by the bedrock structure and numerous smaller lakes to the south. Locally, there is one ravine situated within the general area, located south of the airfield, running through the Main Lodge Area, and then draining into Sawmill Bay (Appendix A: Drawing 2). The ravine is inferred to act as an ephemeral creek, draining surface and lake water run-off eastward towards the bay.

The estimated change in elevation between the highest point of the site and the surface of the bay is approximately 10-15 m over a distance of 1.5 km (i.e., topographic gradient of 0.007). Surface water flow at the site is expected to follow the general topography flowing east with discharge to the creek and Sawmill Bay in Great Bear Lake (Franz Environmental 2008a,b).

3.1.4 Radiological Condition

The results of the 2007 July gamma radiation surveys and scans conducted at the Sawmill Bay site indicate that no new areas of uranium ore impacted soils have been discovered on the

Sawmill Bay site and surrounding area, and there is no evidence of uranium ore impacts discovered within any of the remaining structures (Low Level Radioactive Waste Management Office, 2007). Background gamma radiation levels for the site fall within the range of 5 to 10 µR/h. Above background radiation levels associated with uranium ore storage and handling operations are evident at three distinct locations: the Great Bear Lodge area, the southerly portion of the old airstrip and former terminal area, and at the former barge landing area.

3.2 Summary of Previous Monitoring Programs

3.2.1 Description of Past Monitoring Activities

Monitoring activity reports provided to and reviewed by SLR for this report are outlined in Table 3-1 below:

Table 3-1 Summary of Historic Documentation Reviewed – Sawmill Bay

Report Title	Date	Author / Agency
Phase I, II and III Investigations of the Historic Northern Uranium Transportation Network in the Northwest Territories and Northern Alberta (portion of report only)	September 1994	SENES Consultants Ltd. for the Low-Level Radioactive Waste Management Office (LLRWMO)
An Environmental Assessment of Sawmill Bay, NWT	March 1997	Environmental Sciences Group, Royal Military College (ESG RMC) / LLRWMO
Sawmill Bay 1997 Waste Removal Project	May 1998	McCallum, B.A. for the INAC Contaminated Sites Office (CSO)
Report on 2007 Radiological Investigations Sawmill Bay, Northwest Territories in Support of Phase IIIA Environmental Site Assessment (2007 July)	October 2007	LLRWMO
Phase IIIA Environmental Site Assessment Sawmill Bay – SM 204 Northwest Territories	March 2008	Franz Environmental Inc. for INAC – CARD
Screening - Level Risk Assessment (SLRA) Sawmill Bay – SM 204	March 2008	Franz Environmental Inc. and EcoMetrix Inc. for INAC – CARD
Detailed Environmental Site Assessment Sawmill Bay Northwest Territories NM-180	December 2008	Franz Environmental Inc. for INAC – CARD

Franz (2008) indicates that limited environmental investigations at Sawmill Bay began in 1992 with the majority of the work focusing on the impacts of uranium ore. Environment Canada inventoried the transformers present at site in 1992 and in 1993 SENES conducted the first environmental assessment at the site performing a surface gamma radiation scan to identify contaminated areas.

In 1996 the Environmental Sciences Group of the Royal Military College conducted an assessment at Sawmill with three goals:

1. to fully delineate the extent of the uranium ore contamination;
2. to identify any other chemical contamination at the site and their impacts; and
3. to identify cleanup requirements (ESG, 1997). In 1998, the LLRWMO performed a waste removal program at the site removing approximately 22 m³ of soil containing more than 500 ppm of uranium (McCallum, 1998).

Work ceased until 2007 when the LLRWMO performed gamma radiation surveys in support of a series of environmental and risk assessments that were carried out by Franz in 2007 and 2008 (LLRWMO, 2007).

3.2.2 Findings of Past Monitoring Programs

The Phase I, II, and III investigation of the historic uranium transportation network carried out by SENES in 1993 (SENES, 1994) identified several areas of elevated levels of radiation at the site including areas containing discrete pieces of uranium ore. The contamination was broadly located in three areas: the barge load out area, in front of the Great Bear Lake Lodge complex, and at one of the two airstrips. The work carried out by ESG RMC in 1996 (ESG RMC, 1997) allowed for the delineation of the three areas of radioactive contamination. In addition, an environmental site assessment was performed by ESG RMC mainly consisting of soil, plant and building materials samples with three water samples collected. Results of this program indicated that the chemical contamination present at site was generally limited to, and associated with the three areas where uranium ore was found. Arsenic was also identified as a contaminant of concern at the site (ESG RMC, 1997).

The 1997 waste removal project saw the excavation, containment (in drums), and removal of contaminated material from the site and verification testing was subsequently performed. A gamma radiation scan was performed in a grid pattern with 1 m spacing. All verification testing and radiation scans met the project targets. It should be noted that the waste removal targets did not mean that all the contamination was removed at site and as such recommendations were made to restrict access to certain areas of the site if the land use were to change (McCallum, 1998).

The 2007 radiological surveys at site confirmed that there were no additional areas of uranium impacted soils and that the remaining structures at site were free of uranium ore impacts. It reconfirmed the earlier study by SENES that outlined the three main areas of radioactivity and provided estimates of the remainder of material at site with concentrations that are less than the project remedial targets. (1,500 m³ total) (LLRWMO, 2007).

The environmental site assessments carried out by Franz confirmed the results of earlier work as well as identifying petroleum hydrocarbon impacts at the site. The reports estimated that there is approximately 13,500 m³ of localized PHC, metal and radiological impacted soil at the site (Franz 2008b). The Screening Level Risk Assessment (SLRA) determined that there is a potential risk to human health present at the Sawmill Bay site as well as to plants and animals that spend substantial time at the site, particularly to soil organisms. Alternatively the report indicated that there was little radiological risk to aquatic organisms and no evidence of PHC impacts to surface waters at the site (Franz/Ecometrix, 2008; Franz. 2008b).

3.3 2016 Water Quality Monitoring Program Results

Analytical results for the 2016 sampling at Sawmill Bay can be found in Tables B-1 through B-5 in Appendix B of this report. Background sample results from Sawmill Bay are in Tables B-6 to B-8. Sampling locations (current and historical) are shown in Appendix A: Drawing 2 (overall site), Drawing 2a focuses on the former Fishing Dock sample locations, and Drawing 2b focuses on the Beach Landing and former Arctic Enterprises sample locations. Photographs 2 to 9 in Appendix D show selected sampling locations in 2016. Surface water results for the 2016 sampling program in the former fishing dock area are shown on Drawing 2c and for the Beach Landing and former Arctic Enterprises area on Drawing 2d (Appendix A). The rationale for

sampling included: monitoring the source water, receiving waters, depth intervals within a water body, background water, and quality control/quality assurance.

Samples were collected on September 1, 2016 as follows:

Table 3-2 Samples Collected at Sawmill Bay in 2016

Sample ID	Location	Parameters	Rationale for Sampling
Lodge Dumpsite Source Monitoring			
SW07-5	Creek in ravine	Dry	Landfill/dump source monitoring
A2-SW08-03	Ponded water near dump	Dry	Landfill/dump source monitoring
A3-SW08-01	Sample from creek flowing into Sawmill Bay	GP, TM, BTEX, PHC F1-F4, Rads	Landfill/dump source monitoring
DUP 5	Duplicate of A3-SW08-01	GP, TM, BTEX, PHC F1-F4, Rads	QA/QC
A3-SW08-05-2	From outflow of creek entering Sawmill Bay at 2 m depth (too shallow for 2nd, deeper sample)	GP, TM	Receiving water downgradient of creek monitoring, depth profile
Beach Landing and Potential Debris Source Monitoring			
SW-B-2	Sample from Sawmill Bay, 2 m below surface	GP, TM, DM, BTEX, PHC F1-F4, Rads	Depth profile
DUP 4	Duplicate of SW-B-2	GP, TM, DM, BTEX, PHC F1-F4, Rads	QA/QC
SW07-3	Shoreline sample from Sawmill Bay, downgradient of MW07-4	GP, TM, DM, BTEX, PHC F1-F4, Rads	Area of PHC impacted sediment
SW16-01-2	Sample from Sawmill Bay, out from Beach Landing at 2 m depth	GP, TM, BTEX, PHC F1-F4	Receiving water environment, depth profile
SW16-01-6	Sample from Sawmill Bay, out from Beach Landing at 6 m depth	GP, TM, BTEX, PHC F1-F4, Rads	Receiving water environment, depth profile
SW16-02-2	Sample from Sawmill Bay, out from Arctic Enterprises area at 2 m depth	GP, TM	Receiving water environment, depth profile
SW16-02-6	Sample from Sawmill Bay, out from Arctic Enterprises area at 5.5 m depth	GP, TM, BTEX, PHC F1-F4	Receiving water environment, depth profile

Sample ID	Location	Parameters	Rationale for Sampling
BACKGROUND SAMPLES			
BG-SW08-01-2	Background, sample from Sawmill Bay (too shallow for second, deeper sample)	GP, TM	Depth profile, increase background database
BG-SW08-03	Background, north shoreline of Sawmill Bay	GP, TM, DM	Increase background database
BG-SW08-04	Shore sample from waterbody upgradient of Sawmill Bay	GP, TM, DM	Increase background database
BG-SW08-05	Shore sample from water body near Sawmill Bay (too shallow for second, deeper sample)	GP, TM	Increase background database

GP: General Parameters; TM: Total Metals; DM: Dissolved Metals; BTEX: Benzene, Toluene, Ethylbenzene, Xylenes; PHC F1-F4: Petroleum Hydrocarbon Fractions F1 through F4; Rads: Radionuclides; Cr-T-VI: Chromium Total then Chromium 6+

3.3.1 General Parameters

There were no exceedances of CCME AFW guidelines for General Parameters at Sawmill Bay in 2016 (Appendix B: Tables B-1 and B-6) and this is consistent with previous monitoring programs.

3.3.2 Metals

The table below summarizes the surface water exceedances for Total and Dissolved Metals at Sawmill Bay in 2016.

Table 3-3 2016 Surface Water Metals Exceedances at Sawmill Bay

Sample ID	Location	Parameter	Concentration (mg/L)	CCME AFW Guideline (mg/L)
A3-SW08-01 / DUP 5	Creek flowing into Sawmill Bay	Total Iron	2.49 / 2.18	0.3
A3-SW08-05-2	Outflow of creek entering Sawmill Bay	Total Iron	1.09	0.3

Iron exceeded CCME AFW in 2016. However, water quality effects from iron are confined to the creek and do not extend into Great Bear Lake. Note that total chromium remained below detection limits and therefore chromium speciation was not undertaken (Appendix B: Tables B-2, B-3, B-7, and B-8).

3.3.3 Hydrocarbons

Benzene, toluene, ethylbenzene, xylenes, and hydrocarbons fractions F1 through F4 were below detection limits for all sampling locations in 2016 and were not of concern historically (Appendix B: Table B-4).

3.3.4 Radionuclides

Results of testing for the presence of radioactivity – gross alpha and gross beta – were below Health Canada (2014) Guidelines for Canadian Drinking Water thresholds for further testing at all sampling locations. Given the results of the alpha/beta testing for the presence of radioactivity, further testing for lead-210 and radium-226 was not undertaken at any of the sampling locations (Appendix B: Table B-5).

4.0 2016 EL BONANZA/BONANZA WATER QUALITY RESULTS

4.1 Description

4.1.1 Location and History

The El Bonanza and Bonanza Mines are located on the Dowdell Peninsula of Great Bear Lake, approximately 435 km from Yellowknife, within the boundaries of the Sahtu Dene and Metis Comprehensive Land Claims Agreement (Appendix A: Drawing 1). The closest community to the El Bonanza/Bonanza Mines is Gamètì; however, Délı̨ne is the nearest community within the aforementioned Land Claim.

The Bonanza area was the location of the original claims in the area (in 1931) and the intention was to mine for gold. Subsequently two silver deposits were discovered and the El Bonanza Mine was created as a subsidiary of the gold mining company to mine for silver. At times underground mining took place at the El Bonanza mines interspersed with years of no activity. While uranium deposits were discovered, there is no record of uranium having been mined at the site, likely due to the pitchblende deposit being insubstantial. It is thought that milling was undertaken at Port Radium, located approximately 9 km from El Bonanza. The last record of ores being shipped from El Bonanza was in 1935.

Documented mining activities at El Bonanza continued until 1984, though further activity (such as prospecting and exploration) may have taken place after 2005.

The site is considered abandoned and has not been officially decommissioned.

4.1.2 Site Characteristics and Physical Hazards

The Bonanza and El Bonanza sites are divided into three main areas of activity connected by roads (see Drawing 3 in Appendix A):

- Bonanza mine site – located along the eastern shore of Whale Lake;
- El Bonanza mine site – located between Mile Lake and Silver Lake; and
- El Bonanza airstrip – located along the shore of Great Bear Lake.

At El Bonanza there are three open shafts and one adit, and one open shaft remains at Bonanza. In addition to these mine openings, several trenches are also present at the sites. Additional features remaining on site include multiple dumps, fuel storage tanks, miscellaneous mine equipment, and an estimated volume of 3,600 m³ of waste rock.

4.1.3 Surface Water

At El Bonanza, water flows through a culvert from Mile Lake into Silver Lake, with flow from Silver Lake being discharged via a small stream. It is believed that Mile Lake and Silver Lake were historically one water body where fill was deposited at a narrow section to provide for the construction of a road. The culvert was installed in the fill to allow for flow between the two now separated lakes. Immediately downstream of Silver Lake, flow from the stream, which is approximately 1 m wide and 0.5 m deep, passes through another culvert. Documentation shows that in 2006, debris was collected in the culvert connecting Silver Lake and Mile Lake, restricting flows.

No sources of seepage or standing water have been observed in the area of the Shaft 1 waste rock at El Bonanza. Part of the waste rock pile in the area of Shaft 2 is partially submerged in Silver Lake, to a depth of approximately 1 m.

4.2 Summary of Previous Monitoring Programs

4.2.1 Description of Past Monitoring Activities

Monitoring activity reports provided to and reviewed by SLR for this report are outlined in Table 4-1 below:

Table 4-1 Summary of Historic Documentation Reviewed – El Bonanza

Report Title	Date	Author / Agency
El Bonanza Mine Site Assessment. Report on July 2006 Field Activities and Follow-Up Site Assessment	May 2007	SENES Consultants Ltd. for INAC
El Bonanza Mine Supplemental Site Assessment. Report on June 2007 Field Activities and Follow-Up Site Assessment	December 2007	SENES Consultants Ltd. for DIAND
El Bonanza Mine Supplemental Site Assessment. Report on June 2008 Field Activities and Follow-Up Site Assessment	March 2009	SENES Consultants Ltd. for INAC
Water Quality Monitoring at Silver Bear Properties June, July and August, 2009	January 2011	WRD of INAC

The enhanced Phase I ESA by Golder provided a preliminary physical characterization of the site with a limited sampling program in a variety of media. There were only three surface water samples collected, from the shoreline areas of Mile and Silver lakes and from the shaft (SENES, 2009c).

From 2006 to 2008, SENES conducted water quality monitoring at the site including open water, shoreline, and on-land water samples as well as background/reference samples (SENES, 2007a, b, 2009b). In 2006, surface water samples were collected from two stations in Mile Lake (background); four stations in Silver Lake adjacent to the mine; two on-land stations near the Silver Lake outlet; two stations in Great Bear Lake in the vicinity of the abandoned airstrip; and, one station in Whale Lake (a vicinity lake). Four stations also included depth sampling (SENES, 2009c).

In 2007, the program was further expanded with two additional samples in Mile Lake, another in GBL, and three additional background/reference lakes (SENEs, 2007b). The 2008 program was a repeat of 2007 with one sample being dropped from the program and additional depth sampling collected (SENEs, 2009b). Sampling parameters included field parameters, general chemistry, total metals, dissolved metals and radionuclides. Radionuclides were dropped from the program in 2008 as previous results were consistently below MDL. Some BTEX and PHC fraction F1 to F4 sampling occurred in 2007 and 2008 (SENEs, 2009b, c).

In 2009, eight sites were sampled by WRD: two on Mile Lake, four on Silver Lake and two in the creek draining Silver Lake. Samples were analysed for total and dissolved metals, nutrients and physical/chemical parameters (INAC – WRD, 2011).

4.2.2 Findings of Past Monitoring Programs

The water quality in the lakes adjacent to El Bonanza is comparable to regional lakes in the area. Total metals concentrations were low and results were consistent throughout the years. There is no evidence that the mining activities here have impacted waterbodies in the area (INAC – WRD, 2011).

4.3 2016 Water Quality Monitoring Program Results

Analytical results for the 2016 sampling at Bonanza/El Bonanza can be found in Tables B-9 through B-12 in Appendix B of this report. Background sample results from El Bonanza site are in Tables B-13 to B-15. Sampling locations (current and historical) are shown in Appendix A: Drawing 3 shows the overall site; Drawing 3a focuses on the Bonanza Mine Site sample locations; Drawing 3b focuses on the El Bonanza Mine Site sample locations; and Drawing 3c focuses on the El Bonanza Airstrip sample locations. Photographs 10 to 17 in Appendix D show selected sampling locations in 2016. Surface water results for the 2016 sampling program at the Bonanza Mine Site area are shown on Drawing 3d; El Bonanza Mine Site are on Drawing 3e; and for the El Bonanza Airstrip area on Drawing 3f (Appendix A).

Samples were collected on August 30, 2016 as follows:

Table 4-2 Samples Collected at El Bonanza in 2016

Sample ID	Location	Parameters	Rationale for Sampling
Bonanza Site			
BON-SW-1	Shoreline sample at base of Bonanza mine site	GP, TM, BTEX, PHC F1-F4	Receiving environment adjacent to former mine related activities
El Bonanza Site			
ELB-SW-2	Sample from creek flowing from Silver Lake at El Bonanza Mine site	GP, TM, BTEX, PHC F1-F4	Receiving environment adjacent to former mine related activities
ELB-3-ML-2	Sample from Mile Lake at El Bonanza Mine Site - 2 meter	GP, TM	Receiving environment adjacent to former mine related activities
ELB-3-ML-10	Sample from Mile Lake at El Bonanza Mine Site - 10 meter	GP, TM	Depth profile

Sample ID	Location	Parameters	Rationale for Sampling
ELB-4-ML	Sample from Mile Lake near outflow to Silver Lake at El Bonanza Mine Site	GP, TM, BTEX, PHC F1-F4	Receiving environment adjacent to former mine related activities
ELB-5-SL-2	Sample from Silver Lake at El Bonanza Mine Site - 2 meter	GP, TM	Depth profile
ELB-5-SL-10	Sample from Silver Lake at El Bonanza Mine Site - 10 meter	GP, TM	Depth profile
ELB-6-SL	Sample from channel between Mile Lake & Silver Lake at El Bonanza Mine Site	GP, TM	Receiving environment adjacent to former mine related activities,
ELB-7-SL	Shoreline sample of Silver Lake at El Bonanza Mine Site	GP, TM, DM	Receiving water environment down gradient of waste rock, depth profile
ELB-7-SL-2	Sample from Silver Lake at El Bonanza Mine Site	GP, TM, DM, Cr-T-VI	Receiving water environment down gradient of waste rock, depth profile
ELB-8-SL	Sample from outflow of Silver Lake at El Bonanza Mine Site	GP, TM, BTEX, PHC F1-F4	Receiving environment adjacent to former mine related activities
Bonanza Airstrip			
ELB-1-GBL	Sample from shore of Great Bear Lake at El Bonanza Airstrip	GP, TM	Database
DUP 1	Duplicate sample of ELB-1-GBL	GP, TM	QA/QC
ELB-9-GBL-2	2 meter sample from Great Bear Lake at El Bonanza Airstrip (could not collect depth sample due to high winds)	GP, TM	Database

GP: General Parameters; TM: Total Metals; DM: Dissolved Metals; BTEX: Benzene, Toluene, Ethylbenzene, Xylenes; PHC F1-F4: Petroleum Hydrocarbon Fractions F1 through F4; Cr-T-VI: Chromium Total then Chromium 6+

4.3.1 General Parameters

CCME AFW guidelines for General Parameters were not exceeded in 2016.

4.3.2 Metals

Surface water exceedances for Total and Dissolved Metals at El Bonanza in 2016 were as follows:

Table 4-3 Surface Water Metals Exceedances at El Bonanza

Sample ID	Location	Parameter	Concentration (mg/L)	CCME AFW Guideline (mg/L)
ELB-4-ML	From Mile Lake near inflow to Silver Lake	Total Aluminium	0.114	0.005@pH<6.5 0.1@pH>=6.5 ¹

¹pH for sample was greater than 6.5

Note historic results do not indicate that aluminum is of concern in this location. Elevated amounts of aluminum in the 2016 field blanks indicate potential introduction during the sampling process. Note that total chromium remained below detection limits and therefore chromium speciation was not undertaken with the exception of ELB-7-SL-2 where Chromium 6+ was erroneously analysed for (total chromium: <0.001 mg/L) and found to be below the MDL of 0.001 mg/L.

4.3.3 Hydrocarbons

Benzene, toluene, ethylbenzene, xylenes, and hydrocarbons fractions F1 through F4 were below detection limits for all sampling locations in 2016 and this is consistent with previous monitoring programs.

5.0 2016 CONTACT LAKE WATER QUALITY RESULTS

5.1 Description

5.1.1 Location and History

Contact Lake Mine is an abandoned site located approximately 425 km northwest of Yellowknife, on the north shore of Contact Lake (Appendix A: Drawing 1 and Drawing 4). The site is within the boundaries of the Sahtu Dene and Metis Comprehensive Land Claims Agreement. The closest community to the El Bonanza/Bonanza Mines is Gamètì (also known as Rae Lakes, located approximate 200 km to the south), however, Délı̨nę is the nearest community within the aforementioned Land Claim.

The Contact Lake Mine was operated for various periods from 1930 to 1980, as a silver mine initially, but later was the site of uranium mining and exploration. The site has not been officially decommissioned.

Environmental and monitoring assessments, including water quality monitoring, have been undertaken at Contact Lake at varying intervals from 1992 to 2009.

5.1.2 Site Characteristics and Physical Hazards

Historic site activities have been spread over three main areas:

- A fuel storage area – located northwest of the camp and main mine site, along the shores of Great Bear Lake, Echo Bay East Arm;
- The camp – located generally west of the main mine site; and
- The main mine site – located east of the camp area, in the general vicinity of Contact Lake.

The main features that remain onsite include a mine adit, a ventilation shaft, various buildings including an office and storage sheds, fuel storage tanks, and over 30,000 m³ of water rock.

Two dump locations are situated between Contact Lake and the former cabin locations. The dock is downgradient of the camp along the Contact Lake shoreline.

A road connects the camp and main mine area to the fuel storage area on the East Arm of Great Bear Lake. Historically fuel was transported to this site by boat. An aboveground fuel

storage tank remains onsite, containing an estimated volume of 3,250 L of oily water, with the hydrocarbon fractions in the diesel range. A dock remains in this area as well, along with a submerged former dock. In addition to the storage tank, a boiler, with an asbestos-containing insulation pad, remains in place.

5.1.3 Surface Water

Upper Lake is located upgradient and north from the main mine site. Water quality in Upper Lake has been consistently sampled at the same site (CL-1) since at least 2006. It is unclear whether or not this lake is suitable as a background or reference site, as dust may have been deposited there during mining operations. Extractable Petroleum Hydrocarbons (EPH) were detected in Upper Lake water samples in 2006.

At the main mine site, water generally flows from the toe of the waste rock pile located below the adit, through the tailings wetland to the tailings pond. From the tailings pond, water drains via a stream to Contact Lake. The highest levels of metals in water, radionuclides in water and gamma radiation have been measured in this area. EPH have also been detected in the tailings pond sediments.

Contact Lake is a deep lake with depths exceeding 20 m in many areas. A shoreline survey conducted in 2007 found little debris along the shore and most of what was observed was not expected to present any chemical hazards to the environment. Four fuel drums in good condition were observed along the shore, in addition to one rusted barrel in the water. Aquatic life studies found that the lake is home to lake trout.

5.1.4 Radiological Conditions

Radionuclides at Contact Lake have been detected in past monitoring events, with some exceedances of the Canadian Drinking Water Guidelines being reported.

5.2 Summary of Previous Monitoring Programs

5.2.1 Description of Past Monitoring Activities

Monitoring activity reports provided to and reviewed by SLR for this report are outlined in Table 5-1 below:

Table 5-1 Summary of Historic Documentation Reviewed – Contact Lake

Report Title	Date	Author / Agency
Contact Lake Mine Site Assessment. Report on July 2006 Field Activities and Follow-Up Site Assessment	November 2006	SENES Consultants Ltd. for the Department of Indian Affairs and Northern Development (DIAND)
Human Health and Ecological Risk Assessment for Contact Lake Mine Site	May 2007	SENES Consultants Ltd. for DIAND
Final - Contact Lake Mine Supplemental Site Assessment. Report on June 2007 Field Activities and Follow-Up Site Assessment	2007, Revised March 2008	SENES Consultants Ltd. for DIAND
Contact Lake Mine Supplemental Site Assessment. Report on June 2008 Field Activities and Follow-Up Site Assessment	March 2009	SENES Consultants Ltd. for INAC
Water Quality Monitoring at Silver Bear Properties June, July and August, 2009	January 2011	Water Resources Division (WRD) of INAC

According to SENES (SENES, 2009c), the EBA sampling program completed in September 1992 included 15 water sampling locations. SENES did not use the data from this program any further in their work due to unclear details of the program and inconsistent sampling stations with the work done in later years.

The work carried out by INAC - WRD between 2002 and 2005 included sampling in a variety of media on five different dates according to SENES; however, they only discuss the surface water sampling program in their description of past monitoring programs in Appendix G (SENES, 2009c). It appears from Appendix G that the number of sampling locations increased slightly in 2005 when compared to the other years with some additional depth sampling in the Tailings Pond and Contact Lake Background samples were taken from regional lakes in 2007, 2008, and 2009. Parameters analysed included general chemistry, total and dissolved metals, radionuclides and petroleum hydrocarbons. Field measurements were only taken in 2005 at stations where depth sampling occurred. Samples for petroleum hydrocarbons were not collected in 2005.

In 2006 and 2007, SENES expanded the Contact Lake program in order to better define and characterize site conditions (SENES, 2006 and 2007c). In 2006, surface water samples were collected from eleven stations in Contact Lake, the East Arm of GBL, and ponded and runoff surface water including Upper Lake, Tailings Pond and from the waste rock pile. Two stations in Contact Lake experienced depth sampling as did one in Upper Lake and one in Tailings Pond. Two additional background/reference stations were also added (SENES, 2006, 2007c, 2009c).

In 2007, five additional open water stations were sampled in Contact Lake, two more in the East Arm of Great Bear Lake, and two from on-land water bodies (upstream of inflow to Tailings Pond and in the bog). Four reference lakes were added to the program with two samples collected from each, and additional depth sampling took place in Contact Lake and the East Arm. Work in 2008 by SENES was virtually the same as in 2007 (SENES 2009a).

The 2009 sampling program was based on the previous work by SENES and carried out by INAC - WRD. In total, seventeen sites were sampled: six at the mine site, nine on Contact Lake and two on the East Arm of GBL. Samples were analysed for total and dissolved metals, nutrients, physical/chemical parameters and radionuclides (INAC – WRD, 2011).

5.2.2 Findings of Past Monitoring Programs

The results of these historic studies have been consistent, with elevated concentrations of some metals in the surface water on site (i.e. shallow standing water, the tailings pond and discharge stream). However it does not appear that the water quality of Contact Lake or Great Bear Lake (Echo Bay) has been affected by mine runoff (SENES, 2009c; INAC – WRD, 2011).

5.3 2016 Water Quality Monitoring Program Results

Analytical results for the 2016 sampling at Contact Lake can be found in Tables B-16 through B-20 in Appendix B of this report. Background sample results from Contact Lake site are in Tables B-21 to B-24. Sampling locations (current and historical) are shown in Appendix A: Drawing 4 shows the overall site; Drawing 4a focuses on the East Arm Fuel Storage Area sample locations; and Drawing 4b focuses on the Contact Lake sample locations. Photographs 18 to 31 in Appendix D show selected sampling locations in 2016. Surface water results for the 2016 sampling program in the East Arm Fuel Storage Area are shown on Drawing 4c and Contact Lake on Drawing 4d.

Samples were collected on August 31, 2016 as follows:

Table 5-2 Samples Collected at Contact Lake in 2016

Sample ID	Location	Parameters	Rationale for Sampling
Echo Bay			
CL-7-EA-2M	Shoreline (dock) sample from East Arm (too shallow for second, deeper sample)	GP, TM, DM, BTEX, PHC F1-F4, Rads	Receiving environment adjacent to fuel tanks
CL-27-EA	Shoreline sample from East Arm	GP, TM, DM	Receiving environment adjacent to fuel tanks
CL-16-EA-2M	Sample from East Arm (2 m depth)	GP, TM, DM, Rads	Depth profile, increase background database
CL-16-EA-10M	Sample from East Arm (10 m depth)	GP, TM, DM, Rads	Depth profile, increase background database
Contact Lake			
CL-2	Sample near seep from waste rock	GP, TM, Cr-T-VI, BTEX, PHC F1-F4, Rads	Waste rock source monitoring
CL-2B	Sample from creek running into Contact Lake	GP, TM, Rads	Receiving environment adjacent to former mine related activities
CL-3	Sample from outflow of pond	GP, TM, DM, Cr-T-VI, Rads	Pond source monitoring
DUP 2	Duplicate of CL-3	GP, TM	QA/QC
CL-5	Sample from creek flowing into Contact Lake – Historically sampled from shoreline	GP, TM, DM, Rads	Receiving environment adjacent to former mine related activities
DUP 3	Duplicate of CL-5	GP, TM, DM	QA/QC

Sample ID	Location	Parameters	Rationale for Sampling
CL-9	Shoreline sample from Contact Lake	GP, TM	Receiving environment adjacent to former mine related activities
CL-15	Sample from north side of tailings pond	GP, TM, Cr-T-VI, BTEX, PHC F1-F4, Rads	Tailings pond source monitoring
CL-24	Shoreline sample from Contact Lake	GP, TM, Cr-T-VI, BTEX, PHC F1-F4, Rads	Receiving environment adjacent to former mine related activities
CL-26-2M	Sample from Contact Lake near outflow of creek (too shallow for 2 nd , deeper sample)	GP, TM, Rads	Receiving environment adjacent to former mine related activities
Background			
CL-8-2M	Shoreline background sample from Contact Lake (unable to collect second sample at depth)	GP, TM, Rads	Increase background database
CL-14	New background shoreline sample from Contact Lake (different than previously established CL-14 location)	GP, TM, Rads	Increase background database
RL-4A - 2M	Background Thompson Lake - Not collected due to time constraints		Increase background database
RL-4A - 10M	Background Thompson Lake - Not collected due to time constraints		Increase background database

GP: General Parameters; TM: Total Metals; DM: Dissolved Metals; BTEX: Benzene, Toluene, Ethylbenzene, Xylenes; PHC F1-F4: Petroleum Hydrocarbon Fractions F1 through F4; Rads: Radionuclides; Cr-T-VI: Chromium Total then Chromium 6+

5.3.1 General Parameters

There were no exceedances of CCME AFW guidelines for General Parameters at Contact Lake in 2016.

5.3.2 Metals

Surface water exceedances for Total and Dissolved Metals at Contact Lake in 2016 were as follows:

Table 5-3 2016 Surface Water Exceedances at Contact Lake

Sample ID	Location	Parameter	Concentration (mg/L)	CCME AFW Guideline (mg/L)
CL-2	Main Mine, stream draining from waste rock to tailings pond	Total Arsenic	0.0811	0.005
		Total Copper	0.131	0.002 ²
		Total Mercury	0.000276	0.000026
		Total Silver	0.0019	0.00025
		Total Uranium	0.156	0.015
CL-2B	Stream between Tailings Pond and Contact Lake	Total Arsenic	0.0124	0.005
		Total Copper	0.00846	0.002 ²
		Total Uranium	0.0328	0.015
CL-3 / DUP 2 ^a	Main Mine, tailings pond outflow	Total Arsenic	0.0105 / 0.0109	0.005
		Total Copper	0.00869 / 0.00899	0.002 ²
		Total Uranium	0.0358 / 0.0359	0.015
		Dissolved Arsenic	0.0101	0.005
		Dissolved Copper	0.00655	0.002 ²
		Dissolved Uranium	0.0338	0.015
CL-5 / DUP 3	Creek at confluence of tailings area drainage and Contact Lake	Total Arsenic	0.0084 / 0.00858	0.005
		Total Copper	0.00765 / 0.00755	0.002 ²
		Total Uranium	0.028 / 0.0316	0.015
		Dissolved Arsenic	0.0081 / 0.00795	0.005
		Dissolved Copper	0.00695 / 0.0075	0.002 ²
		Dissolved Uranium	0.0301 / 0.0302	0.015
CL-15	Main Mine tailings wetland outflow / inflow into the Tailings Pond	Total Arsenic	0.0277	0.005
		Total Copper	0.0393	0.003 ⁴
		Total Silver	0.000436	0.00025
		Total Uranium	0.127	0.015
CL-27-EA	Shoreline sample from East Arm	Dissolved Mercury	0.000027	0.000026
		Total Mercury	<0.00001	

^a DUP 2 was not sampled/analyzed for Dissolved Metals

¹pH for sample was greater than 6.5

²Hardness for sample was less than 120 mg/L

³Hardness for sample was between 60 and 120 mg/L

⁴Hardness for sample was between 120 and 180 mg/L

⁵Hardness for sample was greater than 180 mg/L

Although parameters were greater than AFW guidelines in the impacted area the impacts were not observed in the lake. Note that total chromium remained below detection limits and therefore chromium speciation was not undertaken. Additionally, CL-5 was sampled in the creek but was historically sampled at the shoreline of the lake.

5.3.3 Petroleum Hydrocarbons

Benzene, toluene, ethylbenzene, xylenes, and hydrocarbons fractions F1 through F4 were below detection limits for all sampling locations which is generally consistent with historic monitoring programs.

5.3.4 Radionuclides

Results of testing for the presence of radioactivity – gross alpha and gross beta – were below Health Canada (2014) Guidelines for Canadian Drinking Water thresholds for further testing at all sampling locations except:

- The following source locations:
 - Main Mine, stream draining from waste rock to tailings pond (CL-2),
 - Main Mine, tailings pond outflow (CL-3), and
 - Main Mine, tailings wetland outflow / inflow into Tailings Pond (CL-15)
- One receiving water location:
 - Contact Lake shoreline, where flow from the tailings area has its confluence with Contact Lake (CL-5)

Further testing for radium-226 and lead-210 was undertaken at the above sampling locations. The guideline values of 0.5 and 0.2 Bq/L, respectively, were not exceeded at any of the sampling locations.

Given the results of the alpha/beta testing for the presence of radioactivity, further testing for lead-210 and radium-226 was not undertaken at any of the other sampling locations.

6.0 2016 SILVER BEAR - TERRA MINE WATER QUALITY RESULTS

6.1 Description

6.1.1 Location and History

Terra Mine is situated approximately 390 km northwest of Yellowknife, on a peninsula between the south shore of the Camsell River (at a section of the river known as Rainy Lake) and the north shore of Ho-Hum TCA (Appendix A: Drawing 1, Drawing 5 and Drawing 5a). Mining at Terra commenced in the late 1960s when high-grade silver and rich copper veins were discovered in the area. Regular milling began in 1969 and the mill increased processing of ore to 400 tons per day in 1983. Depressed silver prices caused the suspension of the silver production in April 1985 after more than 16 million ounces of silver had been extracted from the area along with secondary metal recovery of copper and bismuth.

6.1.2 Site Characteristics and Physical Hazards

Mine site features remaining include:

- Submerged tailings in Ho-Hum TCA;
- Land-based tailings along the north shore of Ho-Hum TCA;
- Coarse waste rock distributed throughout the site, including in the road bases, and as construction material at the airstrip located at Moose Bay;
- Mine adits;
- Former dock at Rainy Lake (Camsell River);
- Two landfills located along the road to the Norex and Smallwood mine sites, adjacent to Jackfish Bay;
- An airstrip, along the north shore of the drainage from Ho-Hum Lake to Moose Bay; and
- A vent shaft.

6.1.3 Surface Water

The Camsell River originates from Sarah Lake and travels approximately 240 km before draining to the McTavish Arm of Great Bear Lake. Terra Mine is situated in a bend of the Camsell River, between Camsell River's Jackfish Bay and Moose Bay. Along the linear path between the two bays, Little Ho-Hum Lake flows to Ho-Hum TCA. Ho-Hum TCA then drains to Moose Bay.

All mine and mill discharges were directed into Ho-Hum TCA throughout operation. There are submerged tailings in Ho-Hum TCA and land-based tailings along its north shore. There is a dam and control structure constructed at the lake's outlet to minimise uncontrolled releases from Ho-Hum TCA. While the control structure, a decant with a v-notch weir, once controlled the flow from Ho-Hum TCA into the Camsell River via Moose Bay. Presently, the flows are no longer contained, nor controlled. There are two wetlands located upstream and downstream of the weir, the Upper and Lower Wetlands respectively. In 2010, there were no flows observed from Ho-Hum TCA to Moose Bay; rather it appeared that Moose Bay flows were backing up into the weir.

There are two landfill sites located along the service road to the Norex and Smallwood mine sites that are adjacent to Jackfish Bay, of which one has a small pond on the east side (T-18), and a pond (T-25) formed by inflow from a culvert (T-17) and potential leachate from the landfill.

6.2 Summary of Previous Monitoring Programs

6.2.1 Description of Past Monitoring Activities

Monitoring activity reports provided to and reviewed by SLR for this report are outlined in Table 6-1 below:

Table 6-1 Summary of Historic Documentation Reviewed – Terra Mine

Report Title	Date	Author / Agency
Water Quality Monitoring at Silver Bear Properties September 2002, June 2003 and June, August & September 2004	March 2005	INAC - WRD for INAC – CARD
Water Quality Monitoring at Silver Bear Properties June, July and August, 2005	February 2006	INAC - WRD for INAC – CARD
Water Quality Monitoring at Silver Bear Properties June, July and August, 2006	April 2007	INAC - WRD for INAC – CARD
Water Quality Monitoring at Silver Bear Properties June, July and August, 2007	November 2008	INAC - WRD for INAC – CARD
Water Quality Monitoring at Silver Bear Properties June and August, 2008	February 2009	INAC - WRD for INAC – CARD
Water Quality Monitoring at Silver Bear Properties June, July and August, 2009	January 2011	INAC – WRD for INAC – CARD

Report Title	Date	Author / Agency
2013 Water Quality Monitoring of Terra Mine Northwest Territories, Canada - DRAFT	February 2013	WRD of Aboriginal Affairs and Northern Development Canada (AANDC)
Site-Specific Target Level for Arsenic in Surface Waters Associated with the Terra Mine Wetland	March 2014	SENES Consultants Ltd for Public Works and Government Services Canada (PWGSC)
Mass Balance and Flux Estimates for Arsenic Environmental Loading to Ho Hum Lake and the Camsell River from the Silver Bear Terra Minesite, Northwest Territories, Canada	March 2015	Hemmera Envirochem Inc. for PWGSC
2015 Water Quality Monitoring of Terra Mine Report, Northwest Territories Canada	March 2016	Arcadis for Aboriginal Affairs and Northern Development Canada

Sampling at Terra Mine occurred consistently between 2002 and 2009, with an additional sampling event in 2013. Desktop studies pertaining specifically to the arsenic contamination at the site were completed in 2014 and 2015 by SENES and Hemmera Envirochem (Hemmera, 2015) respectively.

According to SENES (2009c), sampling at Terra has typically included Ho-Hum TCA, Little Ho-Hum Lake, stations in the Camsell River (including Jackfish Bay, Rainy Lake and Moose Bay) and several on-land stations including water associated with the stream draining to Jackfish Bay, landfill leachate, four adits, and the vent shaft. Both shoreline and open water sampling have occurred in Ho-Hum TCA with depth sampling occurring during each sampling event, and transect sampling from the shore to the middle of the lake in the vicinity of the fuel drums in 2006. From 2002 to 2013, some additional sampling was undertaken to investigate arsenic and copper concentrations in the outflow area of Moose Bay and levels of EPH in the vicinity of the old dock and to derive a site-specific target level for arsenic in surface water associated with the Terra wetland (SENES, 2014).

6.2.2 Findings of Past Monitoring Programs

From 2002 to 2004 the main contaminants of concern at the Terra Mine were arsenic and copper with results from 2005 indicating there were high levels of arsenic, copper and other metals in the inflow to Moose Bay from the Ho-Hum Tailings Containment Area (TCA). Sampling further downstream showed that metals concentrations reached background levels before reaching the end of the airstrip, prior to entering the main flow of the Camsell River (SENES, 2009c). The high concentrations of arsenic in the Ho-Hum TCA and Moose Bay were attributed to both waste rock and tailings.

The 2009 sampling event confirmed that elevated arsenic and copper concentrations were present at the site with along with elevated aluminum during the June event. Additional contamination was identified in the adit and vent shaft samples with additional elevated concentrations of cadmium, lead, silver and zinc in the Open Pit Adit, and elevated copper and lead in the Vent Shaft (INAC – WRD, 2011).

Findings from the 2013 sampling event were in line with previous years' results with arsenic and copper remaining the main contaminants of concern. Little to no change in copper levels and a slight decrease in arsenic in Ho-Hum Lake has been observed. It was concluded that the berm, weir and small wetland area above the outlet of Ho-Hum Lake is having a positive effect on

water quality with respect to the uptake of metals. Metals concentrations return to background levels at the mid-way point of Moose Bay with generally good water quality found downstream in Camsell River. The airstrip constructed with waste rock has been identified as a remaining, potential source of metals (INAC - WRD, 2013).

The later desktop studies of arsenic at the Terra Mine indicate that the waste rock, sub-aerial tailings and/or underground workings continue to be a source of arsenic loading at the site. Sub-aerial tailings are located on the ground surface and not submerged below the water level. Hemmera identified the submerged tailings in Ho-Hum TCA remains the major source, on an order of magnitude greater than that of the waste rock or sub-aerial tailings combined (Hemmera, 2015). In their work, SENES proposed a site-specific target level of 78 µg/L for arsenic in water at the outlet of the wetland. This value is representative of the protection of 95% of the aquatic species (SENES, 2014).

6.3 2016 Water Quality Monitoring Program Results

Analytical results for the 2016 sampling at Terra Mine can be found in Tables B-25 through B-28 in Appendix B of this report. Background sample results from Terra site are in Tables B-29 to B-31. Sampling locations (current and historical) are shown in Appendix A: Drawing 5 shows the overall Silver Bear site and Drawing 5a focuses on the Terra sample locations. Photographs 32 to 51 in Appendix D show select sampling locations in 2016. Surface water results for the 2016 sampling program in the Terra area are shown on Drawing 5e. Sample locations T19 and Two are from adits and are not compared to CCME guidelines, however the locations are noted in the tables if elevated concentrations are present.

Samples were collected on September 2 – 3, 2016 as follows:

Table 6-2 Samples Collected at Terra Mine in 2016

Sample ID	Location	Parameters	Rationale for Sampling
Jackfish Bay			
T1	Shore sample of Jackfish Bay	GP, TM	Receiving environment adjacent to former mine related activities
DUP 6	Duplicate of T1	GP, TM	QA/QC
T17	Sample near culvert by landfill	GP, TM	Landfill source monitoring
T18	Sample from pond near landfill	GP, TM, BTEX, PHC F1-F4	Landfill source monitoring
T25	Sample from pond near landfills	GP, TM, BTEX, PHC F1-F4	Landfill source monitoring
Moose Bay			
T6 ¹	Client requested in field: Seep out of waste rock into Lower Wetland near weir	GP, TM, BTEX, PHC F1-F4	Waste rock source monitoring
T10	Shoreline sample of Moose Bay near airstrip	GP, TM	Receiving environment adjacent to former mine related activities

Sample ID	Location	Parameters	Rationale for Sampling
Ho-Hum and Little Ho Hum Lakes			
T2	Shore sample from Little Ho-Hum Lake	GP, TM, Cr-T-VI	Receiving environment adjacent to former mine related activities
T3	Shore sample of Ho-Hum TCA near tailings	GP, TM, BTEX, PHC F1-F4	Receiving environment adjacent to tailings
T5	Ho-Hum TCA west end of north shore below the mill	GP, TM, BTEX, PHC F1-F4	Receiving environment adjacent to former mine related activities
T7	Ho-Hum TCA open water downstream of inflow from Little Ho-Hum Lake	GP, TM	Receiving environment adjacent to former mine related activities
T8A	Sample from Ho-Hum TCA, downstream of mine, upstream of outflow – at surface	GP, TM, DM, Cr-T-VI, BTEX, PHC F1-F4	Receiving environment adjacent to former mine related activities
T8B	Sample from Ho-Hum TCA, downstream of mine, upstream of outflow – at 5 m depth	GP, TM, DM, Cr-T-VI	Receiving water environment down gradient of mine related activities, depth profile
T8C	Sample from Ho-Hum TCA, downstream of mine, upstream of outflow – at 10 m depth	GP, TM, DM, Cr-T-VI	Receiving water environment down gradient of mine related activities, depth profile
T9	Shoreline sample from Ho-Hum TCA by weir	GP, TM, Cr-T-VI	Receiving environment adjacent to former mine related activities
T16-2M	Sample from Ho-Hum TCA - 2 meter	GP, TM, DM	Receiving water environment down gradient of mine related activities, depth profile
DUP 7	Duplicate of T16-2M	GP, TM, DM	QA/QC
T16-10M	Sample from Ho-Hum TCA - 10 meter (actually collected at 6 m)	GP, TM, DM	Receiving water environment down gradient of mine related activities, depth profile
Camsell River			
T4	Shore sample of Camsell River near dock	GP, TM	Receiving environment adjacent to former mine related activities
T19	Sample of surface water in front of adit (historic T20 location?), no flow observed	GP, TM	Mine source monitoring
T19B	Shoreline sample of Camsell River near water intake (historic T19 location?)	GP, TM, DM	Receiving environment adjacent to former mine related activities
T20	Surface water sample in front of adit (historic T21 location), no flow observed	GP, TM, BTEX, PHC F1-F4	Mine source monitoring
W-4	Vent shaft adit – no sample, unable to retrieve water (frozen)		Mine source monitoring

Sample ID	Location	Parameters	Rationale for Sampling
Background			
R2	Background sample – Not collected as site was inaccessible		Increase background database
R3	Shoreline sample from Tutcho Lake	GP, TM, BTEX, PHC F1-F4	Increase background database
R4	Sample of Camsell River upstream of Northrim	GP, TM, BTEX, PHC F1-F4	Increase background database

GP: General Parameters; TM: Total Metals; DM: Dissolved Metals; BTEX: Benzene, Toluene, Ethylbenzene, Xylenes; PHC F1-F4: Petroleum Hydrocarbon Fractions F1 through F4; Rads: Radionuclides; Cr-T-VI: Chromium Total then Chromium 6+

¹ Note: 2016 sample taken in a different location to previous monitoring programs

6.3.1 General Parameters

Total ammonia has been historically elevated and variable; however, CCME AFW guidelines for ammonia were not exceeded in 2016.

6.3.2 Metals

Surface water exceedances for Total and Dissolved Metals at Terra Mine in 2016 were as follows:

Table 6-3 2016 Surface Water Metals Exceedances at Terra Mine

Sample ID	Location	Parameter	Concentration (mg/L)	CCME AFW Guideline (mg/L)
T2	Shoreline sample from Little Ho-Hum Lake	Total Arsenic	0.00619	0.005
		Total Copper	0.00648	0.002 ²
T3	Shoreline sample from Ho-Hum TCA near tailings	Total Arsenic	0.0841	0.005
		Total Copper	0.00943	0.002 ²
		Total Lead	0.00357	0.002 ³
T5	Ho-Hum TCA west end of north shore below the mill	Total Arsenic	0.0736	0.005
		Total Copper	0.00887	0.002 ²
T6	Shoreline sample of Moose Bay near weir	Total Aluminum	0.297	0.1 ¹
		Total Arsenic	0.116	0.005
		Total Copper	0.124	0.002 ²
		Total Iron	1.28	0.3
		Total Lead	0.00696	0.002 ³
		Total Silver	0.00043	0.00025
		Total Zinc	0.0977	0.03
T7	Ho-Hum TCA, open water downstream of inflow from Little Ho-Hum Lake	Total Arsenic	0.0693	0.005
		Total Copper	0.00773	0.002 ²

Sample ID	Location	Parameter	Concentration (mg/L)	CCME AFW Guideline (mg/L)
T8A	Ho-Hum TCA, open water downstream of mine, upstream of outflow-surface	Total Arsenic	0.0668	0.005
		Total Copper	0.00778	0.002 ²
		Dissolved Arsenic	0.0718	0.005
		Dissolved Copper	0.0076	0.002 ²
T8B	Ho-Hum TCA, open water downstream of mine, upstream of outflow – 5 m below surface	Total Arsenic	0.0717	0.005
		Total Copper	0.00772	0.002 ²
		Dissolved Arsenic	0.0709	0.005
		Dissolved Copper	0.00774	0.002 ²
T8C	Ho-Hum TCA, open water downstream of mine, upstream of outflow – 12 m below surface	Total Arsenic	0.0801	0.005
		Total Copper	0.00775	0.002 ²
		Dissolved Arsenic	0.0763	0.005
		Dissolved Copper	0.00727	0.002 ²
T9	Shoreline sample of Ho-Hum TCA by weir	Total Arsenic	0.0417	0.005
		Total Copper	0.00404	0.002 ²
T10	Shoreline sample of Moose Bay	Total Arsenic	0.00898	0.005
T16-2M / DUP 7	Sample from Ho-Hum TCA - 2 meter	Total Arsenic	0.0685 / 0.0709	0.005
		Total Copper	0.0073 / 0.00775	0.002 ²
		Dissolved Arsenic	0.07 / 0.0707	0.005
		Dissolved Copper	0.00727 / 0.00767	0.002 ²
T16-10M	Depth sample from Ho-Hum TCA (actually collected at 6 m)	Total Arsenic	0.0721	0.005
		Total Copper	0.00767	0.002 ²
		Dissolved Arsenic	0.0705	0.005
		Dissolved Copper	0.00749	0.002 ²
T17	Sample near culvert by landfill	Total Copper	0.00902	0.002 ²
T18	Sample from pond near landfill	Total Arsenic	0.0311	0.005
		Total Iron	3.63	0.3
		Total Zinc	0.165	0.03
T19	Sample of surface water in front of adit	Total Aluminum	0.139	---
		Total Arsenic	0.145	---
		Total Copper	0.0207	---
T20	Surface water sample in front of adit	Total Arsenic	0.0312	---
T25	Sample from pond near landfills	Total Iron	0.601	0.3

¹pH for sample was greater than 6.5

²Hardness for sample was less than 120 mg/L

³Hardness for sample was between 60 and 120 mg/L

⁴Hardness for sample was between 120 and 180 mg/L

⁵Hardness for sample was greater than 180 mg/L

Exceedances have been consistent throughout historic monitoring programs with a few exceptions. Sample T-10 results in 2016 are higher than normal; a potential explanation could be increased mixing due to wind activity, although this cannot be confirmed as no weather data

was recorded. Samples T-19 and T-20 also have elevated metals, however, there are no CCME guidelines for adit water. Note that total chromium remained below detection limits and therefore chromium speciation was not undertaken.

6.3.3 Hydrocarbons

Benzene, toluene, ethylbenzene, xylenes, and hydrocarbons fractions F1 through F4 were below detection limits for all sampling locations and this is consistent with historic monitoring programs.

7.0 2016 SILVER BEAR - NORTHRIM WATER QUALITY RESULTS

7.1 Description

7.1.1 Location and History

The Northrim Mine, located on the north shore of the Camsell River (Appendix A: Drawing 1, Drawing 5, and Drawing 5b), operated a mill as of 1971 in the production of silver and bismuth. The mine operated intermittently between 1971 and 1977, and was subsequently taken over by the Terra Mining and Exploration Limited although further production did not occur.

7.1.2 Site Characteristics and Physical Hazards

Features that remain include an underground, mill, a tank farm, three adits, several support buildings, leachate ponds, and an estimated 6,500 m³ of waste rock.

Oxidised, fine-grained tailings materials were observed in the muskeg area south and adjacent to Hermandy Lake. The volume of tailings potentially deposited in the area is unclear, and may lie under waste rock. A tailings beach was found on the far north side of Hermandy Lake, after following a pipe from the mill towards the lake. It is likely that the tailings pipe was floated into the lake and that much of the tailings remain submerged.

7.1.3 Surface Water

Hermandy Lake is upgradient of the mill and drains to the Camsell River. It is relatively shallow, with tea-coloured water, and an abundance of vegetation, macroinvertebrates (at upper levels) and decaying organic matter. Hermandy Lake is stratified, and has been shown to have dissolved oxygen levels at lower depths that are insufficient to support fish life and would also stress macroinvertebrates.

Water drains from Hermandy Lake through muskeg to two connected leachate ponds (collectively referred to as the Leachate Pond), and subsequently into the Camsell River. The Leachate Pond is located between a landfill and an area with suspected tailings covered with waste rock. Like Hermandy Lake, the water in the leachate pond is tea-coloured and contains an abundance of decaying organic matter.

Downstream of the Leachate Pond, water passes by areas with fuel drums and decaying mining equipment en route to the Camsell River. Flow is visible at the surface for a portion of the flow path then disappears as it drains into rock. Based on topography, discharge to the Camsell River is assumed, with an outlet point estimated based on surface topography.

In addition to flow from Hermandy Lake, mine adit water discharges to the Camsell River either via surface or subsurface flow, depending on the time of year and general hydraulic conditions.

7.2 Summary of Previous Monitoring Programs

7.2.1 Description of Past Monitoring Activities

Monitoring activity reports provided to and reviewed by SLR for this report are outlined in Table 7-1 below:

Table 7-1 Summary of Historic Documentation Reviewed – Northrim Mine

Report Title	Date	Author / Agency
Water Quality Monitoring at Silver Bear Properties September 2002, June 2003 and June, August & September 2004	March 2005	INAC - WRD for INAC – CARD
Water Quality Monitoring at Silver Bear Properties June, July and August, 2005	February 2006	INAC - WRD for INAC – CARD
Water Quality Monitoring at Silver Bear Properties June, July and August, 2006	April 2007	INAC - WRD for INAC – CARD
Water Quality Monitoring at Silver Bear Properties June, July and August, 2007	November 2008	INAC - WRD for INAC – CARD
Water Quality Monitoring at Silver Bear Properties June and August, 2008	February 2009	INAC - WRD for INAC – CARD
Water Quality Monitoring at Silver Bear Properties June, July and August, 2009	January 2011	INAC - WRD for INAC – CARD

Like Norex, Northrim was sampled consistently between 2002 and 2009 with a program that also became more robust in later years. Samples were collected from Hermandy Lake and its outlet stream, the leachate pond, the drainage from the mine adit, and the Camsell River. At the north end of Hermandy Lake, where tailings are present, depth sampling generally occurred. Samples were analysed for general chemistry and total metals, with dissolved metals being analysed for between 2002 and 2004, and again in 2007 and 2008. BTEX and EPH were typically analysed between 2002 and 2004, with analysis being limited to EPH starting in 2005. In 2008 an extensive petroleum hydrocarbon program was undertaken (SENES, 2009c).

In 2009, sample locations were consistent with previous years with the addition of a sample collected from a pipe approximately 10 m from the Camsell River, near station NO-6 (INAC – WRD, 2011).

7.2.2 Findings of Past Monitoring Programs

From 2002 to 2004 concentrations of arsenic, copper, lead, iron and zinc regularly exceeded guidelines at Northrim. From 2005 to 2007 these same exceedances were observed with the addition of aluminum and cadmium exceedances. It was determined that water with elevated concentrations of these metals was draining into the Camsell River from the mine adit and the Hermandy Lake outlet stream; however, they did not appear to have an appreciable impact on the overall river water quality (SENES, 2009c).

According to WRD (INAC – WRD, 2011), analysis indicates arsenic may be entering the system somewhere between Hermandy Lake and the Leachate Pond. As well, they concluded that copper concentrations are dropping between Hermandy Lake and the Leachate Pond, however, they are increasing again between the pond and the outlet stream. They also conclude that rainfall and snowmelt may be mobilizing contaminants contained in buried tailings around the site. Lead concentrations fluctuated throughout the years and there are likely sources of zinc contamination between Hermandy Lake and the Leachate Pond, and between the Leachate Pond and the outlet stream.

INAC - WRD also indicated that the water quality where the outlet stream enters the Camsell River is of concern with metals concentrations, particularly copper and lead, exceeding CCME guidelines. The adit (NO-1) and downstream pool showed arsenic, cadmium, copper and lead contamination. However, the Camsell River monitoring station (NO-5) showed results consistent with background suggesting that impacts to Camsell River from the adit and pool have not occurred. Hydrocarbon contamination in the sediments in the area of the dock was also noted (INAC – WRD, 2011).

7.3 2016 Water Quality Monitoring Program Results

Analytical results for the 2016 sampling at Northrim can be found in Tables B-32 through B-35 in Appendix B of this report. Sampling locations (current and historical) are shown in Appendix A: Drawing 5 shows the overall Silver Bear site and Drawing 5b focuses on the Northrim sample locations. Photographs 52 to 61 in Appendix D show select sampling locations in 2016. Surface water results for the 2016 sampling program in the Northrim area are shown on Drawing 5f.

Samples were collected on September 5, 2016 as follows:

Table 7-2 Samples Collected at Northrim in 2016

Sample ID	Location	Parameters	Rationale for Sampling
Camsell River			
NO-1	Pooled water connected to Camsell River downgradient from waste rock	GP, TM, DM, Cr-T-VI, BTEX, PHC F1-F4	Waste rock source monitoring
NO-4	Sample of stream flowing from leachate pond	GP, TM, DM, Cr-T-VI, BTEX, PHC F1-F4	Leachate Pond source monitoring
NO-5	Shore sample of Camsell River at dock	GP, TM, Cr-T-VI	Receiving environment adjacent to former mine related activities
NO-6	Sample of outflow from Hermandy Lake into Camsell River	GP, TM, DM, Cr-T-VI, BTEX, PHC F1-F4	Receiving environment adjacent to former mine related activities
DUP 9	Duplicate of NO-6	GP, TM, DM, Cr-T-VI, BTEX, PHC F1-F4	QA/QC
NO-9	Sample from water flowing from adit	GP, TM, Cr-T-VI, BTEX, PHC F1-F4	Mine source monitoring
Hermandy Lake			
NO-2	Sample of leachate pond	GP, TM, DM, Cr-T-VI, BTEX, PHC F1-F4	Leachate Pond source monitoring,
NO-3	Sample of outflow from Hermandy Lake	GP, TM, DM, Cr-T-VI, BTEX, PHC F1-F4	Receiving environment adjacent to former mine related activities
NO-7-2M	Shoreline sample of Hermandy Lake (surface, not at depth, could not get boat into location for depth sampling)	GP, TM, Cr-T-VI	Receiving environment adjacent to former mine related activities
NO-11-2M	Shoreline sample of Hermandy Lake (surface, not at depth, could not get boat into location for depth sampling)	GP, TM, DM, Cr-T-VI, BTEX, PHC F1-F4	Receiving environment adjacent to former mine related activities

GP: General Parameters; TM: Total Metals; DM: Dissolved Metals; BTEX: Benzene, Toluene, Ethylbenzene, Xylenes; PHC F1-F4: Petroleum Hydrocarbon Fractions F1 through F4; Rads: Radionuclides; Cr-T-VI: Chromium Total then Chromium 6+

7.3.1 General Parameters

Surface water exceedances for General Parameters at Northrim in 2016 were as follows:

Table 7-3 2016 Surface Water General Parameter Exceedances at Northrim

Sample ID	Location	Parameter	Concentration (mg/L)	CCME AFW Guideline (mg/L)
NO-6 ^a	Sample of outflow from Hermandy Lake into Camsell River	Total Ammonia	0.89	0.197 ^b

^a DUP 9 collected at NO-6 was below MDL (<0.0067 mg/L) for Total Ammonia.

^b Total ammonia guideline was calculated based on maximum field pH and maximum field temperature measured at Northrim locations.

It was noted although NO-6 exceeded AFW for total ammonia, that the duplicate sample from NO-6 was less than the detection limit and less than the AFW guideline for total ammonia.

7.3.2 Metals

Surface water exceedances for Total and Dissolved Metals at Northrim in 2016 were as follows:

Table 7-4 2016 Surface Water Metals Exceedances at Northrim

Sample ID	Location	Parameter	Concentration (mg/L)	CCME AFW Guideline (mg/L)
NO-1	Pooled water connected to Camsell River downgradient from waste rock	Total Aluminum	0.134	0.1 ¹
		Total Arsenic	0.0531	0.005
		Total Copper	0.00507	0.002 ²
		Total Lead	0.00344	0.002 ³
		Total Zinc	0.0473	0.03
		Dissolved Arsenic	0.0566	0.005
		Dissolved Copper	0.00307	0.002 ²
		Dissolved Zinc	0.0376	0.03
NO-2	Sample of leachate pond	Total Arsenic	0.0171	0.005
		Total Copper	0.042	0.002 ²
		Total Iron	1.19	0.3
		Total Lead	0.012	0.002 ³
		Total Silver	0.00171	0.00025
		Total Zinc	0.0483	0.03
		Dissolved Arsenic	0.00728	0.005
		Dissolved Copper	0.0141	0.002 ²
		Dissolved Silver	0.000317	0.00025
NO-3	Sample of outflow from Hermandy Lake	Total Arsenic	0.00791	0.005
		Total Copper	0.00266	0.002 ²
		Dissolved Arsenic	0.00813	0.005
NO-4	Sample of stream flowing from leachate pond, near ASTs	Total Arsenic	0.0254	0.005
		Total Copper	0.00522	0.003 ⁴
		Total Iron	2.76	0.3
		Total Lead	0.0132	0.0004 ⁴
		Dissolved Arsenic	0.0182	0.005
		Dissolved Iron	1.5	0.3

Sample ID	Location	Parameter	Concentration (mg/L)	CCME AFW Guideline (mg/L)
NO-5	Shoreline sample of the Camsell River at dock	Total Copper	0.00258	0.002 ²
		Total Lead	0.00216	0.002 ³
NO-7-2M	Shoreline sample of Hermandy Lake	Total Arsenic	0.00834	0.005
		Total Copper	0.00244	0.002 ²
NO-9	Sample of water flowing from adit	Total Aluminum	0.27	0.1 ¹
		Total Arsenic	0.242	0.005
		Total Copper	0.0134	0.004 ⁴
		Total Iron	0.839	0.3
		Total Lead	0.0873	0.007 ⁵
		Total Zinc	0.296	0.03
NO-11-2M	Shoreline sample of Hermandy Lake	Total Arsenic	0.00819	0.005
		Total Copper	0.00236	0.002 ²
		Dissolved Arsenic	0.00738	0.005
		Dissolved Copper	0.00254	0.002 ²

¹pH for sample was greater than 6.5

²Hardness for sample was less than 120 mg/L

³Hardness for sample was between 60 and 120 mg/L

⁴Hardness for sample was between 120 and 180 mg/L

⁵Hardness for sample was greater than 180 mg/L

Metal concentration exceedances in 2016 are consistent with exceedances in historical monitoring programs.

Historical samples from June 2006 showed unusually high concentrations of total chromium at all sampling locations, which were not reflected in other sampling years including 2016. Therefore chromium speciation was not undertaken. Additionally, NO-5 results are also elevated with respect to historic results. In comparing the sampling coordinates, it appears that the 2016 site is approximately 15 m further west near a sulphur rich pile than the historic sampling location.

7.3.3 Petroleum Hydrocarbons

Benzene, toluene, ethylbenzene, xylenes, and hydrocarbons fractions F1 through F4 were not detectable in all samples at Northrim, and PHC F2 through F4 concentrations were found in samples above MDL at NO-4 and NO-9. Detectable hydrocarbons found at Northrim in 2016 were as follows:

Table 7-5 2016 Surface Water Detectable Hydrocarbons at Northrim

Sample ID	Location	Parameter	Concentration (mg/L)	CCME AFW Guideline (mg/L)
NO-4	Sample of stream flowing from leachate pond, near ASTs	F2 (C10-C16)	0.15	Ns
		F3 (C16-C34)	15	Ns
		F4 (C34-C50)	12	Ns
NO-9	Sample of water flowing from adit	F2 (C10-C16)	0.15	Ns
		F3 (C16-C34)	1.1	Ns
		F4 (C34-C50)	0.27	Ns

ns = no standard/guideline

8.0 2016 SILVER BEAR – NOREX WATER QUALITY RESULTS

8.1 Description

8.1.1 Location and History

The Norex Mine is approximately 7 km upstream from Terra Mine, located approximately opposite of Northrim on the Camsell River but 600 m south of the shore line (Appendix A: Drawing 1 and Drawing 5). Norex was a silver mine that operated in conjunction with the facilities at Terra Mine connected by a road, and was in development and operation between the 1970s and 1983.

8.1.2 Site Characteristics and Physical Hazards

Features that remain include:

- A machine shop building;
- A generating / processing building;
- A couple small tanks;
- Two adits: one is blocked by ice for much of the year and the other has steel doors; and
- An estimated 40,000 m³ of coarse waste rock.

No tailings are present at Norex mine as ore was processed at Terra Mine.

Approximately 500 m southeast of the Norex Mine is the Graham Vein. Little remains in this area, as the waste rock was used to construct a road between Norex and the Graham Vein, and Smallwood and Terra Mines.

Features that remain at Graham Vein include:

- A rock cut (Graham Vein) with standing water;
- An estimated 4,000 m³ of waste rock; and
- Xeron Pond. It has been documented that milling took place at this site for approximately 18 months, with some indication that tailings were deposited in Xeron Pond. Subsequent studies, including sediment core sampling, found no indication of tailings in the pond which is roughly 250 m southeast of the Graham Vein.

8.1.3 Surface Water

Water, from the Norex Mine open adit that is blocked by ice for much of the year, drains to an area of standing water on the waste rock pad. The adit drainage then infiltrates through the waste rock pile and emerges at both the east and west sides of the waste rock toe. There is more flow from the east side than the west. At times of higher water levels, a flow path from the east seep can be observed draining to a small wetland, which in turn drains to the Camsell River.

Studies of Xeron Pond have shown that the pond is stratified, despite being only about 4.5 m deep, with lower temperatures measured at the bottom of the pond. At times water quality has been sampled in a small pond that was thought to connect hydrologically with Xeron Pond; however, water quality in the two bodies has not been shown to be comparable. While historic studies noted that it was possible that tailings had been deposited in Xeron Pond, this was not

supported by the water quality record, nor is it supported by sediment cores studies. While fines from waste rock weathering in the road base has been suggested as a source of metals in Xeron Pond (INAC, 2005), subsequent studies do not appear to have followed up on this. In 2008, Graham Vein and Xeron Pond were reported as having no real water quality issues and the sites were dropped from the program (INAC, 2008). No outlet to Xeron Pond has been observed.

Elevated ammonia concentrations have been observed in the Norex Mine adit drainage. It is suspected that this may be due to the possible presence of ANFO (ammonium nitrate fuel oil), a product used with explosives, that could have been stored in or leached from the adit subsequent to blasting activities (INAC-WRD, 2011).

8.2 Summary of Previous Monitoring Programs

8.2.1 Description of Past Monitoring Activities

Monitoring activity reports provided to and reviewed by SLR for this report are outlined in Table 8-1 below:

Table 8-1 Summary of Historic Documentation Reviewed – Norex Mine

Report Title	Date	Author / Agency
Water Quality Monitoring at Silver Bear Properties September 2002, June 2003 and June, August & September 2004	March 2005	INAC - WRD for INAC – CARD
Water Quality Monitoring at Silver Bear Properties June, July and August, 2005	February 2006	INAC - WRD for INAC – CARD
Water Quality Monitoring at Silver Bear Properties June, July and August, 2006	April 2007	INAC - WRD for INAC – CARD
Water Quality Monitoring at Silver Bear Properties June, July and August, 2007	November 2008	INAC - WRD for INAC – CARD
Water Quality Monitoring at Silver Bear Properties June and August, 2008	February 2009	INAC - WRD for INAC – CARD
Water Quality Monitoring at Silver Bear Properties June, July and August, 2009	January 2011	INAC - WRD for INAC – CARD

INAC-WRD sampled at the Norex site consistently between 2002 and 2009. Typically samples were collected from the adit drainage and waste rock seepage, as well as from Xeron Pond and the small pool of water adjacent to it at Graham Vein. Background/reference samples were also collected from an adjacent creek, east of the site (SENES, 2009). Samples were analysed for general chemistry and total metals, with dissolved metals being analysed between 2002 and 2004, and again in 2007 and 2008. BTEX and total extractable and purgeable hydrocarbons (EPH) were typically analysed between 2002 and 2004, with analysis being limited to EPH starting in 2005. In 2008 an extensive petroleum hydrocarbon program was undertaken (SENES, 2009c).

Sampling in 2009 was similar to that of past events with samples being collected from the adit outflow, standing water below the adit and from the marshy area below the waste rock pile (seep). Sampling did not occur at Graham Vein in 2009.

8.2.2 Findings of Past Monitoring Programs

Between 2002 and 2004, surface waters at Norex were elevated with sulphate, arsenic, copper, iron, lead and zinc. Arsenic, copper lead and zinc were elevated at Graham Vein. Between 2005 and 2007, the mine adit water at Norex was contaminated with arsenic, copper, iron, lead, and zinc, while water seeping at the base of the waste rock pile had elevated levels of these metals as well as aluminum and cadmium. However, the wetland between the waste rock seep and Camsell River likely prevented the movement of metal contamination into the river. As in previous years, standing water at the Graham Vein had elevated levels of arsenic, copper, lead and zinc, while the water quality of Xeron Pond was good with no indication of tailings present (SENES, 2009c).

The report on the 2009 work undertaken by INAC-WRD indicates that the waters draining from the adit and waste rock pile have high levels of metal contamination. Water samples from the east and west seeps showed different levels of metal contamination; water in both seeps was also different from the adit drainage, indicating further contamination is occurring as the water flows from the adit through the waste rock pile. Concentrations of total arsenic, copper, lead and zinc did not change significantly from 2004 to 2009. The report also concludes that the discharge water from Norex is not affecting Camsell River water quality at that time (INAC – WRD, 2011).

8.3 2016 Water Quality Monitoring Program Results

Analytical results for the 2016 sampling at Norex Mine can be found in Tables B-36 through B-39 in Appendix B of this report. Sampling locations (current and historical) are shown in Appendix A: Drawing 5 shows overall Silver Bear site and Drawing 5c focuses on the Norex sample locations. Photographs 62 to 68 in Appendix D show select sampling locations in 2016. Surface water results for the 2016 sampling program in the Norex area are shown on Drawing 5g. Sample location NOREX-1 was collected from an adit and are not compared to CCME guidelines, however the locations are noted in the tables if elevated concentrations are present.

Samples were collected on September 4, 2016 as follows:

Table 8-2 Samples Collected at Norex in 2016

Sample ID	Location	Parameters	Rationale for Sampling
NOREX 1	Sample collected from adit drainage	GP, TM, DM, Cr-T-VI	Mine source monitoring
NOREX-1B	Ponded water from adit drainage	No ponded water	Mine source monitoring
NOREX 2	Standing water near waste rock (east side)	GP, TM, DM, Cr-T-VI, BTEX, PHC F1-F4	Waste rock source monitoring
NOREX 3	Standing water near waste rock (west side)	GP, TM, DM, Cr-T-VI, BTEX, PHC F1-F4	Waste rock source monitoring
NX-4A	From stream connecting Norex to Camsell R. (not in river as per previous years)	GP, TM	Receiving environment adjacent to former mine related activities]
NOREX 5	Sample of standing water in Graham Vein	GP, TM	Mine source monitoring

Sample ID	Location	Parameters	Rationale for Sampling
NOREX 6	Shoreline sample of pool connected to Xeron Pond	GP, TM	Mine source monitoring
NOREX 6B	Highly acidic standing water between waste rock and Xeron Pond	GP, TM	Waste rock source monitoring
DUP 8	Duplicate of NX-4A	GP, TM	QA/QC
NOREX-12	Proposed sample in ponded water in drum disposal area	Dry	Landfill source monitoring
GV1 (soil/sand)	Suspected Tailings sample collected adjacent to standing water between waste rock and Xeron Pond	ABA Package (Modified NP), Sulphur Speciation & Non-extractable Sulphur, Rinse pH & Electrical Conductivity, Ultra Trace Metals by Aqua Regia Digestion followed by ICP-MS	Tailings characterization

GP: General Parameters; TM: Total Metals; DM: Dissolved Metals; BTEX: Benzene, Toluene, Ethylbenzene, Xylenes; PHC F1-F4: Petroleum Hydrocarbon Fractions F1 through F4; Cr-T-VI: Chromium Total then Chromium 6+
¹Note: 2016 sample taken in a different location to previous monitoring programs - not at original coordinates

8.3.1 General Parameters

Historical ammonia exceedances have been observed, however, CCME AFW guidelines for General Parameters were not exceeded in 2016.

8.3.2 Metals

Surface water exceedances for Total and Dissolved Metals at Norex in 2016 were as follows:

Table 8-3 2016 Surface Water Metals Exceedances at Norex

Sample ID	Location	Parameter	Concentration (mg/L)	CCME AFW Guideline (mg/L)
NOREX-1	Collected from adit	Total Arsenic	0.0653	---
		Total Iron	2.01	---
		Total Lead	0.0169	---
		Dissolved Arsenic	0.0564	---
		Dissolved Iron	1.57	---
NOREX-2	Standing water near waste rock	Total Arsenic	0.0506	0.005
		Total Copper	0.00994	0.004 ⁵
		Total Lead	0.00847	0.007 ⁵
		Total Zinc	0.431	0.03
		Dissolved Arsenic	0.0509	0.005
		Dissolved Zinc	0.438	0.03

Sample ID	Location	Parameter	Concentration (mg/L)	CCME AFW Guideline (mg/L)
NOREX-3	Standing water near waste rock	Total Arsenic	0.0212	0.005
		Total Iron	2.72	0.3
		Total Lead	0.0478	0.007 ⁵
		Total Zinc	2.63	0.03
		Dissolved Arsenic	0.0247	0.005
		Dissolved Iron	0.715	0.3
NOREX-5	Sample of standing water in Graham Vein	Total Arsenic	0.0781	0.005
		Total Copper	0.0385	0.002 ²
		Total Lead	0.0409	0.002 ³
		Total Selenium	0.0012	0.001
		Total Silver	0.000365	0.00025
		Total Zinc	0.587	0.03
NOREX-6	Shoreline sample of pool connected to Xeron Pond	Total Aluminum	0.15	0.1 ¹
		Total Copper	0.00792	0.002 ²
		Total Iron	1.31	0.3
		Total Lead	0.0104	0.001 ⁶
		Total Zinc	0.0694	0.03
NOREX-6B	Highly acidic standing water	Total Aluminum	0.792	0.1 ¹
		Total Arsenic	0.327	0.005
		Total Copper	0.049	0.002 ²
		Total Iron	2.9	0.3
		Total Lead	0.0292	0.001 ⁶
		Total Mercury	0.000047	0.000026
		Total Silver	0.00177	0.00025
		Total Zinc	0.755	0.03
NX-4	Sample from stream connecting Norex to the Camsell River (not in river as per previous years)	Total Aluminum	2.28	0.1 ¹
		Total Arsenic	0.0388	0.005
		Total Copper	0.0084	0.004 ⁵
		Total Iron	5.00	0.3
		Total Zinc	0.327	0.03

¹pH for sample was greater than 6.5

²Hardness for sample was less than 120 mg/L

³Hardness for sample was between 60 and 120 mg/L

⁴Hardness for sample was between 120 and 180 mg/L

⁵Hardness for sample was greater than 180 mg/L

⁶Hardness for sample was less than 60 mg/L

Metal concentration exceedances are generally consistent with previous monitoring programs. Note chromium was below MDL for all years except 2006. Chromium is not a contaminant of concern at this site. NOREX-1 results reported elevated metals but there are no CCME guidelines for adit water.

8.3.3 Hydrocarbons

Benzene, toluene, ethylbenzene, xylenes, and hydrocarbons fractions F1 through F4 were below MDL for all samples at Norex with the exception of detectable PHC F2 and F3 at NOREX-3. Detectable concentrations of PHCs at Norex in 2016 were as follows:

Table 8-4 2016 Surface Water Detectable Hydrocarbons at Norex

Sample ID	Location	Parameter	Concentration (mg/L)	CCME AFW Guideline (mg/L)
NOREX-3	Sample of stream flowing from leachate pond, near ASTs	F2 (C10-C16)	1.3	Ns
		F3 (C16-C34)	0.95	Ns

9.0 2016 SILVER BEAR – SMALLWOOD WATER QUALITY RESULTS

9.1 Description

9.1.1 Location and History

The Smallwood Mine was a silver mine that operated in the 1970s and 1980s in conjunction with the facilities at Terra Mine. It is located approximately 1 km southeast of Graham Vein at Smallwood Lake (Appendix A: Drawing 1, Drawing 5, and Drawing 5d), and was connected to Norex and Terra by a mine access road.

9.1.2 Site Characteristics and Physical Hazards

Features that remain include an adit, service buildings, a fuel tank, and 53,000 m³ of waste rock.

There is some uncertainty as to whether tailings were deposited in Smallwood Lake. It has been reported that ore was transported to Terra Mine for milling; however a 2005 report contained a map sheet (likely produced by the mine) that indicated tailings were disposed of onsite. Contrarily, reporting from 2007 noted that there were no indications that ore was ever milled at Smallwood or any evidence of tailings being deposited in the area.

9.1.3 Surface Water

Two connected upland lakes drain via an intermittent stream into the north end of Smallwood Lake and a natural wetland, named Timler Slough, drains into its south end. Smallwood Lake drains from the northeast into a large chain of lakes that are thought to subsequently drain into the Camsell River, though this has not been confirmed.

There has been no observed seepage from the waste rock piles or from the adit.

Thermal stratification in Smallwood Lake has been confirmed.

9.2 Summary of Previous Monitoring Programs

9.2.1 Description of Past Monitoring Activities

Monitoring activity reports provided to and reviewed by SLR for this report are outlined in Table 9-1 below:

Table 9-1 Summary of Historic Documentation Reviewed – Smallwood Mine

Report Title	Date	Author / Agency
Water Quality Monitoring at Silver Bear Properties September 2002, June 2003 and June, August & September 2004	March 2005	INAC - WRD for INAC – CARD
Water Quality Monitoring at Silver Bear Properties June, July and August, 2005	February 2006	INAC - WRD for INAC – CARD
Water Quality Monitoring at Silver Bear Properties June, July and August, 2006	April 2007	INAC - WRD for INAC – CARD
Water Quality Monitoring at Silver Bear Properties June, July and August, 2007	November 2008	INAC - WRD for INAC – CARD
Water Quality Monitoring at Silver Bear Properties June and August, 2008	February 2009	INAC - WRD for INAC – CARD
Water Quality Monitoring at Silver Bear Properties June, July and August, 2009	January 2011	INAC - WRD for INAC – CARD

As with the other Silverbear mines, the Northrim site was consistently sampled between 2002 and 2009. Surface water at the mine consists of Smallwood Lake, where both shoreline and open water, including at-depth sampling has occurred. Parameters sampled were consistent with the work done at Norex and Northrim (SENEs, 2009c).

9.2.2 Findings of Past Monitoring Programs

From 2002 to 2004, results indicated that concentrations of copper, lead and zinc marginally exceeded guidelines at Smallwood, with only copper concentrations exceeding guidelines between 2005 and 2007 (SENEs, 2009c).

WRD indicates that there has been no evidence of seepage from the waste rock piles or adit at Smallwood, with the waste rock showing the potential for acid generation in the future. The waste rock was also identified during previous investigations as the likely source for elevated concentrations of cadmium, copper, iron and zinc. Results from the 2009 sampling event yielded only a shoreline sample with copper and lead concentrations above CCME guidelines. Metals concentrations were seen to be higher closer to the shoreline than in the mid-lake samples (likely dependant on wind conditions or the presence of the dock), however, total concentrations of arsenic, copper and zinc had not increased in the lake over the prior eight years (INAC – WRD, 2011).

9.3 2016 Water Quality Monitoring Program Results

Analytical results for the 2016 sampling at Smallwood Mine can be found in Tables B-40 through B-42 in Appendix B of this report. Sampling locations (current and historical) are shown in Appendix A: Drawing 5 shows the overall Silver Bear site and Drawing 5d focuses on the Smallwood sample locations. Photographs 69 to 72 in Appendix D show select sampling

locations in 2016. Surface water results for the 2016 sampling program in the Smallwood area are shown in Drawing 5h.

Samples were collected on September 4, 2016 as follows:

Table 9-2 Samples Collected at Smallwood in 2016

Sample ID	Location	Parameters	Rationale for Sampling
SM-1	Sample of Smallwood Lake near waste rock	GP, TM, Cr-T-VI	Receiving environment adjacent to waste rock
DUP 10	Duplicate of SM-1	GP, TM, Cr-T-VI	QA/QC
SM-2	Sample of Smallwood Lake near waste rock	GP, TM, Cr-T-VI	Receiving environment adjacent to waste rock
SM-6-2M	Sample of Smallwood Lake - 2 meter	GP, TM, Cr-T-VI	Receiving water environment down gradient of mine related activities, depth profile
SM-6-4.5M	Sample of Smallwood Lake - 4.5 meter	GP, TM, Cr-T-VI	Receiving water environment down gradient of mine related activities, depth profile
SM-7-2M	Sample of Smallwood Lake - 2 meter	GP, TM, Cr-T-VI	Receiving water environment down gradient of mine related activities, depth profile
SM-7-7.5M	Sample of Smallwood Lake - 7.5 meter	GP, TM, DM, Cr-T-VI	Receiving water environment down gradient of mine related activities, depth profile

GP: General Parameters; TM: Total Metals; DM: Dissolved Metals; Cr-T-VI: Chromium Total then Chromium 6+

9.3.1 General Parameters

There were no exceedances CCME AFW guidelines for General Parameters at Smallwood in 2016.

9.3.2 Metals

The only exceedance at Smallwood in 2016 was a zinc exceedance in DUP 10 (0.0419 mg/L) but not in the corresponding sample. Note that total chromium remained below detection limits and therefore chromium speciation was not undertaken.

9.3.3 Hydrocarbons

Hydrocarbon testing was not undertaken at the Smallwood sampling locations in 2016 as they have not been historically identified as contaminants of concern at this site.

10.0 QUALITY ASSURANCE / QUALITY CONTROL (QA/QC)

Quality assurance and quality control results for 2016 are found in Appendix B: Tables B-43 to B-54.

10.1 Duplicate Samples – Relative Percent Difference

10.1.1 General Parameters

Ten blind field duplicate (BFD) sample sets were analyzed for general parameters and RPD values calculated where possible. RPDs for individual parameters ranged from 0% to 37% with batch averages between 1.6 and 13.8. No BFD pairs exceeded the 40% RPD criterion for individual general parameters or batch averages.

Table 10-1 Summary of General Parameters in Surface Water RPD Exceedances

Site	BFD Pair	RPD Range (%)	Batch Average (%)	Number of Parameters Exceeding 40% RPD	Analytical Results
El Bonanza	ELB-1-GBL/DUP 1	0.0 – 8.3	2.6	0	N/A
Contact Lake	CL-3/DUP 2	0.0 – 35.3	11.7	0	N/A
	CL-5/DUP 3	0.0 – 13.6	4.9	0	N/A
Sawmill Bay	SW-B-2/DUP 4	0.0 – 16.2	4.5	0	N/A
	A3-SW08-01/DUP 5	0.0 – 37.2	9.8	0	N/A
Terra Mine	T1/DUP 6	0.0 – 9.5	5.3	0	N/A
	T16-2M/DUP 7	0.0 – 6.9	1.6	0	N/A
Norex	NX-4A/DUP 8	0.0 – 12.6	7.1	0	N/A
Northrim	NO-6/DUP 9	5.1 – 25.7	13.8	0	N/A
Smallwood	SM-1/DUP 10	0.0 – 8.8	5.5	0	N/A

10.1.2 Total Metals

Ten BFD sample sets were analyzed for total metals and RPD values calculated where possible. RPDs for individual parameters ranged from 0% to 104% with batch averages between 2.6 and 21.7%. Individual RPD values in three of the BFD pairs exceeded the 40% criterion for individual total metals parameters as summarized in below. Exceedance of the 40% criterion may be due to accidental entrapment of solids in the sample. Lab results for field blank samples indicated detectable concentrations of aluminum and duplicate samples for aluminum had higher than acceptable RPD results, indicating that the results for aluminum from 2016 are unreliable.

Table 10-2 Summary of Total Metals RPD Exceedances

Site	BFD Pair	RPD Range (%)	Batch Average (%)	Number of Parameters Exceeding 40% RPD	Analytical Results
El Bonanza	ELB-1-GBL/DUP 1	1.0 - 8.6	2.6	0	N/A
Contact Lake	CL-3/DUP 2	0.3 - 25.6	4.6	0	N/A
	CL-5/DUP 3	1.3 - 104.0	21.5	2	Total Manganese (no CCME AFW standard); Total Aluminium: 0.005@pH<6.5 0.1@pH>=6.5

Site	BFD Pair	RPD Range (%)	Batch Average (%)	Number of Parameters Exceeding 40% RPD	Analytical Results
Sawmill Bay	SW-B-2/DUP 4	2.0 – 3.2	2.7	0	N/A
	A3-SW08-01/DUP 5	0.8 – 14.5	5.6	0	N/A
Terra Mine	T1/DUP 6	1.2 – 21.7	8.8	0	N/A
	T16-2M/DUP 7	1.0 – 87.1	11.5	1	Total Aluminium: 0.005@pH<6.5 0.1@pH>=6.5
Norex	NX-4A/DUP 8	0.0 – 22.0	5.6	0	N/A
Northrim	NO-6/DUP 9	3.3 – 57.2	21.7	1	Total Aluminium: 0.005@pH<6.5 0.1@pH>=6.5
Smallwood	SM-1/DUP 10	0.3 – 38.3	9.8	0	N/A

The batch average RPD for total metals were below the acceptable 40% criterion for all of the BFD pairs.

10.1.3 Dissolved Metals

Three BFD sample sets were analyzed for dissolved metals and RPD values calculated where possible. RPDs for individual parameters ranged from 0% to 11.2% with batch averages between 1.7 and 5.8%. No BFD pairs exceeded the 40% RPD criterion for individual total metals parameters or batch averages.

Table 10-3 Summary of Dissolved Metals RPD Exceedances

Site	BFD Pair	RPD Range (%)	Batch Average (%)	Number of Parameters Exceeding 40% RPD	Analytical Results
Contact Lake	CL-5/DUP 3	0.2 – 7.6	3.0	0	N/A
Sawmill Bay	SW-B-2/DUP 4	0.0 – 4.0	1.7	0	N/A
Terra Mine	T16-2M/DUP 7	1.0 – 11.2	5.8	0	N/A

10.1.4 Hydrocarbons

Four BFD sample sets (ELB-1-GBL/DUP 1, SW-B-2/DUP 4, A3-SW08-01/DUP 5, and NO-6/DUP 9) were analyzed for BTEX and PHC Fractions F1 to F4. All results were below the MDL (non-detect) for all parameters, therefore no RPD values were calculated.

10.1.5 Radionuclides

Two BFD sample sets (SW-B-2/DUP 4 and A3-SW08-01/DUP 5) were analysed for Gross Alpha and Gross Beta to determine if further testing for Lead-210 or Radium-226 was required. All results were at or near the MDL therefore further testing was not undertaken. RPD was not calculated for either parameter for either sample as they did not meet the criteria that both parameters be 5 times greater than the MDL.

10.2 Field Blanks

Table 10-4 below summarizes the parameters found to be above laboratory MDL in the seven field blanks that were collected as part of the WQMP. Total aluminum was detected at concentrations above CCME AFW in two field blanks, and above MDL in three field blanks, indicating that bottles may have been contaminated and that total aluminum measurements may not be reliable for 2016.

Table 10-4 Parameters above MDL in GBL WQMP Field Blanks

Parameter	CCME AFW Guideline (mg/L)	MDL (mg/L)	Site	Concentration* (mg/L)
Total Aluminum	0.005@pH<6.5 0.1@pH>=6.5	0.0030	El Bonanza	0.0046 (pH: 4.89)
			Contact Lake	0.0063 (pH: 4.73)
			Sawmill Bay	0.0060 (pH: 4.98)
Total Calcium	ns	0.050	El Bonanza	0.082
			Contact Lake	0.092
			Sawmill Bay	0.094
			Terra Mine	0.098
			Norex	0.135
			Northrim	0.103
			Smallwood	0.121
Total Iron	0.3	0.010	Northrim	0.035
Total Phosphorus	ns	0.0030	El Bonanza	0.0030
Dissolved Phosphorus	ns	0.0030	El Bonanza	0.0030
Total Selenium	0.001	0.00010	Sawmill Bay	0.00011
Conductivity	ns	1.0	Northrim	1.0
Dissolved Organic Carbon	ns	0.50	El Bonanza	1.2
			Contact Lake	1.6
			Terra Mine	1.0
			Norex	2.2
			Northrim	0.57

***Bold** denotes exceedance of the CCME AFW Guideline

10.3 Travel Blanks

Table 10-5 below summarizes the parameters found to be at or above laboratory MDL in the seven travel blanks that were part of the WQMP. However, the alert criteria for Travel Blanks, as described by Maxxam, are greater than 2x the MDL. None of the travel blanks reported parameters above 2X their respective MDLs and as a result, these concentrations are not considered in exceedance. Additionally, the lab investigated raw data and no evidence of contamination or error was found.

Table 10-5 Parameters above MDL in GBL WQMP Travel Blanks

Parameter	CCME AFW Guideline (mg/L)	MDL (mg/L)	Site	Concentration* (mg/L)
Total Calcium	Ns	0.050	Northrim	0.053
Total Phosphorus	Ns	0.0030	Northrim	0.0030
Dissolved Phosphorus	Ns	0.0030	El Bonanza	0.0030
Dissolved Organic Carbon	Ns	0.50	Contact Lake	0.76

***Bold** denotes exceedance of the CCME AFW Guideline

11.0 CONCLUSIONS

SLR Consulting (Canada) Ltd. (SLR) has prepared the 2016 Great Bear Lake Water Quality Monitoring Report for Indigenous and Northern Affairs Canada – Contaminants and Remediation Division (INAC – CARD).

This report presents the results of the 2016 field program and laboratory analysis in the context of guidelines and draws attention to data that indicates conditions of concern; and data that approaches or exceeds applicable guidelines. This report also notes the consistency of 2016 results with previous monitoring programs at each site.

Seven sites have been identified as part of the Water Quality Monitoring Report:

- Sawmill Bay;
- El Bonanza and Bonanza;
- Contact Lake;
- Silver Bear Mines consisting of four (4) separate sites:
 - Terra;
 - Northrim;
 - Norex/Graham Vein; and
 - Smallwood.

Water samples were collected from tailings ponds/lakes, mine adit drainages, seeps from waste rock piles, runoff streams, and downstream receiving waters. Samples were analyzed for physical/chemical parameters, nutrients, metal, radionuclides (at limited sites), and petroleum hydrocarbon (at limited sites) concentrations. Water quality data were compared to the CCME water quality guidelines for the protection of freshwater aquatic life, Health Canada (2014) Drinking Water guidelines (for radionuclides), and to the natural background conditions of the Camsell River as well as data from the Contact Lake and El Bonanza “regional lakes” (the reference sites for those mine sites, Drawing 1a). Results from data collected in 2016 are summarized below for each site.

11.1 Sawmill Bay

In 2016, there were no samples with results above selected guidelines and metals as well as radionuclides and petroleum hydrocarbons are currently no longer considered contaminants of concern (Appendix B. Table B-1 series). Gross alpha radiation above the detection limit was measured at sampling locations within the former camp area in 2016. No guidelines for gross alpha and gross beta radiation are provided by Health Canada.

11.2 El Bonanza/Bonanza

In 2016 there were no metal COPCs exceeding CCME AFW guidelines at Bonanza/El Bonanza. Aluminum is likely not a COPC as there are only sporadic exceedances of the CCME AFW guideline in acidic waters where the guideline is lower, which were not confirmed in 2016.

11.3 Contact Lake

Total arsenic, copper, mercury, silver, and uranium were detected in 2016 at concentrations exceeding CCME AFW guidelines in surface water draining from waste rock, at the tailings pond, the tailings wetland, as well as in the creek flowing into Contact Lake near the shoreline of Contact Lake. It should be noted that CL-5 was sampled at the creek and not at the historic shoreline sampling site.

Hydrocarbons were below detection limits for all surface water sampling locations in 2016.

In 2016, testing for radium-226 and lead-210 was undertaken at the stream draining the waste rock, the tailings pond outflow, the tailings wetland, and creek flowing into Contact Lake. The guideline values of 0.5 and 0.2 Bq/L, respectively, were not exceeded at any of the sampling locations.

11.4 Silver Bear - Terra

Several metal COPCs, particularly arsenic and copper, were measured above CCME AFW guidelines in surface waters of Ho-Hum TCA in 2016. Concentrations showed a decreasing trend in Moose Bay (Camsell River) with distance from the discharge point of the wetland into the bay. Arsenic, iron, and zinc levels exceeded CCME AFW guidelines in a pond near a landfill at Jackfish Bay on the Camsell River.

Concentrations of all PHC constituents in water were below analytical detection limits in 2016, however, hydrocarbon contaminated soils remain on the site.

11.5 Silver Bear – Northrim

In 2016, several metals (aluminium, arsenic, copper, iron, lead, silver, zinc) were measured at concentrations above CCME AFW guidelines at several locations at the site (Hermandy Lake, Leachate Pond, shoreline sample of Camsell River downgradient of waste rock and dock). Total ammonia levels slightly exceeded guidelines in the outflow from Hermandy Lake downstream of the Leachate Pond, the duplicate sample was non-detectable. PHC F2 through F4 were detectable in water at two locations. NO-5 concentration levels were higher than normal but were also sampled at a slightly different location than historically noted.

11.6 Silver Bear – Norex

In 2016, standing water in Graham Vein and a small pool connected to Xeron Pond had high concentrations for total arsenic, copper, lead, selenium, silver, and zinc. A small pool of highly acidic water near Xeron Pond has high concentrations of metals, including mercury but metals concentrations in the acidic pool were not representative of levels in Xeron Pond.

Waste oil may have been deposited in the waste rock at Norex. Non-volatile total extractable hydrocarbons were detected at waste rock seep locations. Staining on the waste rock pad was observed in the area of the machine shop.

11.7 Silver Bear – Smallwood

There were no exceedances in any samples for total or dissolved metals and nutrients in Smallwood Lake in 2016. In comparison with water quality in Tutcho Lake, metals concentrations in Smallwood Lake are slightly elevated for aluminium, barium, copper, manganese, molybdenum and zinc.

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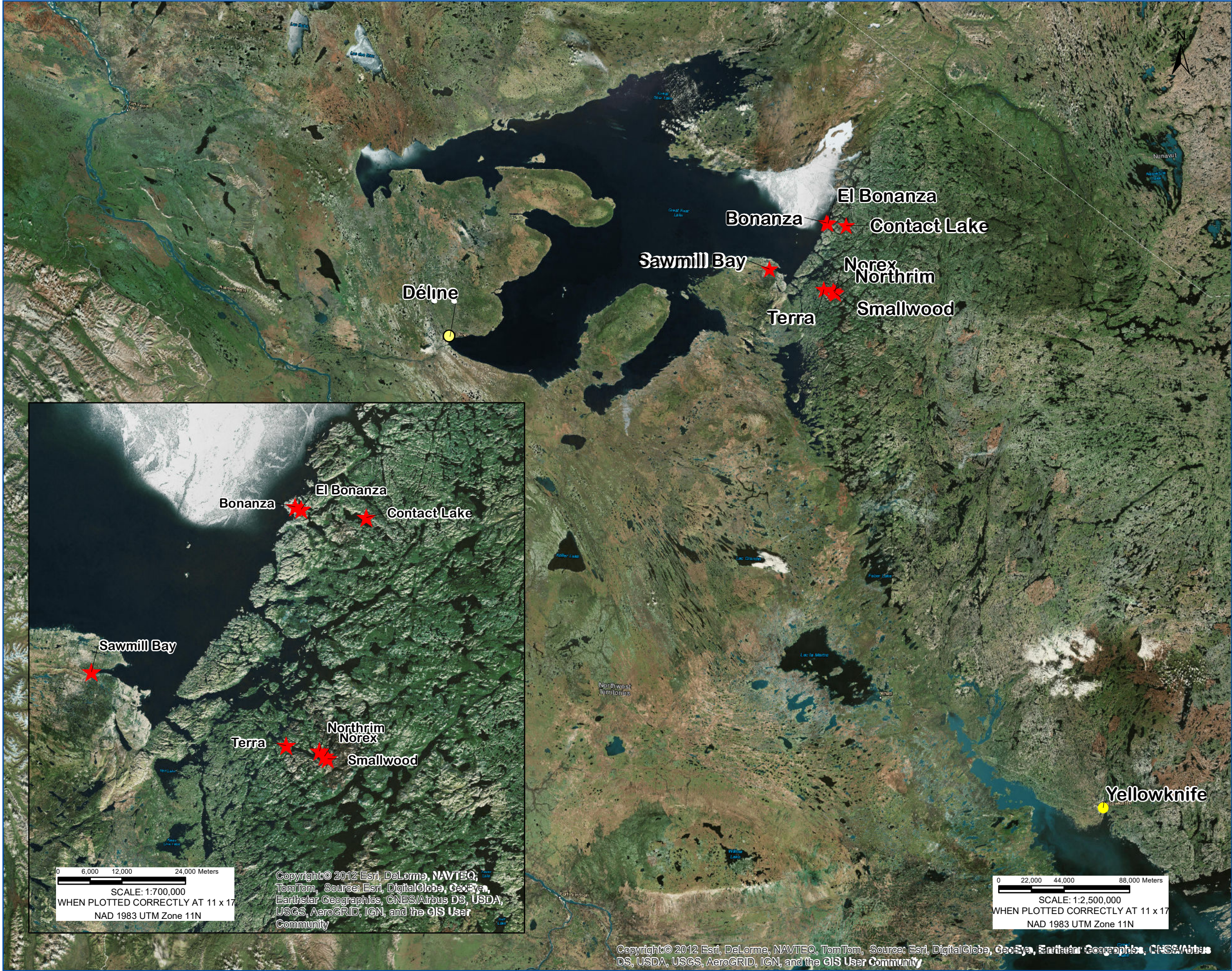
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Appendix A Drawings

Great Bear Lake Sites
2016 Water Quality Monitoring Report
SLR Project No: 234.01016.00001

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LEGEND

★ SITES

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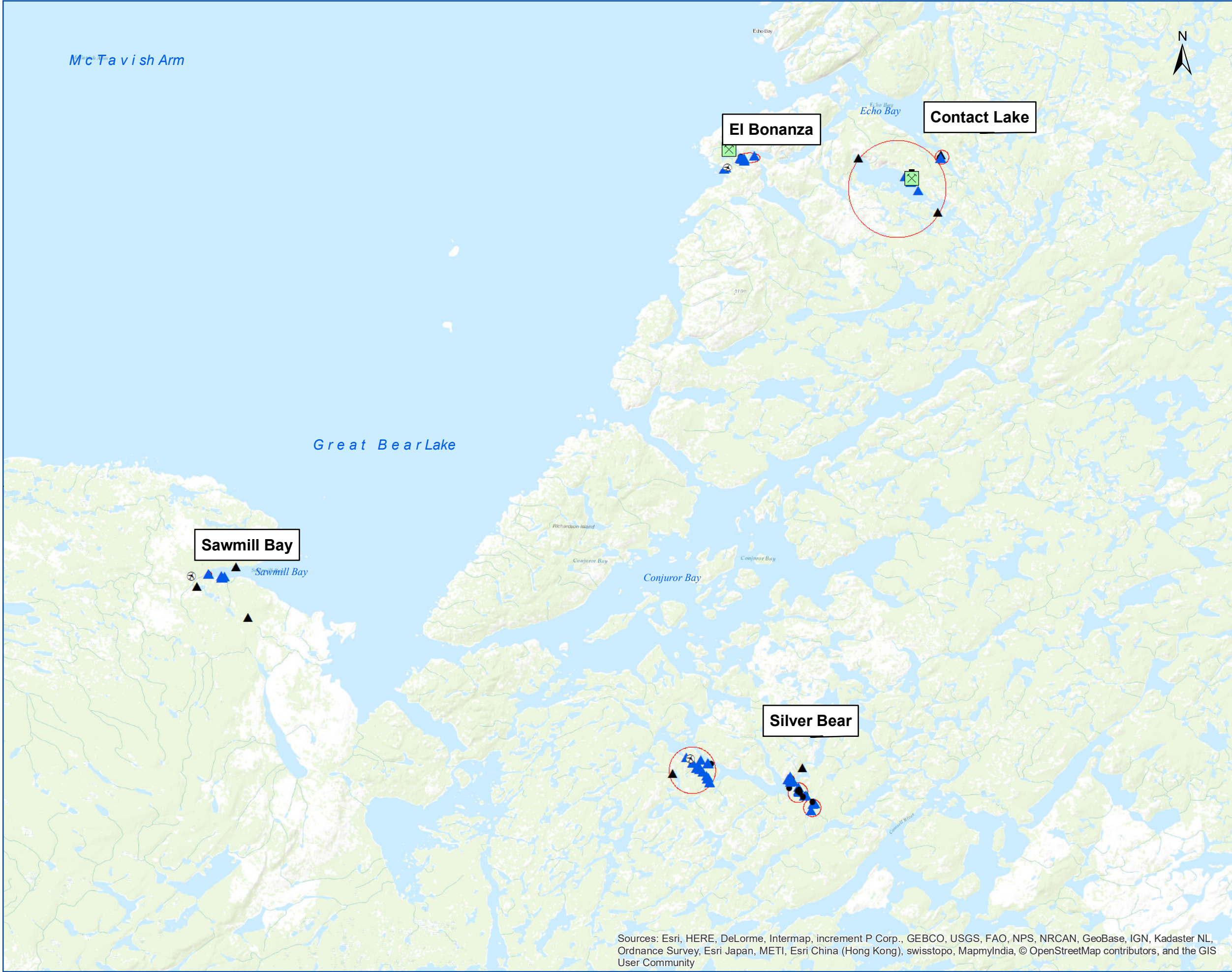
Great Bear Lake Sites
2016 Water Quality Monitoring Report

Site Locations

March 26, 2018	Rev 0.2	Drawing No.
Project No.	234.01016.00001	1



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

- LEGEND
- AREA OF INTEREST
- SURFACE WATER SAMPLE LOCATION (SLR 2016)
- BACKGROUND SURFACE WATER SAMPLE LOCATION (SLR 2016)
- MINE
- AIRSTRIP
- FEATURE LOCATION (SLR 2016)

0 2,400 4,800 9,600 Meters
SCALE: 1:272,000
WHEN PLOTTED CORRECTLY AT 11 x 17
NAD 1983 UTM Zone 11N

NOTES

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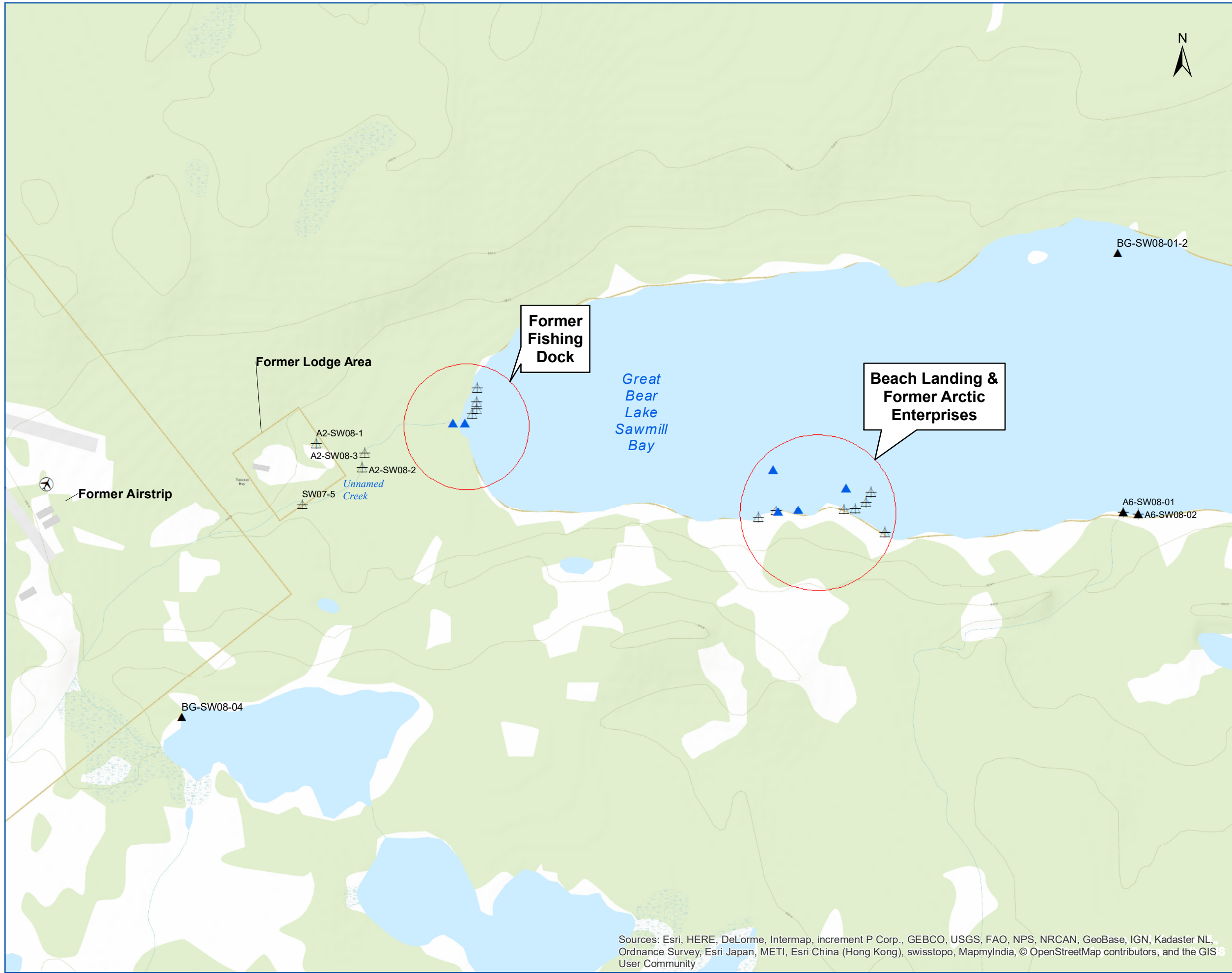
Great Bear Lake Sites
2016 Water Quality Monitoring Report

Site Work Areas

March 16, 2018	Rev 0.1	Drawing No.
Project No.	234.01016.00001	1 a



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LEGEND

AREA OF INTEREST

SURFACE WATER
SAMPLE LOCATION
(SLR 2016)

BACKGROUND
SURFACE WATER
SAMPLE LOCATION
(SLR 2016)

SURFACE WATER
SAMPLE LOCATION
(HISTORICAL)

BACKGROUND
SURFACE WATER
SAMPLE LOCATION
(HISTORICAL)

0100200400 Meters

SCALE: 1:11,300
WHEN PLOTTED CORRECTLY AT 11 x 17
NAD 1983 UTM Zone 11N

NOTES

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Great Bear Lake Sites
2016 Water Quality Monitoring Report

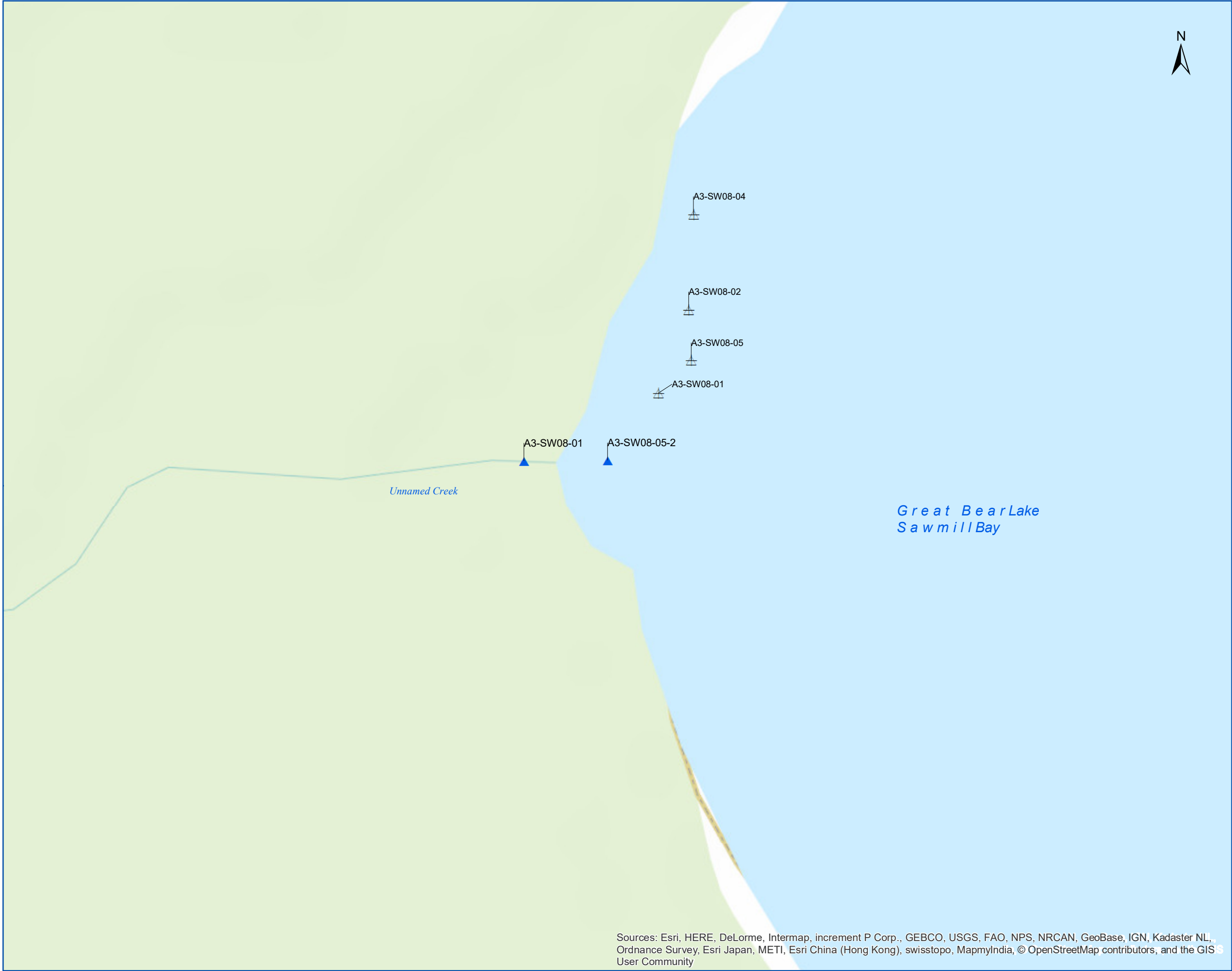
Sawmill Bay Work Areas

March 16, 2018	Rev 0.1	Drawing No.
Project No.	234.01016.00001	2



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- LEGEND**
-  SURFACE WATER SAMPLE LOCATION
 -  SURFACE WATER SAMPLE LOCATION

0 12.5 25 50 Meters
SCALE: 1:1,600
WHEN PLOTTED CORRECTLY AT 11 x 17
NAD 1983 UTM Zone 11N

NOTES
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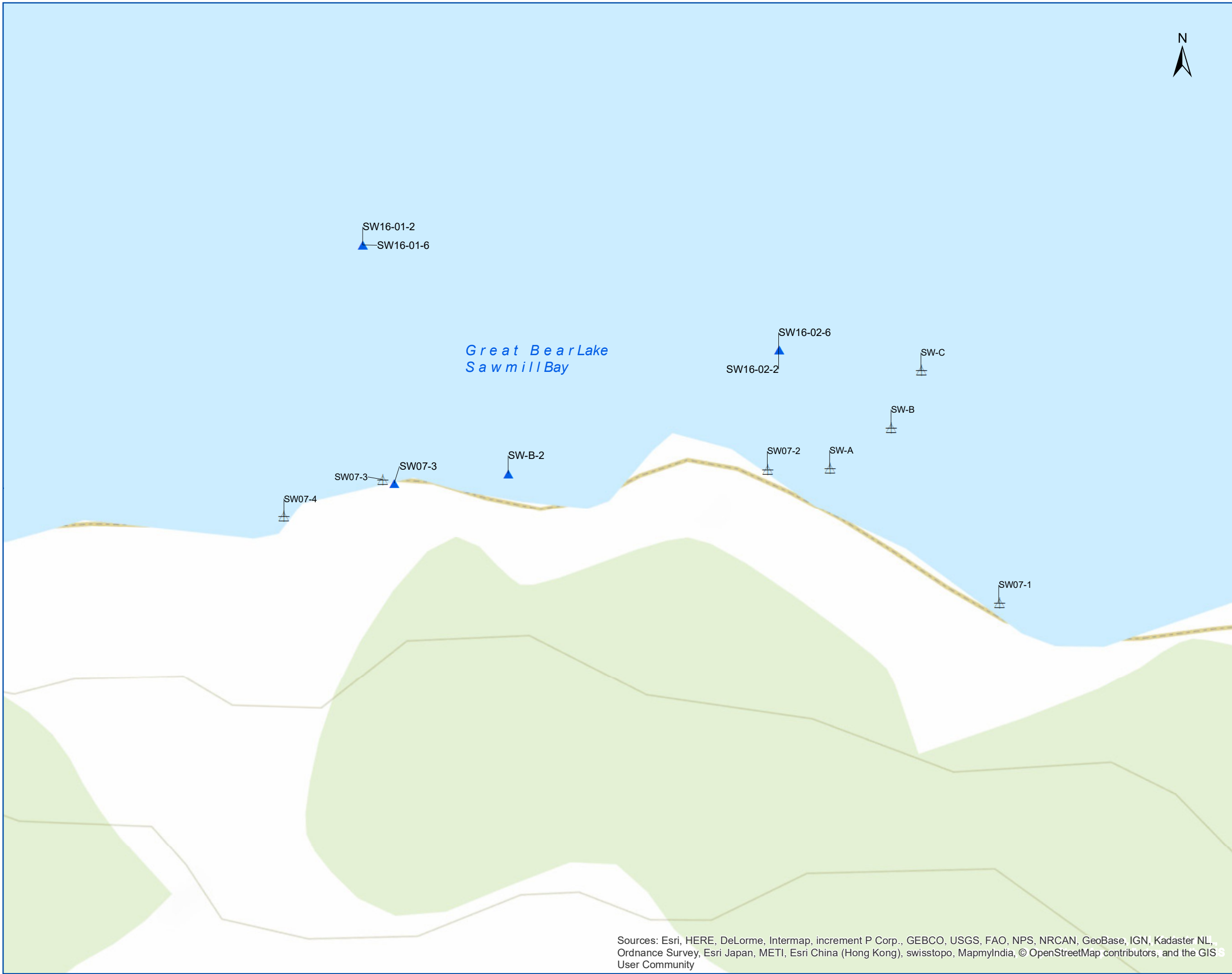
Great Bear Lake Sites
2016 Water Quality Monitoring Report

Sawmill Bay - Former Fishing Dock
Sample Locations



March 16, 2018	Rev 0.1	Drawing No.
Project No.	234.01016.00001	2 a

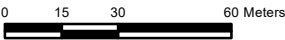


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LEGEND

-  SURFACE WATER SAMPLE LOCATION
-  SURFACE WATER SAMPLE LOCATION



SCALE: 1:2,000
WHEN PLOTTED CORRECTLY AT 11 x 17
NAD 1983 UTM Zone 11N

NOTES

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Great Bear Lake Sites
2016 Water Quality Monitoring Report

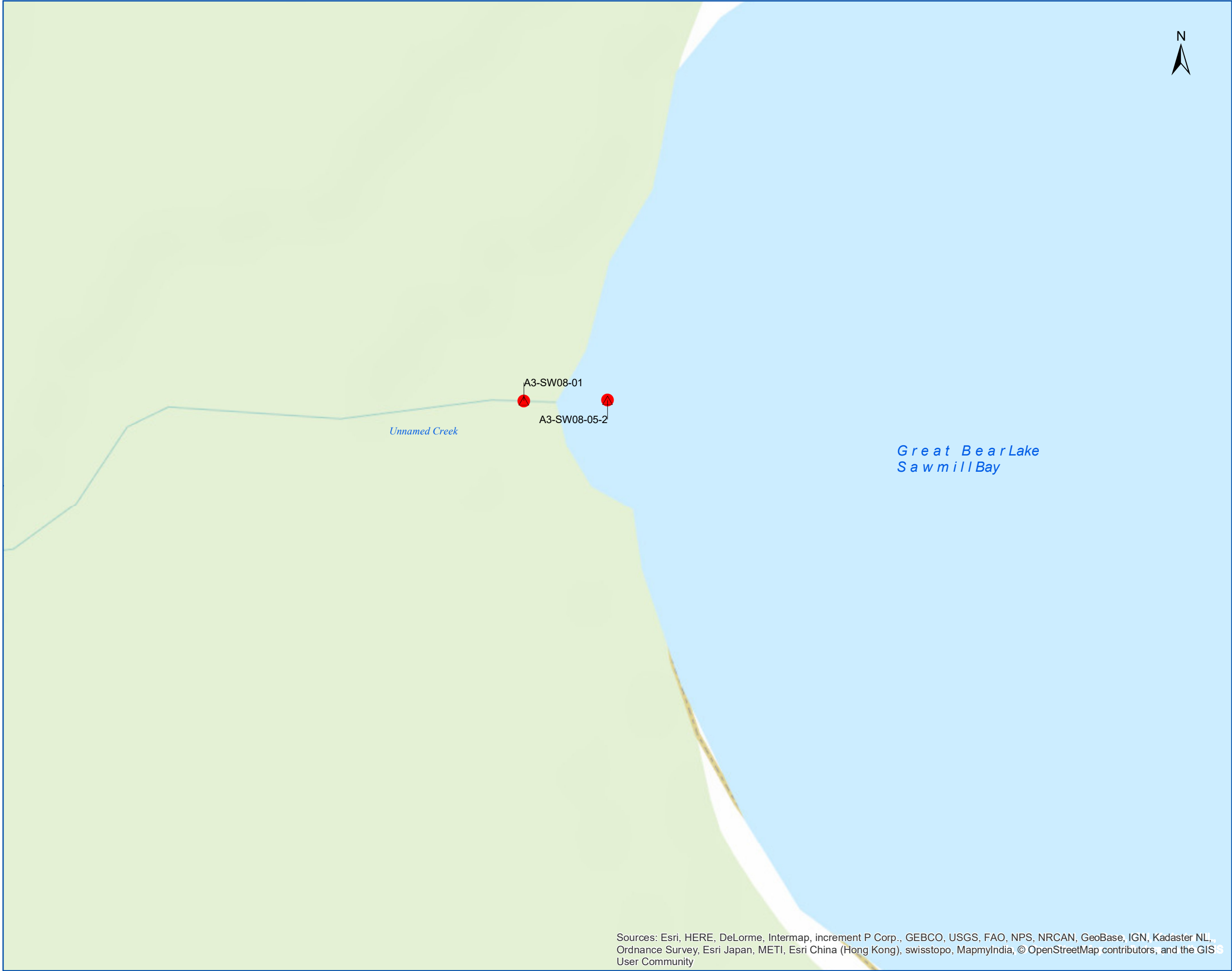
Sawmill Bay - Beach Landing
& Former Arctic Enterprises
Sample Locations

March 16, 2018	Rev 0.1	Drawing No.
Project No.	234.01016.00001	2 b


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




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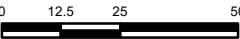


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- LEGEND**
- 

SURFACE WATER
SAMPLE LOCATION
(SLR 2016)
- 

CONCENTRATIONS
GREATER THAN CCME
GUIDELINES
PROTECTION OF
AQUATIC LIFE
FRESHWATER



SCALE: 1:1,600
WHEN PLOTTED CORRECTLY AT 11 x 17
NAD 1983 UTM Zone 11N

NOTES

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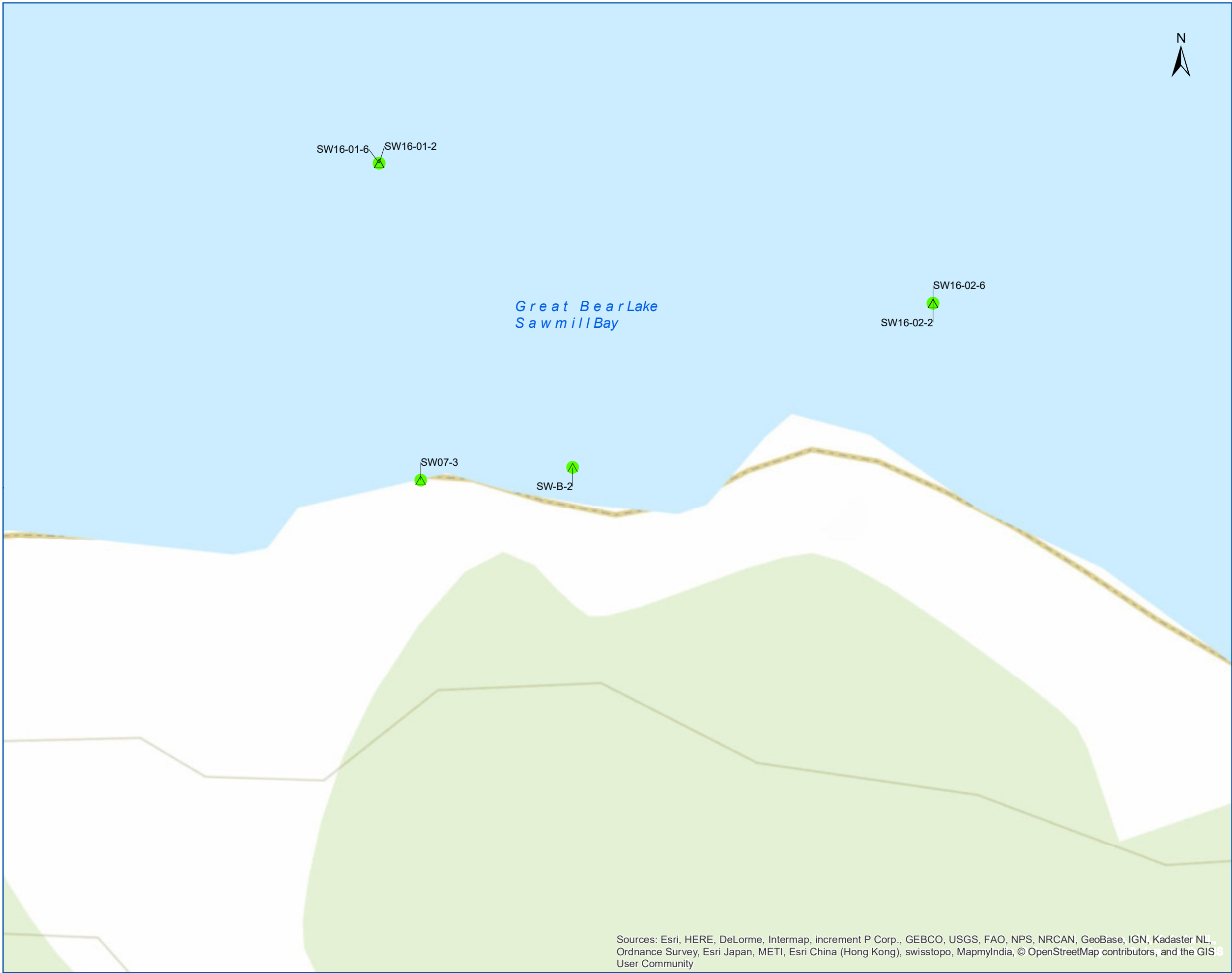
Great Bear Lake Site
2016 Water Quality Monitoring Report

Sawmill Bay - Former Fishing Dock
2016 Surface Water Data

March 16, 2018	Rev 0.1	Drawing No.
Project No.	234.01016.00001	2 c



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LEGEND

△ SURFACE WATER
SAMPLE LOCATION
(SLR 2016)

● CONCENTRATIONS
LESS THAN CCME
GUIDELINES
PROTECTION OF
AQUATIC LIFE
FRESHWATER

0 12.5 25 50 Meters

SCALE: 1:1,500
WHEN PLOTTED CORRECTLY AT 11 x 17
NAD 1983 UTM Zone 11N

NOTES

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Great Bear Lake Site
2016 Water Quality Monitoring Report

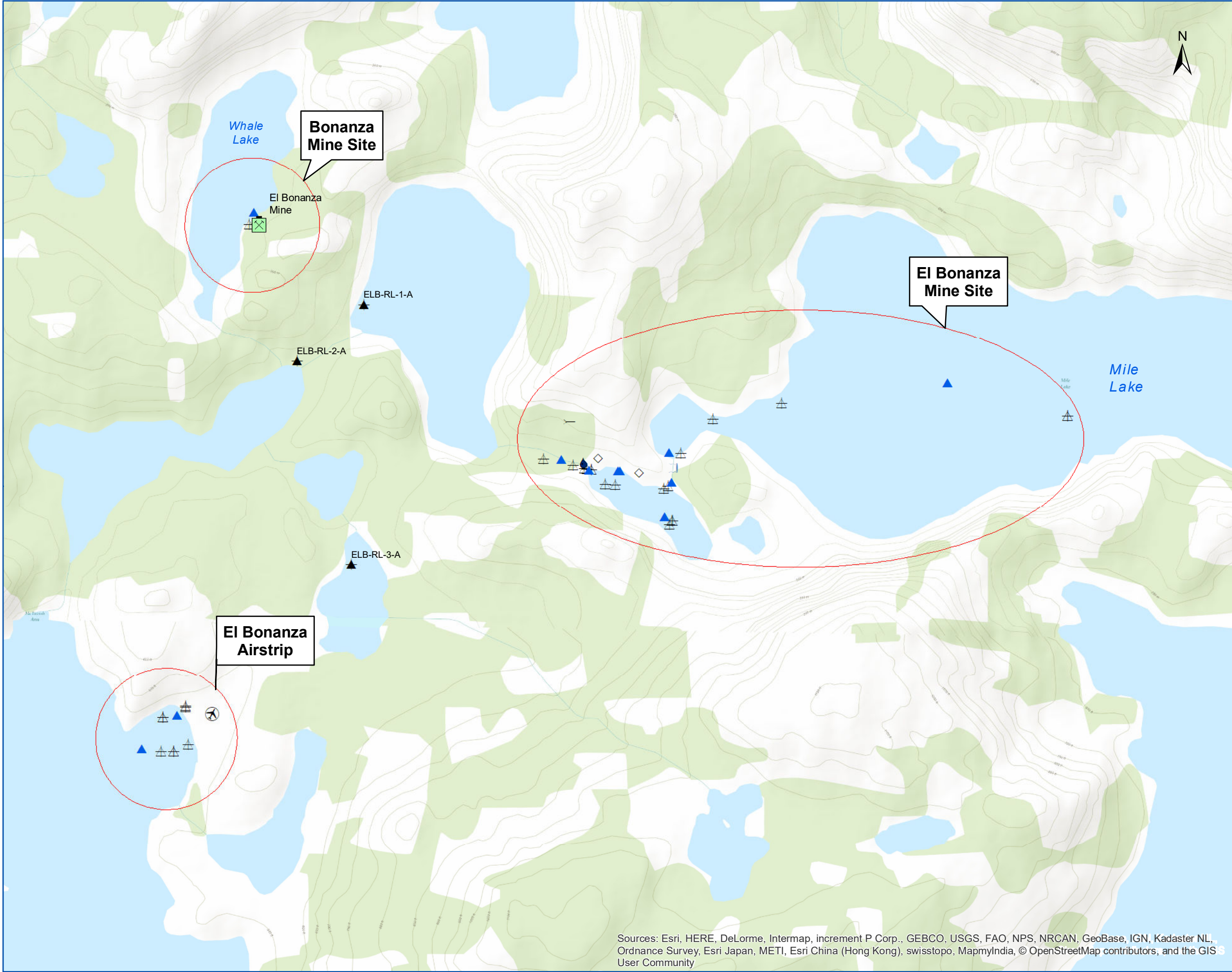
Sawmill Bay - Beach Landing
& Former Arctic Enterprises
2016 Surface Water Data

March 16, 2018	Rev 0.1	Drawing No.
Project No.	234.01016.00001	2 d

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



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LEGEND

SURFACE WATER
SAMPLE LOCATION
(SLR 2016)

CULVERT OR
CHANNEL CREEK

AIRSTRIP

MINE

ADIT

DEBRIS

STAGNANT POOL

SURFACE WATER
SAMPLE LOCATION
(HISTORICAL)

BACKGROUND
SURFACE WATER
SAMPLE LOCATION
(HISTORICAL)

SCALE: 1:10,200
WHEN PLOTTED CORRECTLY AT 11 x 17
NAD 1983 UTM Zone 11N

NOTES

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Great Bear Lake Sites
2016 Water Quality Monitoring Report

El Bonanza/Bonanza Mine Work Areas

March 16, 2018

Rev **0.1**

Drawing No.

Project No.

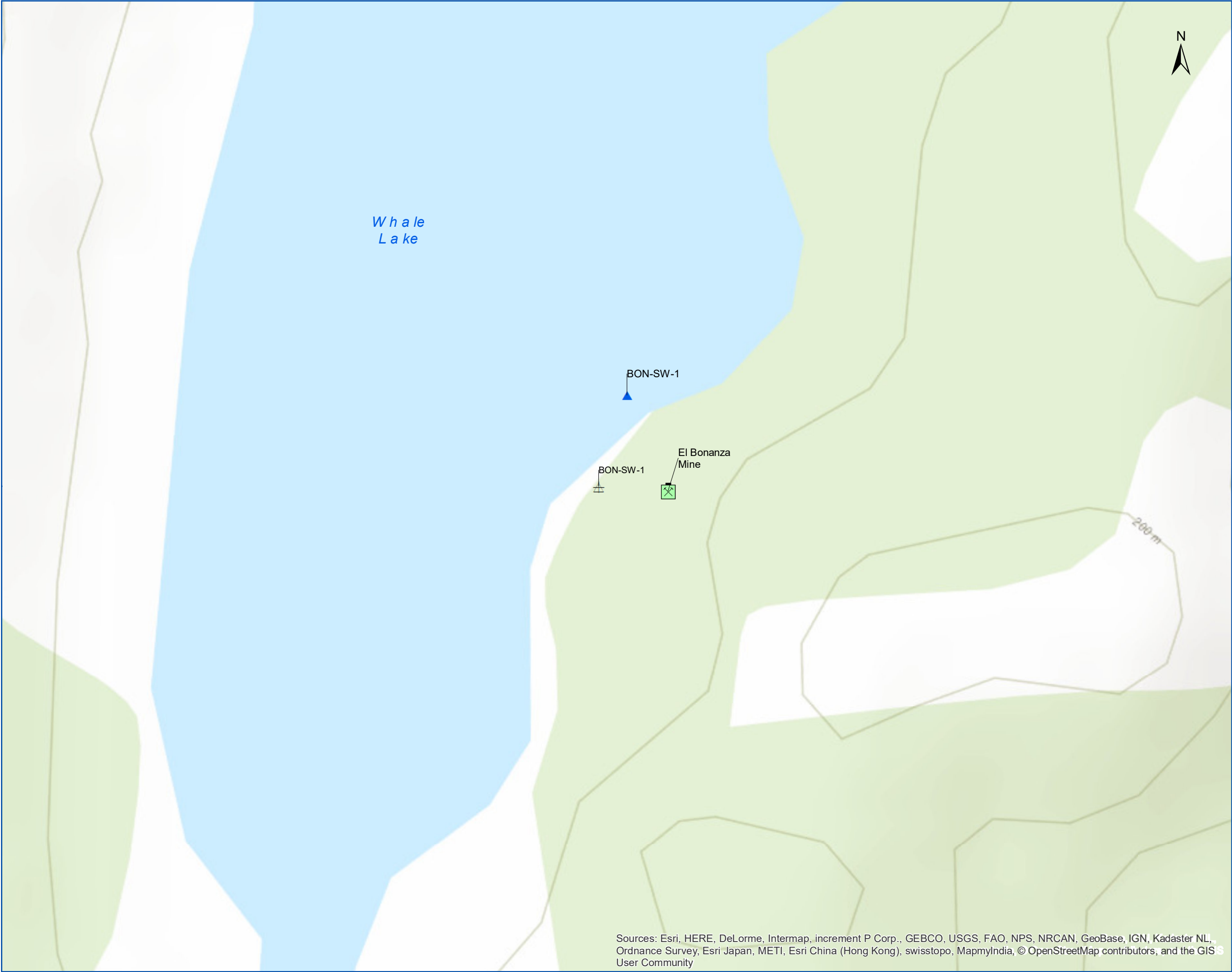
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3




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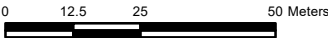
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LEGEND

-  SURFACE WATER SAMPLE LOCATION (SLR 2016)
-  MINE
-  SURFACE WATER SAMPLE LOCATION (HISTORICAL)



SCALE: 1:1,400
WHEN PLOTTED CORRECTLY AT 11 x 17
NAD 1983 UTM Zone 11N

NOTES

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Basedata: World Imagery - satellite and aerial imagery layer provided by ArcGIS

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Great Bear Lake Sites
2016 Water Quality Monitoring Report

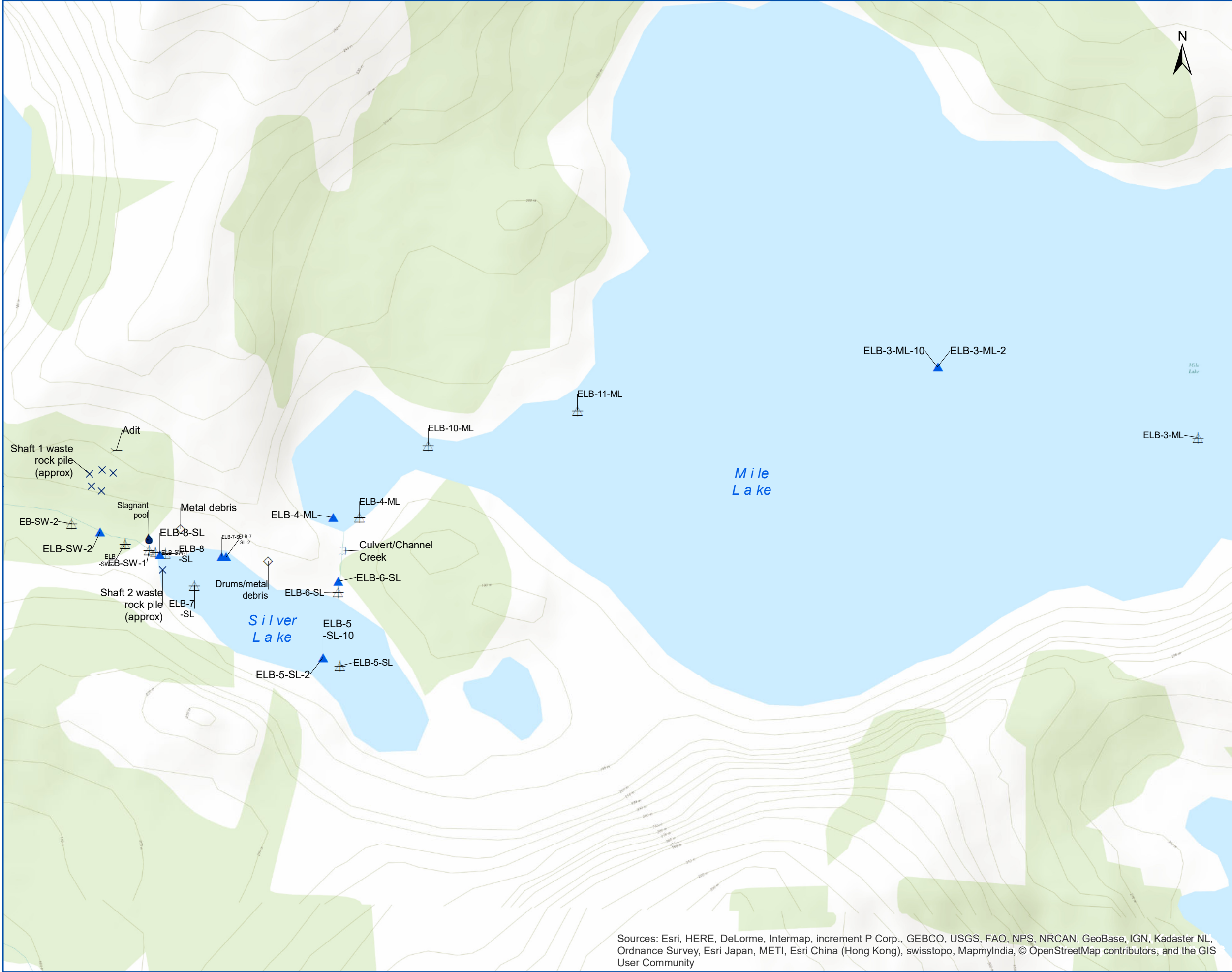
Bonanza - Mine Site
Sample Locations

March 16, 2018	Rev 0.1	Drawing No.
Project No.	234.01016.00001	3 a



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

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LEGEND

SURFACE WATER
SAMPLE LOCATION
(SLR 2016)

CHANNEL CREEK AND
CULVERT

ADIT

DEBRIS

STAGNANT POOL

SCALE: 1:4,700
WHEN PLOTTED CORRECTLY AT 11 x 17
NAD 1983 UTM Zone 11N

NOTES

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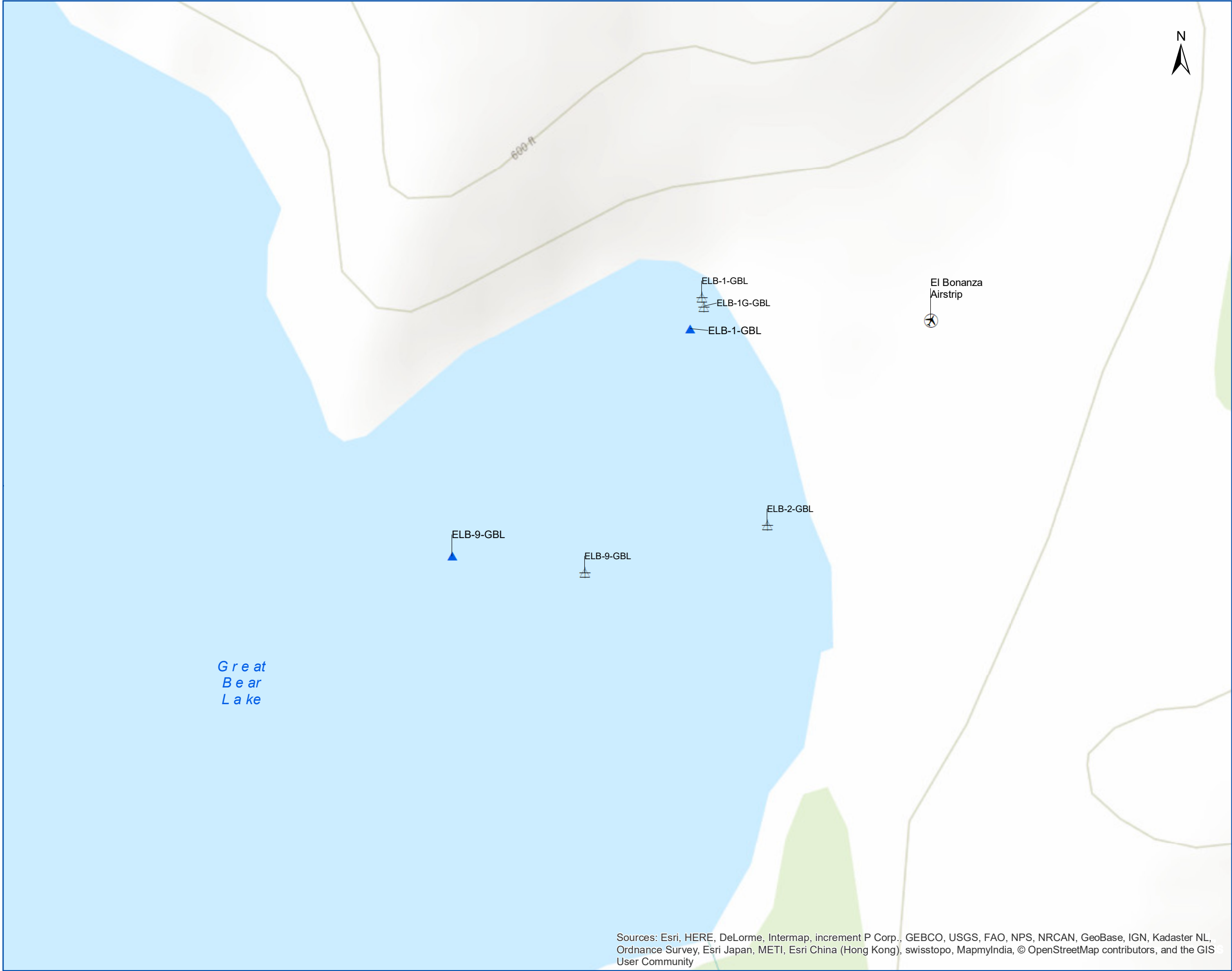
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Great Bear Lake Sites
2016 Water Quality Monitoring Report

El Bonanza - Mine Site
Sample Locations




March 16, 2018	Rev 0.1	Drawing No.
Project No.	234.01016.00001	3 b

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

LEGEND

-  SURFACE WATER SAMPLE LOCATION (SLR 2016)
-  AIRSTRIP
-  SURFACE WATER SAMPLE LOCATION (HISTORICAL)

0 12.5 25 50 Meters
SCALE: 1:1,500
WHEN PLOTTED CORRECTLY AT 11 x 17
NAD 1983 UTM Zone 11N

NOTES

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Basedata: World Imagery - satellite and aerial imagery layer provided by ArcGIS

INAC - CARD

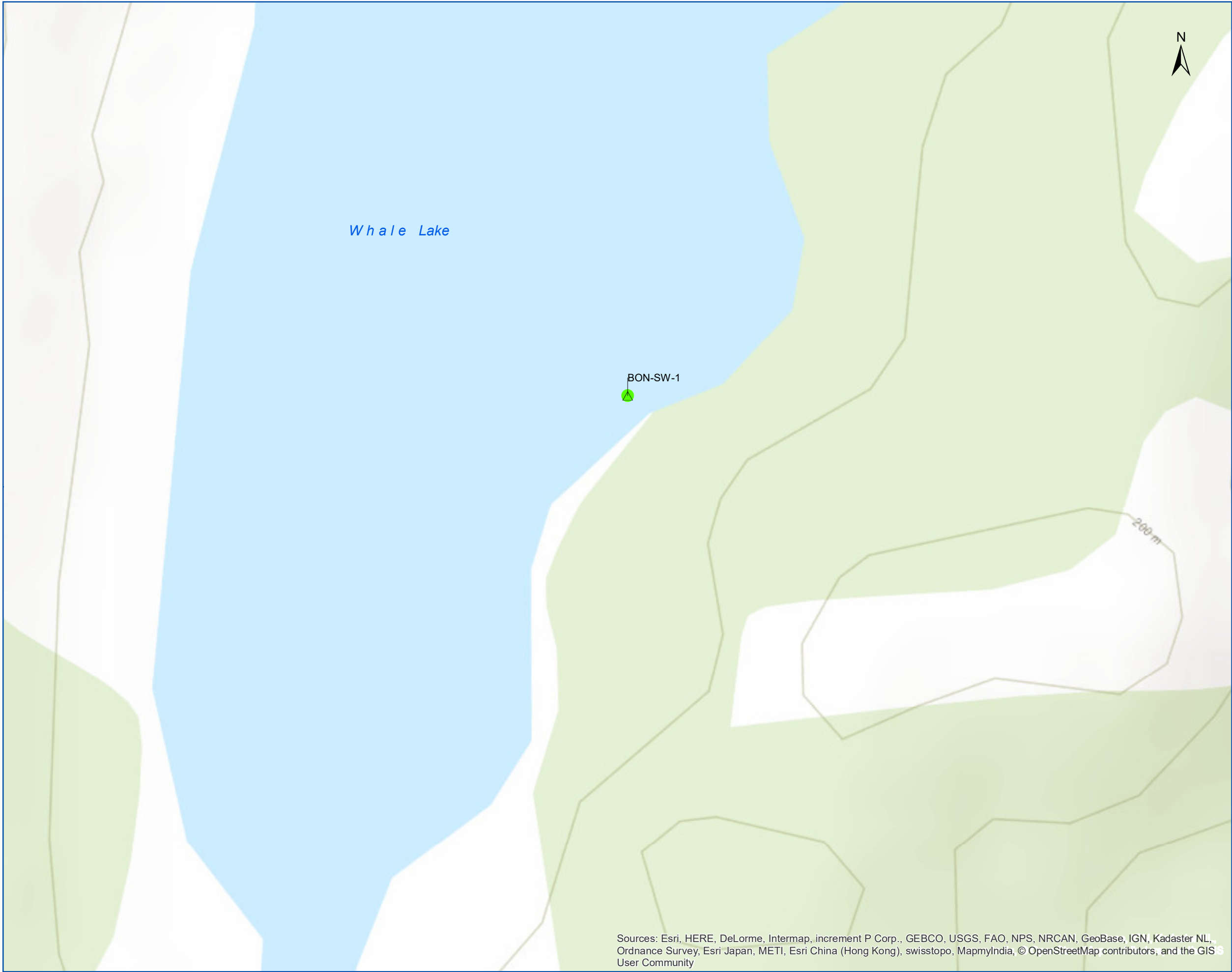
Great Bear Lake Sites
2016 Water Quality Monitoring Report

El Bonanza - Airstrip
Sample Locations

March 16, 2018	Rev 0.1	Drawing No.
Project No.	234.01016.00001	3 c



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LEGEND

- △

SURFACE WATER
SAMPLE LOCATION
(SLR 2016)
- CONCENTRATIONS
LESS THAN CCME
GUIDELINES
PROTECTION OF
AQUATIC LIFE
FRESHWATER

0 12.5 25 50 Meters
SCALE: 1:1,400
WHEN PLOTTED CORRECTLY AT 11 x 17
NAD 1983 UTM Zone 11N

NOTES

This map is for conceptual purposes only and should not be used for navigational purposes.
Basedata: World Imagery - topographical and aerial imagery \ layer provided by ArcGIS

INAC - CARD

Great Bear Lake Sites
2016 Water Quality Monitoring Report

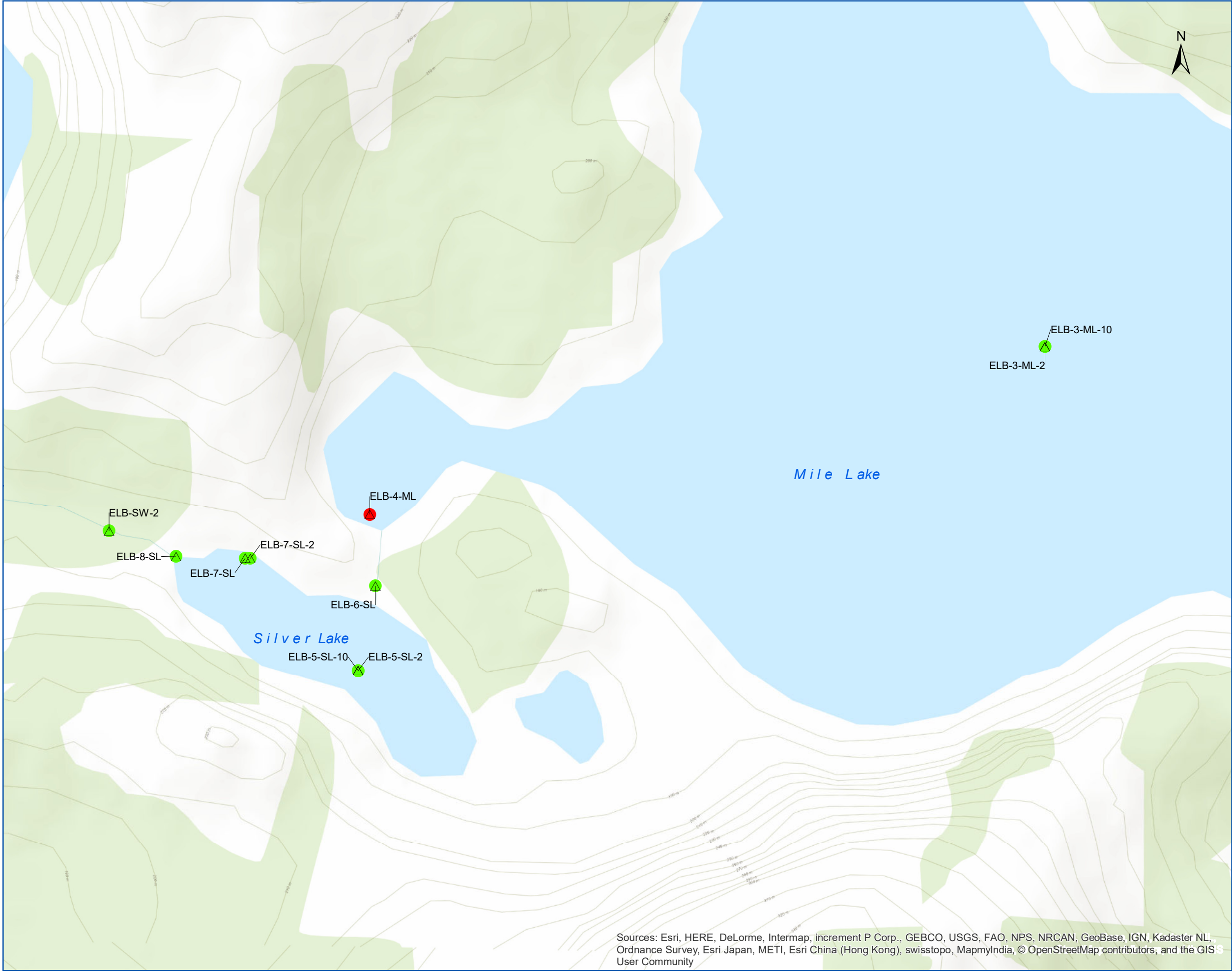
Bonanza - Mine Site
2016 Surface Water Data

March 16, 2018	Rev 0.1	Drawing No.
Project No.	234.01016.00001	3 d



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

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

LEGEND

△ SURFACE WATER
SAMPLE LOCATION
(SLR 2016)

● CONCENTRATIONS
LESS THAN CCME
GUIDELINES
PROTECTION OF
AQUATIC LIFE
FRESHWATER

● CONCENTRATIONS
GREATER THAN CCME
GUIDELINES
PROTECTION OF
AQUATIC LIFE
FRESHWATER

0 37.5 75 150 Meters

SCALE: 1:4,200
WHEN PLOTTED CORRECTLY AT 11 x 17
NAD 1983 UTM Zone 11N

NOTES

This map is for conceptual purposes only and should not be used for navigational purposes.
Basedata: World Imagery - topographical and aerial imagery \ layer provided by ArcGIS

INAC - CARD

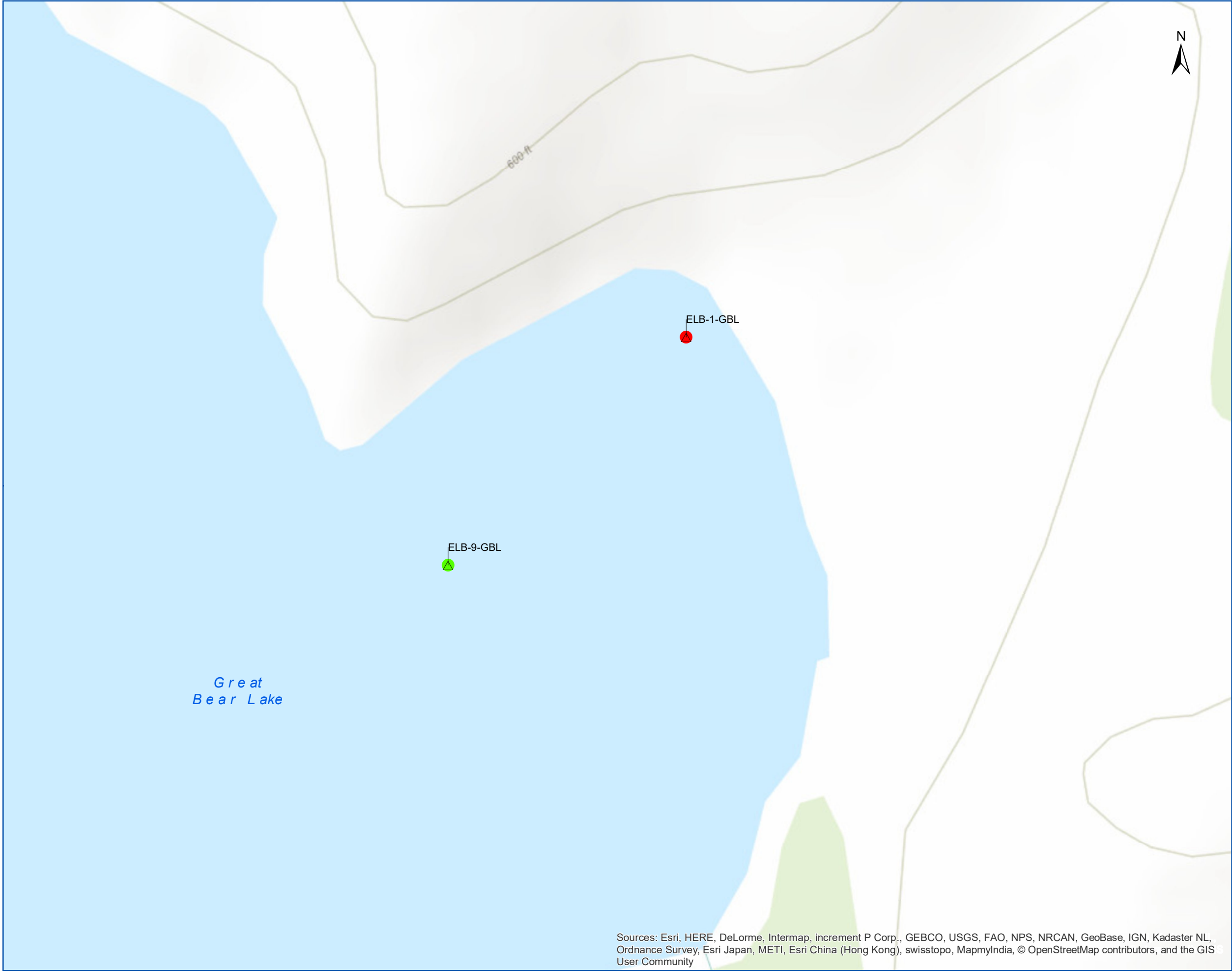
Great Bear Lake Sites
2016 Water Quality Monitoring Report

El Bonanza - Mine Site
2016 Surface Water Data

March 16, 2018	Rev 0.1	Drawing No.
Project No.	234.01016.00001	3 e



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LEGEND

△ SURFACE WATER
SAMPLE LOCATION
(SLR 2016)

● CONCENTRATIONS
LESS THAN CCME
GUIDELINES
PROTECTION OF
AQUATIC LIFE
FRESHWATER

● CONCENTRATIONS
GREATER THAN CCME
GUIDELINES
PROTECTION OF
AQUATIC LIFE
FRESHWATER

0 12.5 25 50 Meters

SCALE: 1:1,500
WHEN PLOTTED CORRECTLY AT 11 x 17
NAD 1983 UTM Zone 11N

NOTES

This map is for conceptual purposes only and should not be used for navigational purposes.
Basedata: World Imagery - topographical and aerial imagery \ layer provided by ArcGIS

INAC - CARD

Great Bear Lake Sites
2016 Water Quality Monitoring Report

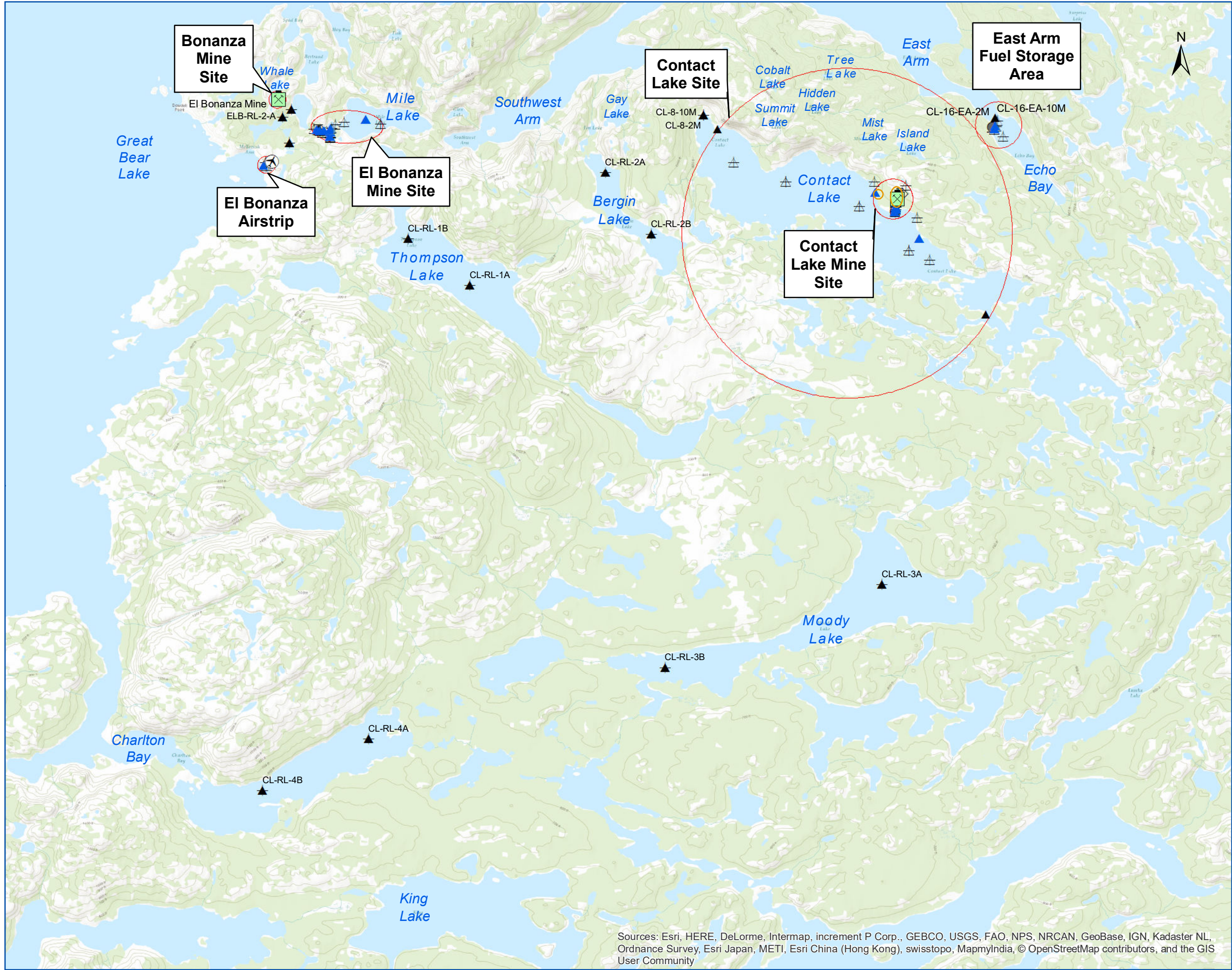
El Bonanza - Air Strip
2016 Surface Water Data

March 16, 2018	Rev 0.1	Drawing No.
Project No.	234.01016.00001	3 f



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

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

LEGEND

- AREA OF INTEREST
- SURFACE WATER SAMPLE LOCATION (SLR 2016)
- BACKGROUND SURFACE WATER SAMPLE LOCATION (SLR 2016)
- MINE
- AST
- CABIN
- DEBRIS
- HEADFRAME
- OUTFLOW
- SEEP
- SURFACE WATER SAMPLE LOCATION (HISTORICAL)
- BACKGROUND SURFACE WATER SAMPLE LOCATION (HISTORICAL)

0 700 1,400 2,800 Meters

SCALE: 1:80,100
WHEN PLOTTED CORRECTLY AT 11 x 17
NAD 1983 UTM Zone 11N

NOTES

This map is for conceptual purposes only and should not be used for navigational purposes.
Basedata: World Imagery - topographical and aerial imagery layer provided by ArcGIS

INAC - CARD

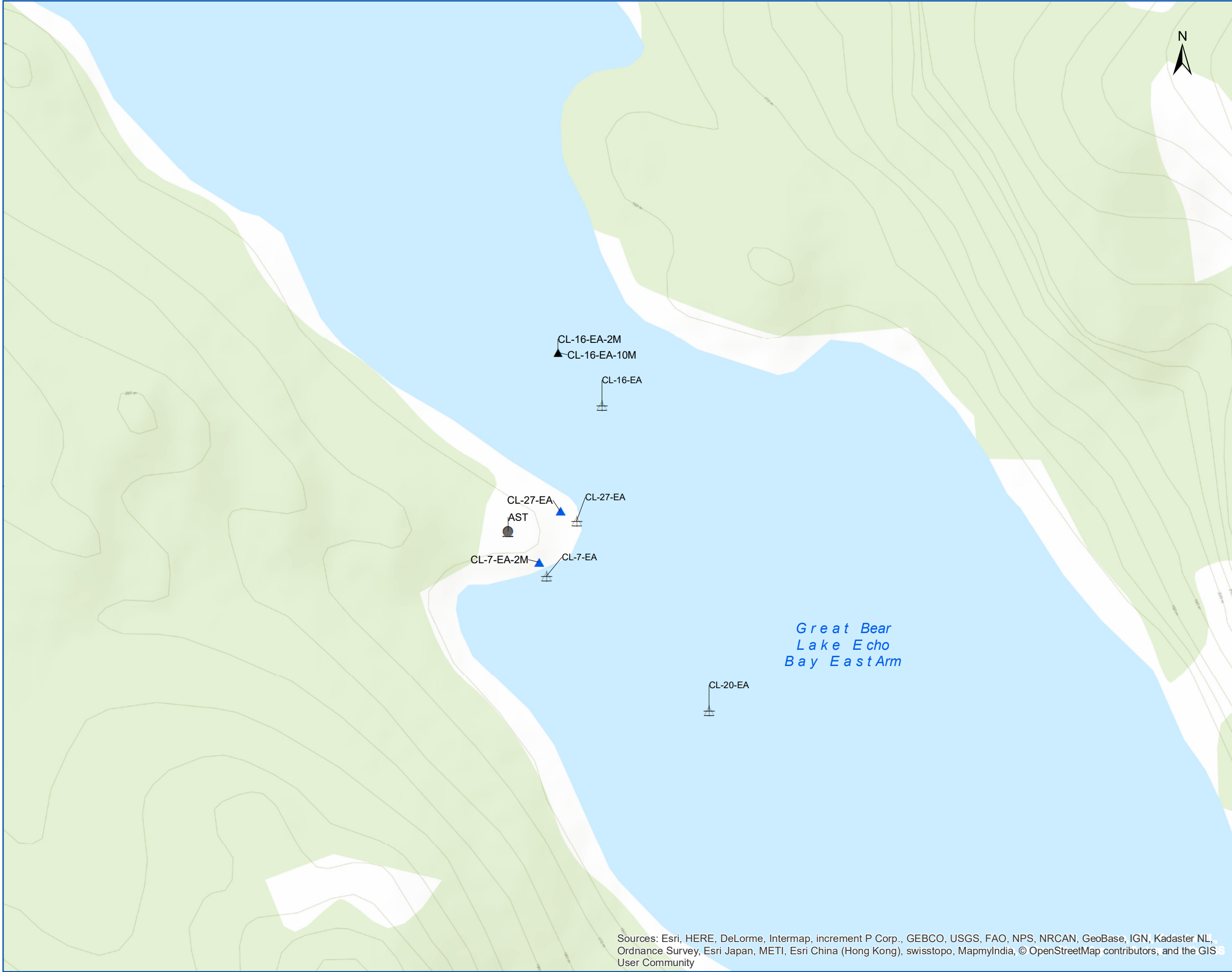
Great Bear Lake Sites
2016 Water Quality Monitoring Report

Contact Lake Work Areas

March 16, 2018	Rev 0.1	Drawing No.
Project No.	234.01016.00001	4







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

LEGEND

-  SURFACE WATER SAMPLE LOCATION (SLR 2016)
-  BACKGROUND SURFACE WATER SAMPLE LOCATION (SLR 2016)
-  AST
-  SURFACE WATER SAMPLE LOCATION (HISTORICAL)

0 37.5 75 150 Meters

SCALE: 1:4,200
WHEN PLOTTED CORRECTLY AT 11 x 17
NAD 1983 UTM Zone 11N

NOTES

This map is for conceptual purposes only and should not be used for navigational purposes.
Basedata: World Imagery - topographical and aerial imagery layer provided by ArcGIS

INAC - CARD

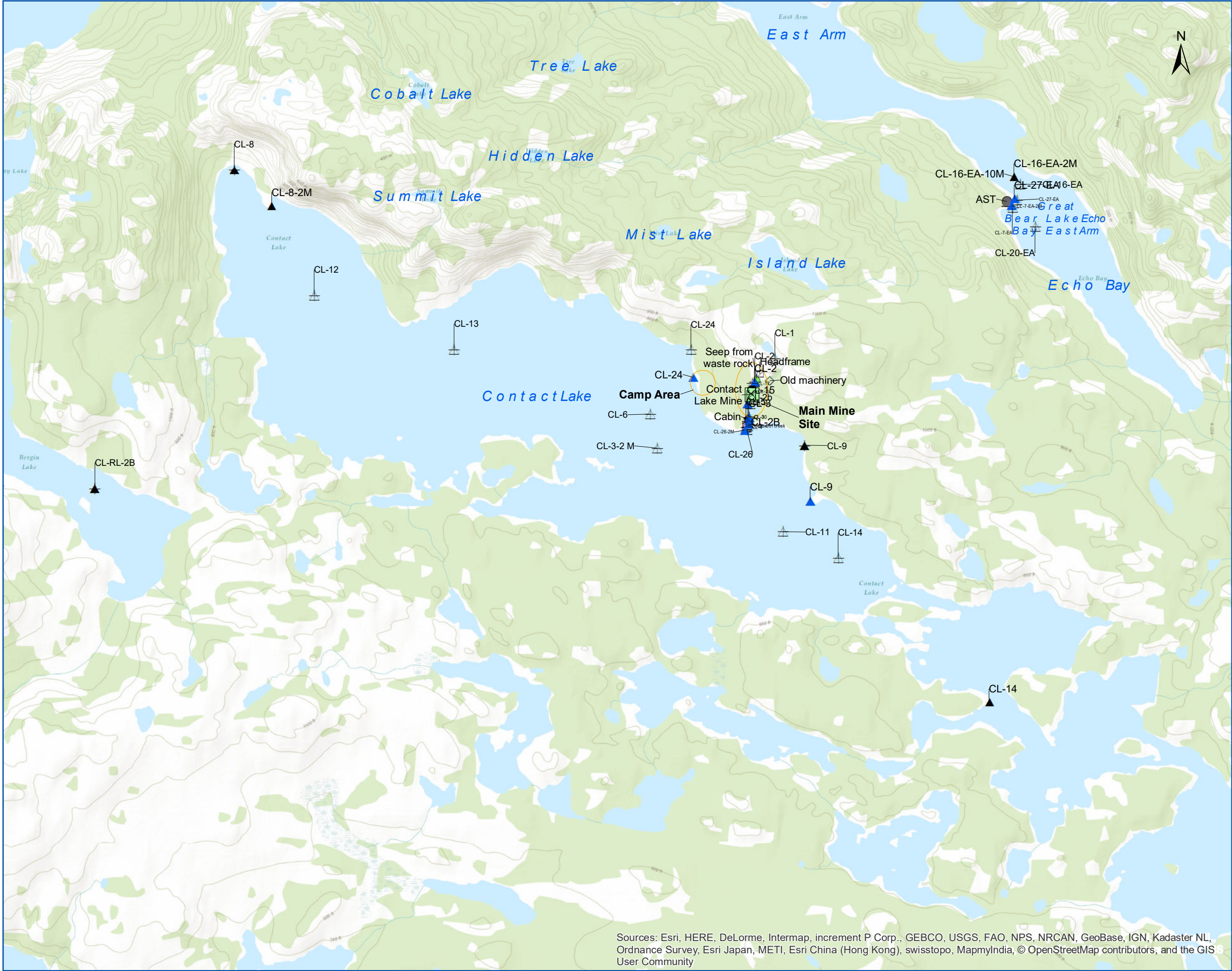
Great Bear Lake Sites
2016 Water Quality Monitoring Report

Contact Lake - East Arm
Fuel Storage Area
Sample Locations

March 16, 2018	Rev 0.1	Drawing No.
Project No.	234.01016.00001	4 a













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

LEGEND

-  SURFACE WATER SAMPLE LOCATION (SLR 2016)
-  BACKGROUND SURFACE WATER SAMPLE LOCATION (SLR 2016)
-  MINE
-  CABIN
-  DEBRIS
-  HEADFRAME
-  OUTFLOW
-  SEEP
-  SURFACE WATER SAMPLE LOCATION (HISTORICAL)
-  BACKGROUND SURFACE WATER SAMPLE LOCATION (HISTORICAL)

0 265 530 1,060 Meters

SCALE: 1:30,000
WHEN PLOTTED CORRECTLY AT 11 x 17
NAD 1983 UTM Zone 11N

NOTES

This map is for conceptual purposes only and should not be used for navigational purposes.
Basedata: World Imagery - topographical and aerial imagery layer provided by ArcGIS

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Great Bear Lake Sites
2016 Water Quality Monitoring Report

Contact Lake -
Sample Locations

March 16, 2018	Rev 0.1	Drawing No.
Project No.	234.01016.00001	4 b



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Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBSCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

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

LEGEND

△

SURFACE WATER
SAMPLE LOCATION
(SLR 2016)

▲

BACKGROUND
SURFACE WATER
SAMPLE LOCATION
(SLR 2016)

●

CONCENTRATIONS
LESS THAN CCME
GUIDELINES
PROTECTION OF
AQUATIC LIFE
FRESHWATER

●

CONCENTRATIONS
GREATER THAN CCME
GUIDELINES
PROTECTION OF
AQUATIC LIFE
FRESHWATER

037.575150 Meters

SCALE: 1:4,200

WHEN PLOTTED CORRECTLY AT 11 x 17
NAD 1983 UTM Zone 11N

NOTES

This map is for conceptual purposes only and should not be
used for navigational purposes.
Basedata: World Imagery - topographical and aerial imagery
layer provided by ArcGIS

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Great Bear Lake Sites
2016 Water Quality Monitoring Report

Contact Lake - East Arm
Fuel Storage Area
2016 Surface Water Data

March 16, 2018

Rev0.1

Drawing No.

Project No.

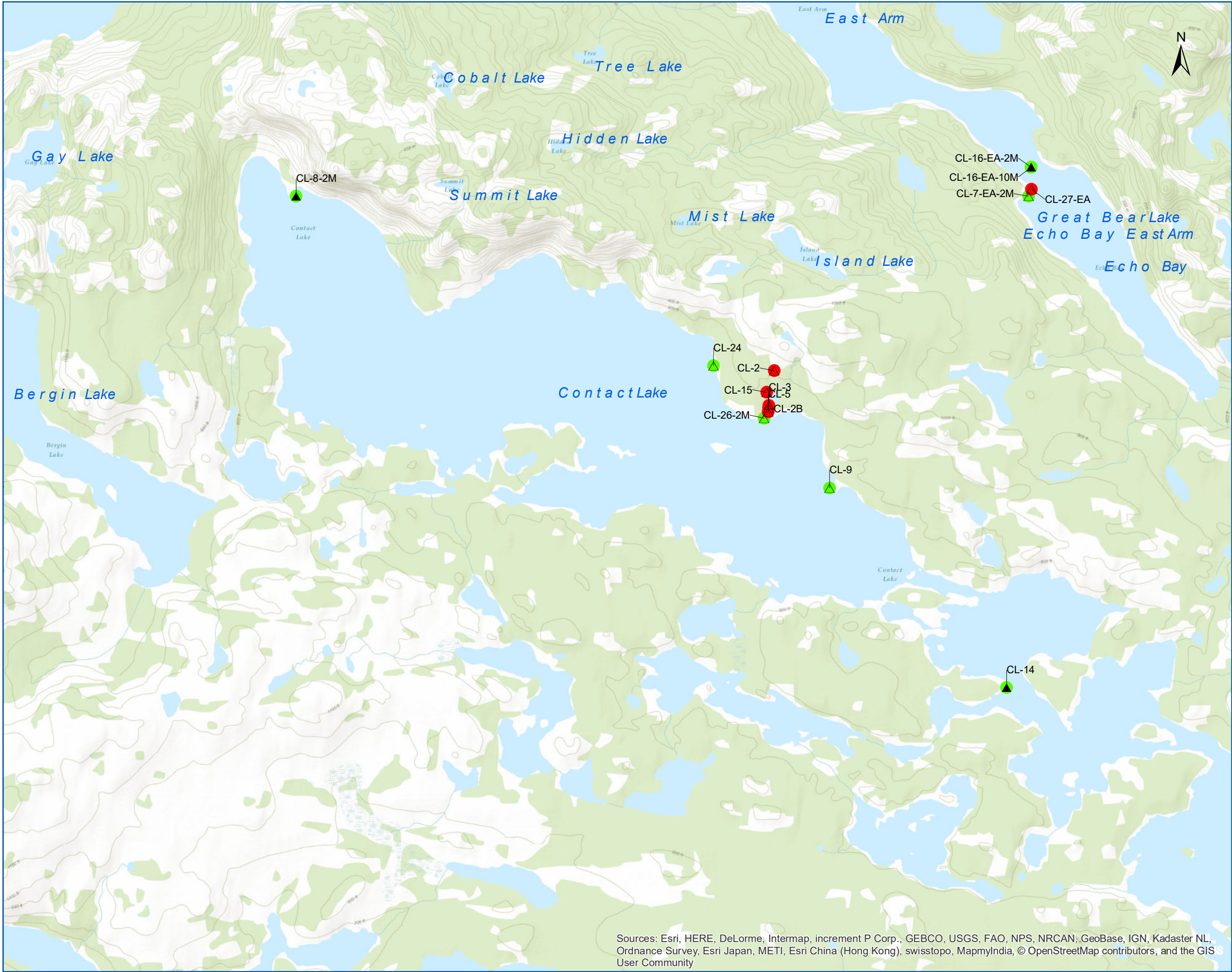
234.01016.00001

4 d

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

LEGEND

△ SURFACE WATER
SAMPLE LOCATION
(SLR 2016)

▲ BACKGROUND
SURFACE WATER
SAMPLE LOCATION
(SLR 2016)

● CONCENTRATIONS
LESS THAN CCME
GUIDELINES
PROTECTION OF
AQUATIC LIFE
FRESHWATER

● CONCENTRATIONS
GREATER THAN CCME
GUIDELINES
PROTECTION OF
AQUATIC LIFE
FRESHWATER

0 270 540 1,080 Meters

SCALE: 1:30,300
WHEN PLOTTED CORRECTLY AT 11 x 17
NAD 1983 UTM Zone 11N

NOTES

This map is for conceptual purposes only and should not be used for navigational purposes.
Basedata: World Imagery - topographical and aerial imagery layer provided by ArcGIS

INAC - CARD

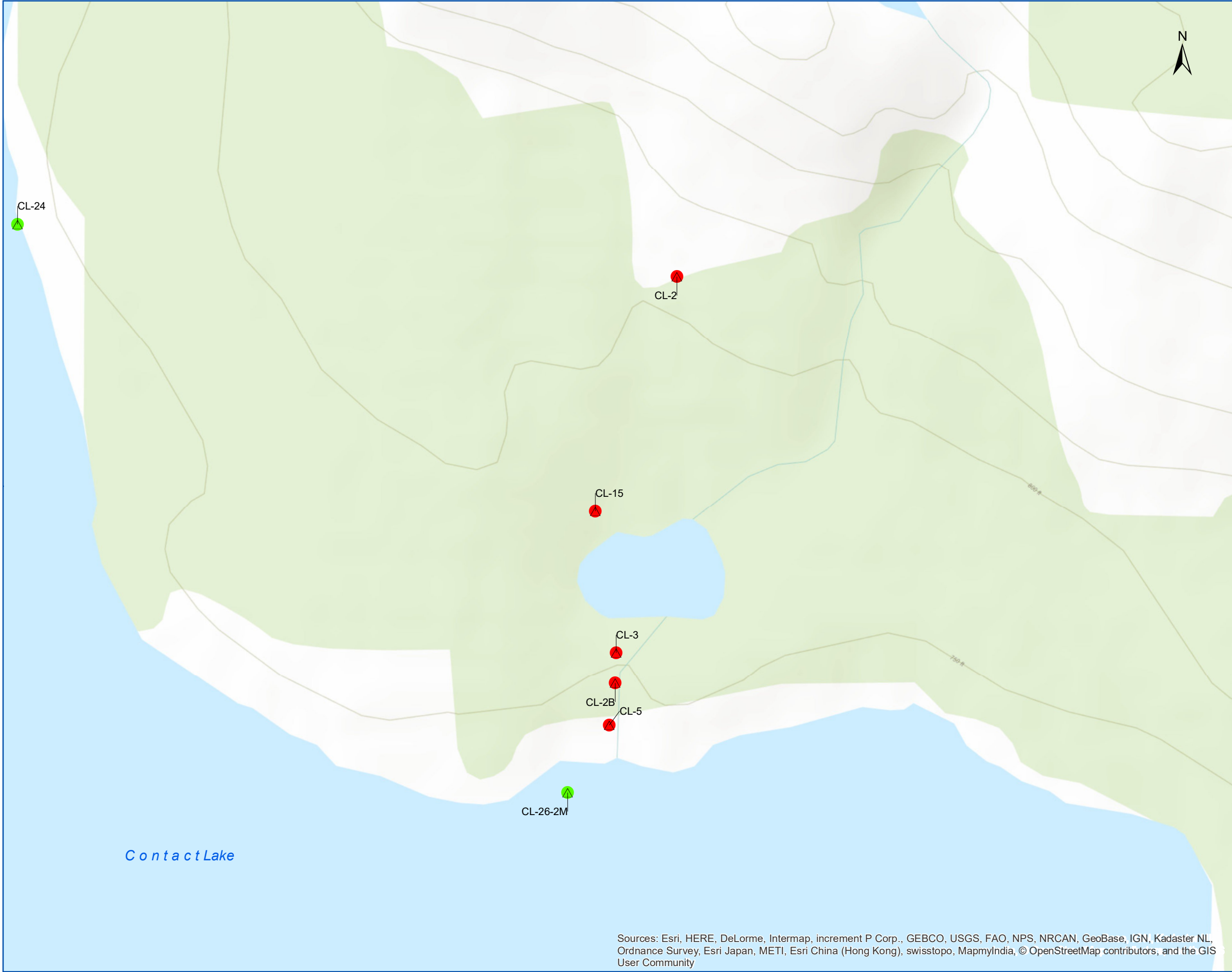
Great Bear Lake Sites
2016 Water Quality Monitoring Report

Contact Lake
2016 Surface Water Data


March 16, 2018	Rev 0.1	Drawing No.
Project No.	234.01016.00001	4 e




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LEGEND

 SURFACE WATER
SAMPLE LOCATION
(SLR 2016)



CONCENTRATIONS
LESS THAN CCME
GUIDELINES
PROTECTION OF
AQUATIC LIFE
FRESHWATER



CONCENTRATIONS
GREATER THAN CCME
GUIDELINES
PROTECTION OF
AQUATIC LIFE
FRESHWATER

0

25

50

100 Meters

SCALE: 1:2,800

WHEN PLOTTED CORRECTLY AT 11 x 17

NAD 1983 UTM Zone 11N

NOTES

This map is for conceptual purposes only and should not be used for navigational purposes.
Basedata: World Imagery - topographical and aerial imagery layer provided by ArcGIS

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Great Bear Lake Sites
2016 Water Quality Monitoring Report

Contact Lake - Mine Site
2016 Surface Water Data

March 16, 2018	Rev	0.1	Drawing No.
Project No.	234.01016.00001		4 f

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

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

LEGEND

- AREA OF INTEREST
- SURFACE WATER SAMPLE LOCATION (SLR 2016)
- AIRSTRIP
- BACKGROUND SURFACE WATER SAMPLE LOCATION (SLR 2016)
- ADIT
- DEBRIS
- DRUM
- INAC SAMPLE
- VENT SHAFT
- TEST PIT LOCATION (HISTORICAL)
- SURFACE WATER SAMPLE LOCATION (HISTORICAL)

0 355 710 1,420 Meters

SCALE: 1:39,800
WHEN PLOTTED CORRECTLY AT 11 x 17
NAD 1983 UTM Zone 11N

NOTES

This map is for conceptual purposes only and should not be used for navigational purposes.
Basedata: World Imagery - topographical and aerial imagery layer provided by ArcGIS

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Great Bear Lake Sites
2016 Water Quality Monitoring Report

Silver Bear Work Areas

March 28, 2018	Rev 0.1	Drawing No.
Project No.	234.01016.00001	5



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

- LEGEND
- SURFACE WATER SAMPLE LOCATION (SLR 2016)
 - PROPOSED NEW MONITORING LOCATION
 - AIRSTRIP
 - BACKGROUND SURFACE WATER SAMPLE LOCATION (SLR 2016)
 - VENT SHAFT
 - SURFACE WATER SAMPLE LOCATION (HISTORICAL)
 - DIRECTION OF FLOW
 - MAIN MINE SITE

0 170 340 680 Meters
SCALE: 1:18,600
WHEN PLOTTED CORRECTLY AT 11 x 17
NAD 1983 UTM Zone 11N

NOTES
This map is for conceptual purposes only and should not be used for navigational purposes.
Basedata: World Imagery - topographical and aerial imagery layer provided by ArcGIS

INAC - CARD

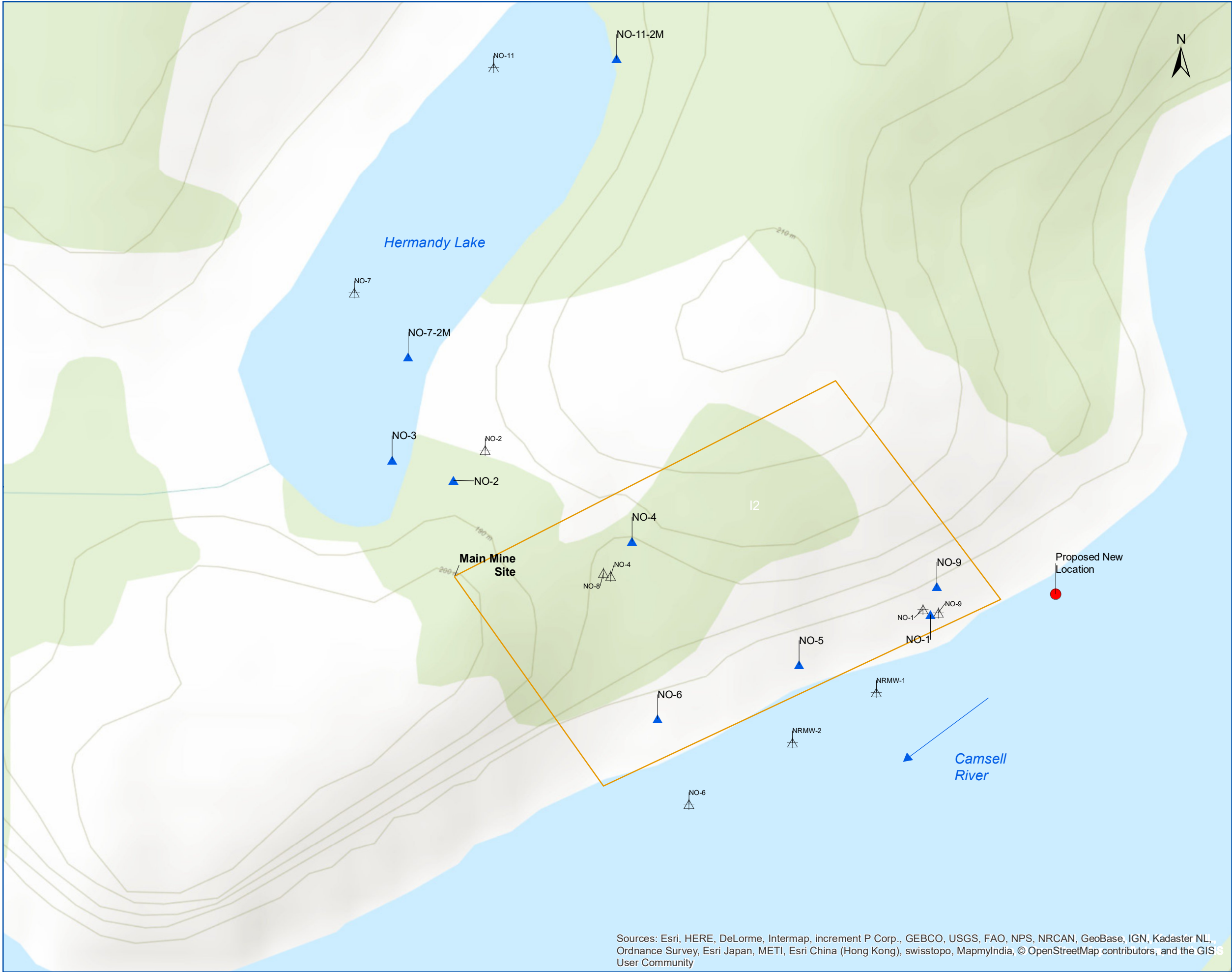
Great Bear Lake Sites
2016 Water Quality Monitoring Report

Silver Bear - Terra
Proposed Monitoring Location

March 28, 2018	Rev 0.2	Drawing No.
Project No.	234.01016.00001	11



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SURFACE WATER
SAMPLE LOCATION

PROPOSED NEW
MONITORING

SURFACE WATER
SAMPLE LOCATION

0204080 Meters

SCALE: 1:2,400

WHEN PLOTTED CORRECTLY AT 11 x 17

NAD 1983 UTM Zone 11N

NOTES

This map is for conceptual purposes only and should not be used for navigational purposes.
Basedata: World Imagery - topographical and aerial imagery layer provided by ArcGIS

INAC - CARD

Great Bear Lake Sites
2016 Water Quality Monitoring Report

Silver Bear - Northrim
Proposed Monitoring Location

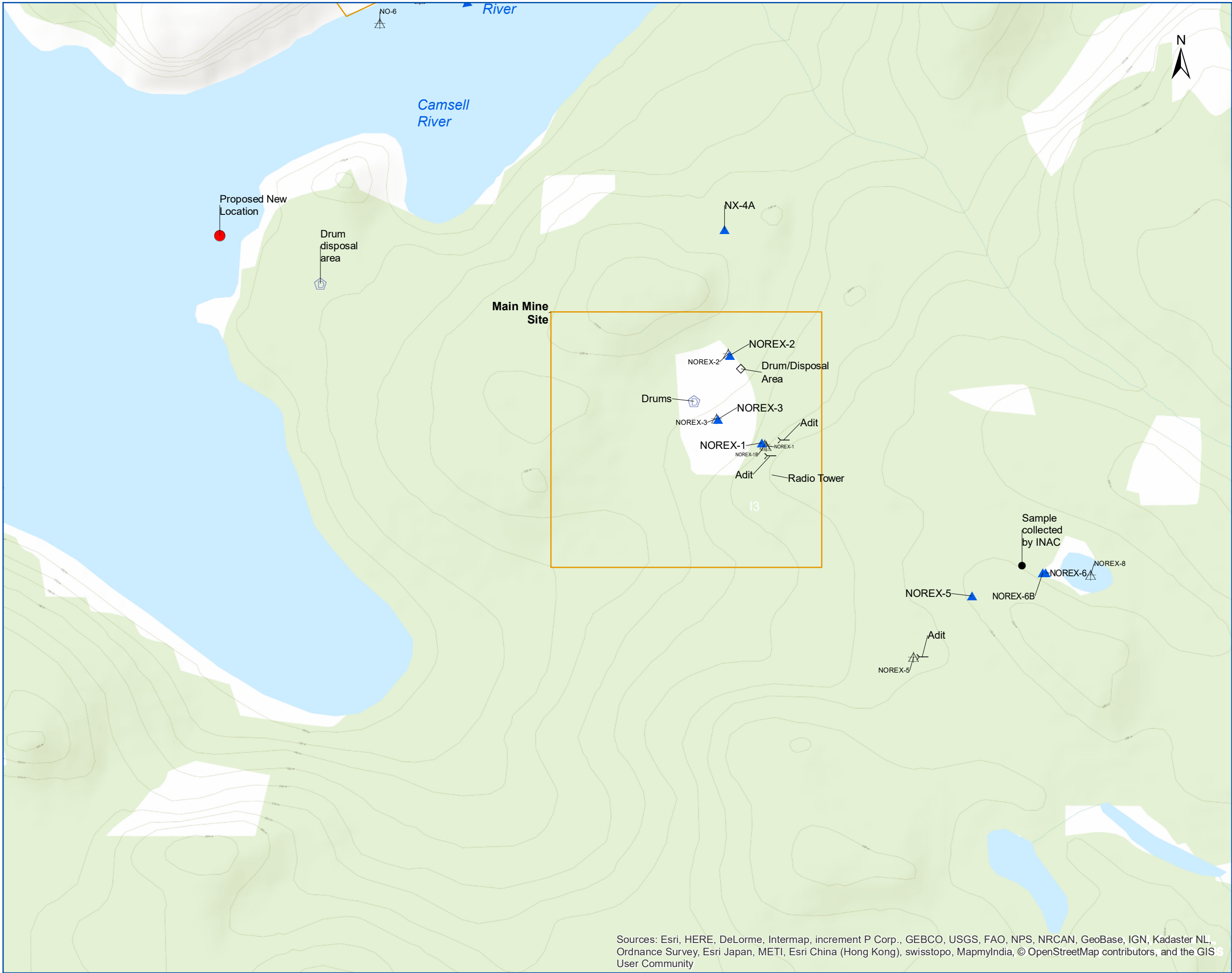
March 16, 2018	Rev 0.1	Drawing No.
Project No.	234.01016.00001	I2

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

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-  SURFACE WATER SAMPLE LOCATION
-  PROPOSED NEW MONITORING
- 
- 
- 
-  SURFACE WATER SAMPLE LOCATION

0 55 110 220 Meters

SCALE: 1:6,200
WHEN PLOTTED CORRECTLY AT 11 x 17
NAD 1983 UTM Zone 11N

NOTES

This map is for conceptual purposes only and should not be used for navigational purposes.
Basedata: World Imagery - topographical and aerial imagery layer provided by ArcGIS

INAC - CARD

Great Bear Lake Sites
2016 Water Quality Monitoring Report

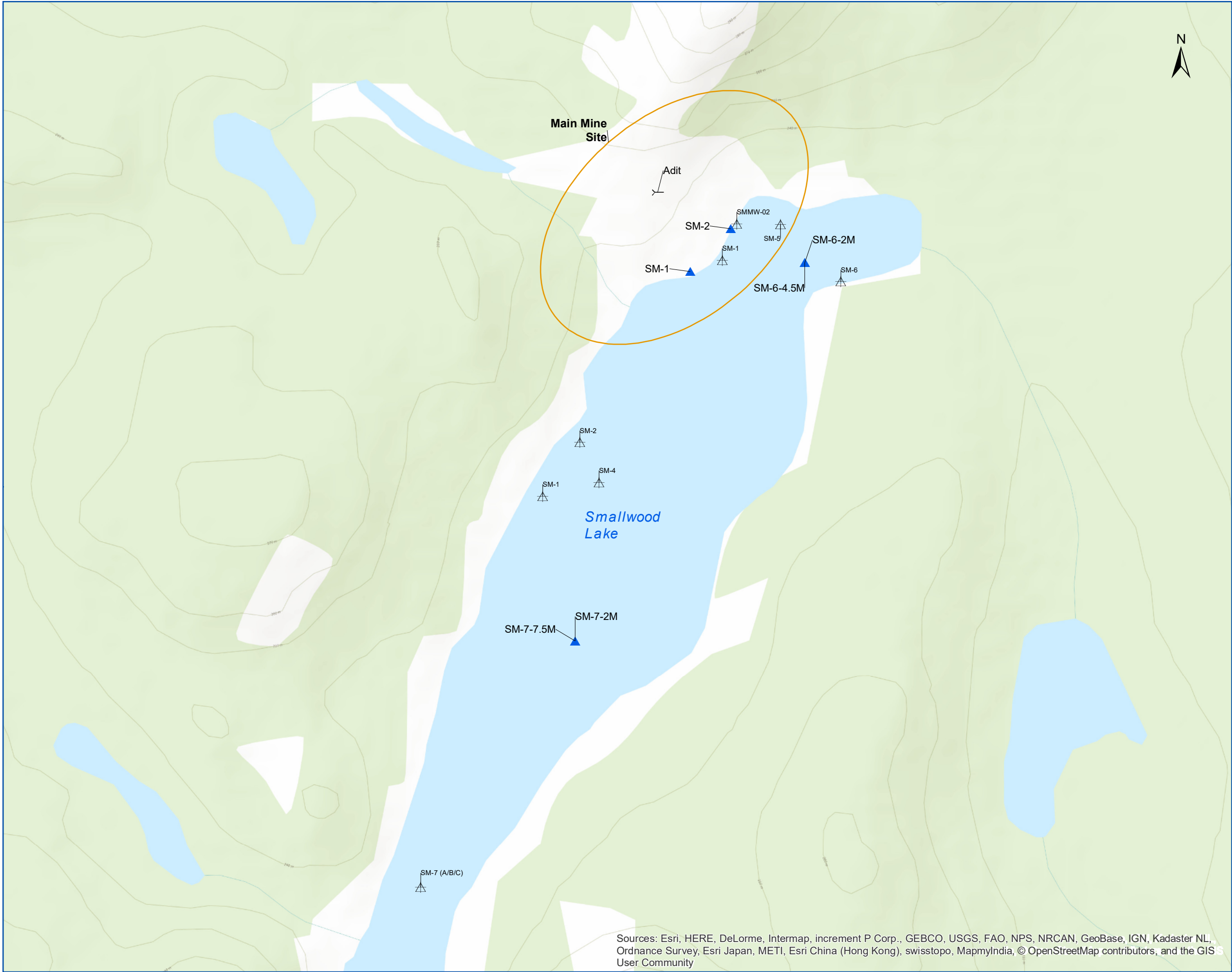
Silver Bear - Norex/Graham Vein
Proposed Monitoring Location

March 16, 2018	Rev 0.1	Drawing No.
Project No.	234.01016.00001	13





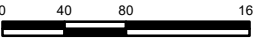
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

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

-  SURFACE WATER SAMPLE LOCATION
-  SURFACE WATER SAMPLE LOCATION


 SCALE: 1:4,900
 WHEN PLOTTED CORRECTLY AT 11 x 17
 NAD 1983 UTM Zone 11N

NOTES
 This map is for conceptual purposes only and should not be used for navigational purposes.
 Basedata: World Imagery - topographical and aerial imagery layer provided by ArcGIS

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Great Bear Lake Sites
2016 Water Quality Monitoring Report

Silver Bear - Smallwood
Sample Locations

March 16, 2018	Rev 0.1	Drawing No.
Project No.	234.01016.00001	



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LEGEND

SURFACE WATER SAMPLE LOCATION (SLR 2016)

CONCENTRATIONS LESS THAN CCME GUIDELINES PROTECTION OF AQUATIC LIFE FRESHWATER

CONCENTRATIONS GREATER THAN CCME GUIDELINES PROTECTION OF AQUATIC LIFE FRESHWATER

CCME GUIDELINES DO NOT APPLY TO ADIT WATER

0

90

180

360 Meters

SCALE: 1:10,000

WHEN PLOTTED CORRECTLY AT 11 x 17

NAD 1983 UTM Zone 11N

NOTES

This map is for conceptual purposes only and should not be used for navigational purposes.
Basedata: World Imagery - topographical and aerial imagery layer provided by ArcGIS

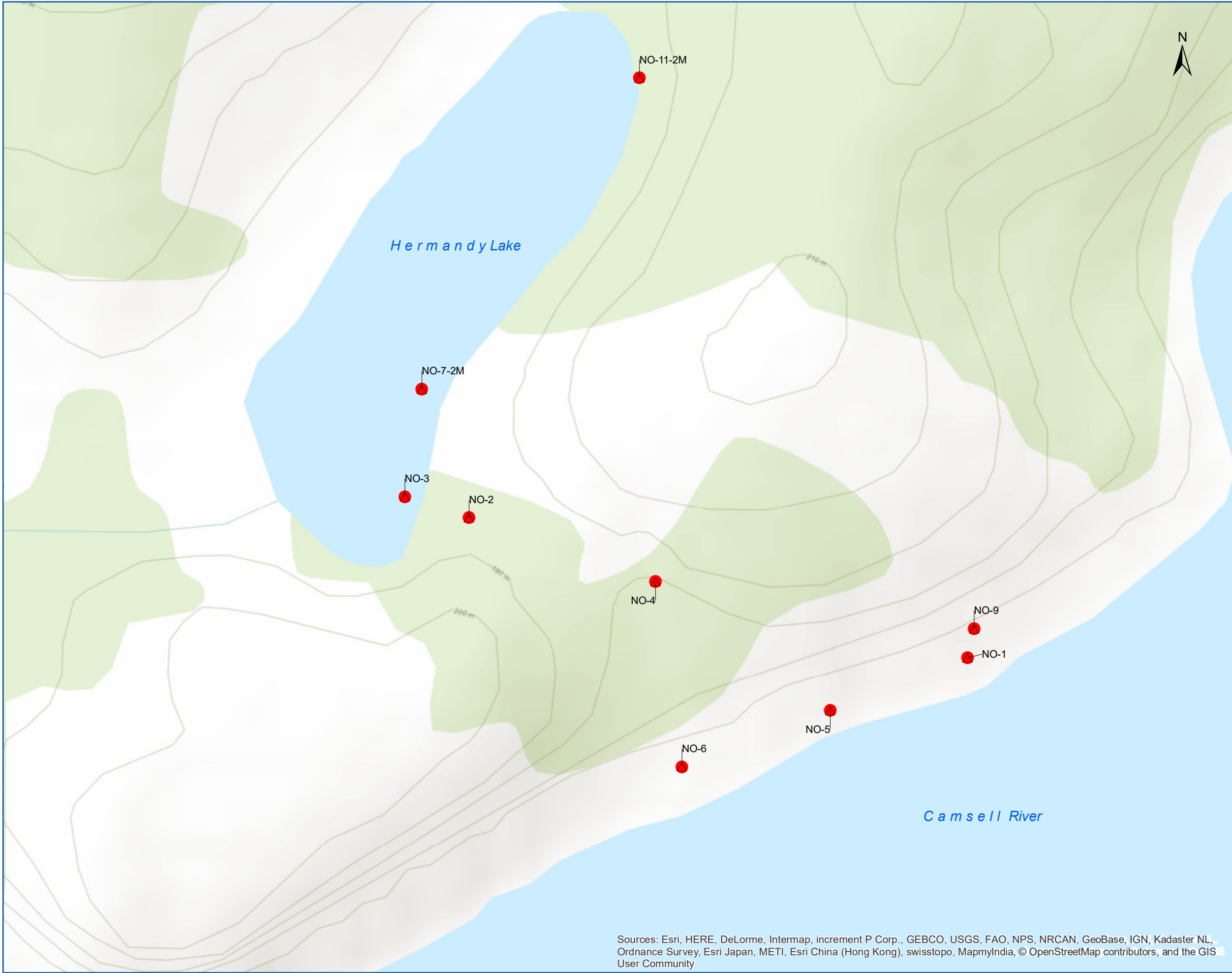
INAC - CARD		
Great Bear Lake Sites 2016 Water Quality Monitoring Report		
Silver Bear - Terra 2016 Surface Water Data		
March 29, 2018	Rev 0.2	Drawing No.
Project No.	234.01016.00001	5 e

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


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LEGEND



SURFACE WATER SAMPLE LOCATION (SLR 2016)



CONCENTRATIONS GREATER THAN CCME GUIDELINES PROTECTION OF AQUATIC LIFE FRESHWATER

0

20

40

80 Meters

SCALE: 1:2,300

WHEN PLOTTED CORRECTLY AT 11 x 17 NAD 1983 UTM Zone 11N

NOTES

This map is for conceptual purposes only and should not be used for navigational purposes.
Basedata: World Imagery - topographical and aerial imagery layer provided by ArcGIS

INAC - CARD		
Great Bear Lake Sites 2016 Water Quality Monitoring Report		
Silver Bear - Northrim 2016 Surface Water Data		
March 16, 2018	Rev 0.1	Drawing No.
Project No.	234.01016.00001	5 f

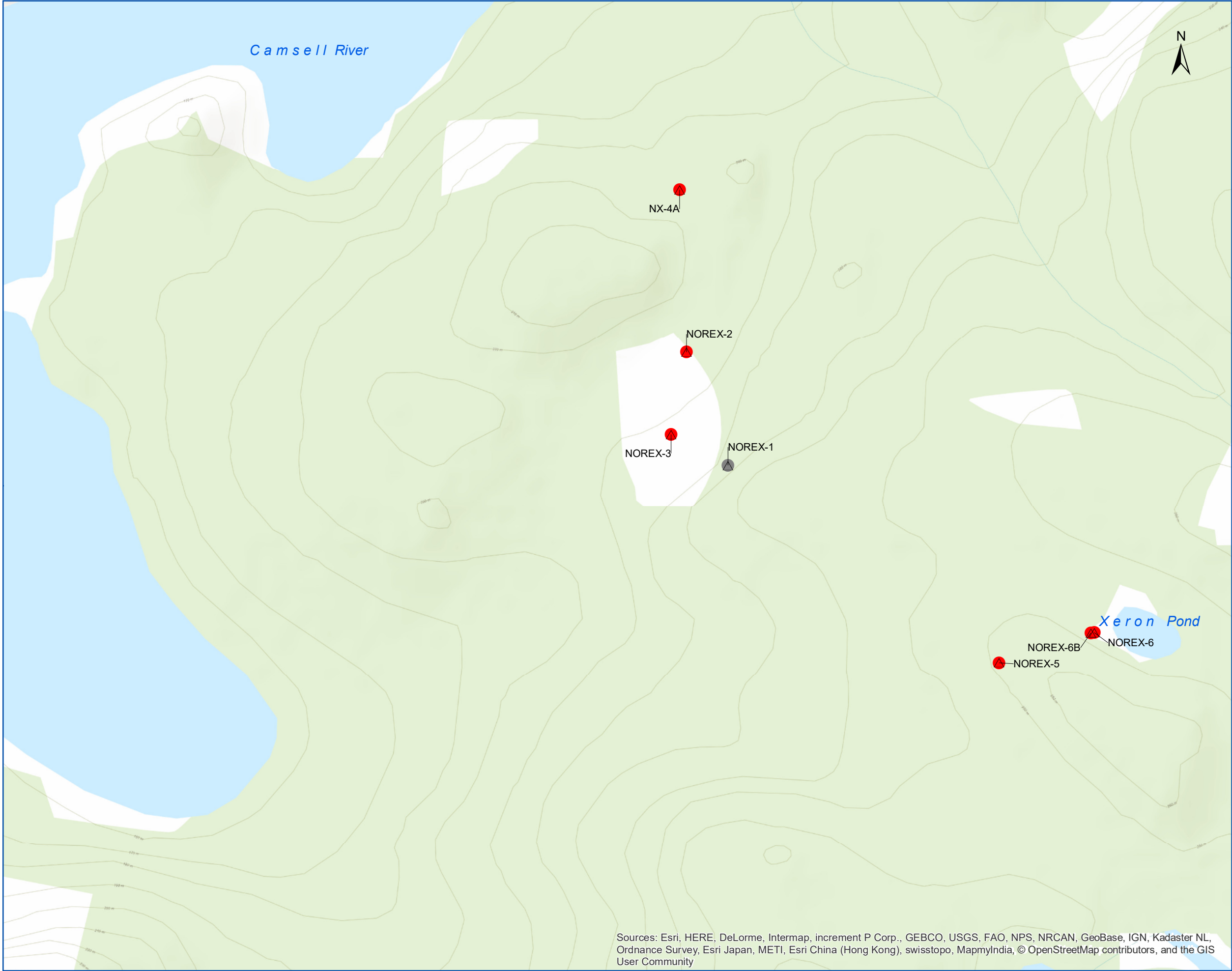
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

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

LEGEND

-  SURFACE WATER SAMPLE LOCATION (SLR 2016)
-  CONCENTRATIONS GREATER THAN CCME GUIDELINES PROTECTION OF AQUATIC LIFE FRESHWATER
-  CCME GUIDELINES DO NOT APPLY TO ADIT WATER



SCALE: 1:4,800
WHEN PLOTTED CORRECTLY AT 11 x 17
NAD 1983 UTM Zone 11N

NOTES

This map is for conceptual purposes only and should not be used for navigational purposes.
Basedata: World Imagery - topographical and aerial imagery layer provided by ArcGIS

INAC - CARD

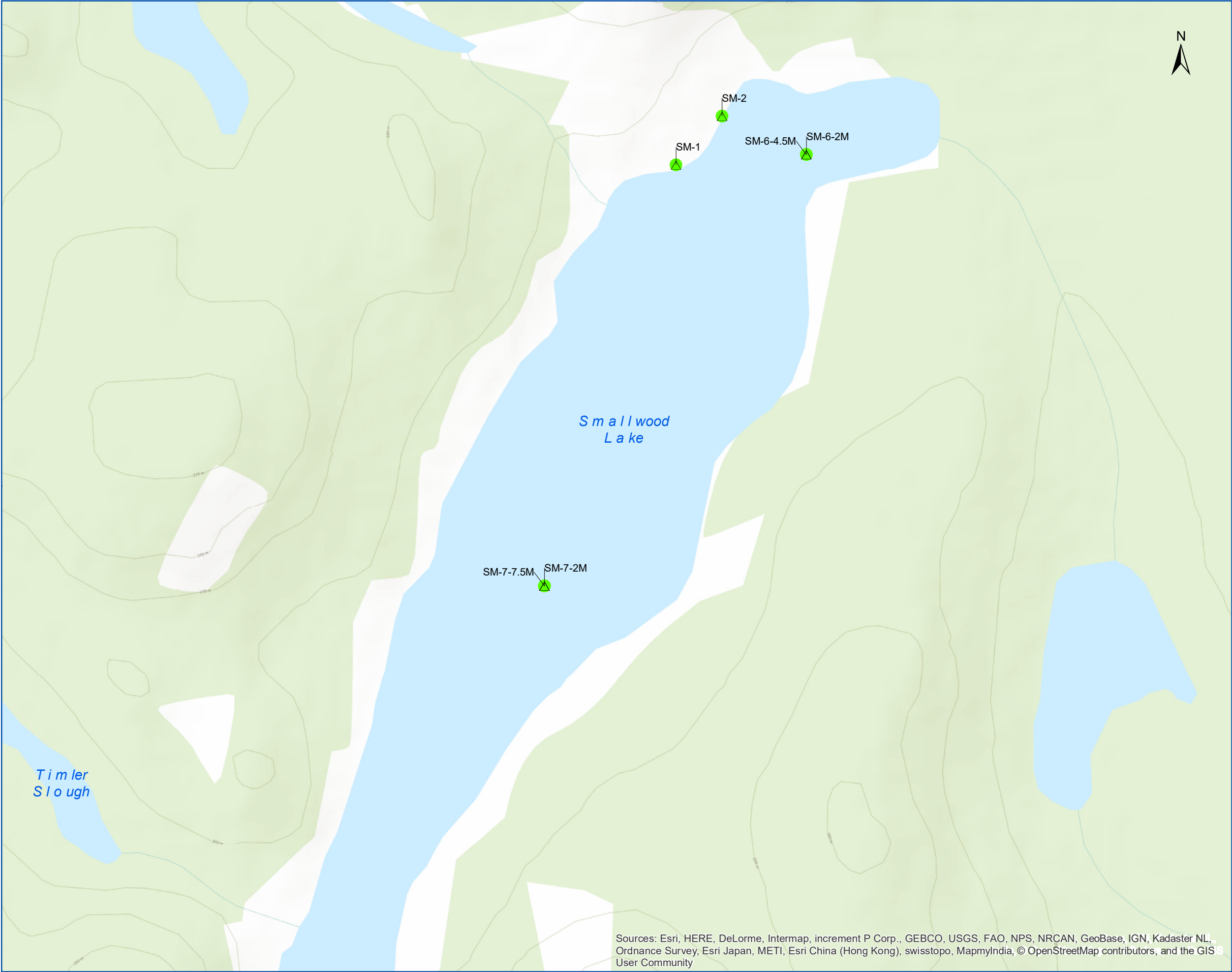
Great Bear Lake Sites
2016 Water Quality Monitoring Report

Silver Bear - Norex/Graham Vein
2016 Surface Water Data

March 29, 2018	Rev 0.2	Drawing No.
Project No.	234.01016.00001	5 g





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

LEGEND

-  SURFACE WATER SAMPLE LOCATION (SLR 2016)
-  CONCENTRATIONS LESS THAN CCME GUIDELINES PROTECTION OF AQUATIC LIFE FRESHWATER



SCALE: 1:4,300
WHEN PLOTTED CORRECTLY AT 11 x 17
NAD 1983 UTM Zone 11N

NOTES

This map is for conceptual purposes only and should not be used for navigational purposes.
Basedata: World Imagery - topographical and aerial imagery layer provided by ArcGIS

INAC - CARD

Great Bear Lake Sites
2016 Water Quality Monitoring Report

Silver Bear - Smallwood
2016 Surface Water Data

March 16, 2018	Rev 0.1	Drawing No.
Project No.	234.01016.00001	5 h



Appendix B

2016 Chemistry Results

Great Bear Lake Sites
2016 Water Quality Monitoring Report
SLR Project No: 234.01016.00001

TABLE B-1: SAWMILL BAY WATER ANALYTICAL RESULTS - NUTRIENTS AND OTHER PARAMETERS (mg/L)

Sample ID	A3-SW08-01	A3-SW08-05-2	SW-B-2	SW07-3	SW16-01-2	SW16-01-6	SW16-02-2	SW16-02-6	
Date	01-Sep-2016	01-Sep-2016	01-Sep-2016	01-Sep-2016	01-Sep-2016	01-Sep-2016	01-Sep-2016	01-Sep-2016	CCME AFW
pH	7.55	7.78	7.89	7.94	7.91	7.91	7.93	7.96	ns
Conductivity (uS/cm)	180	170	160	200	160	160	160	190	ns
Ammonia - Total (N)	0.038	0.034	0.018	0.022	0.028	<0.0067	0.026	0.022	4.424**
Alkalinity - Total (CaCO3)	76	60	59	71	58	57	60	64	ns
Alkalinity - Bicarbonate (CaCO3)	93	73	72	86	71	70	73	79	ns
Alkalinity - Carbonate (CaCO3)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Alkalinity - Hydroxide (CaCO3)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Nitrite Nitrogen	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.06
Nitrate Nitrogen	0.036	0.093	0.11	0.11	0.12	0.11	0.11	0.11	13
Chloride	4.0	4.7	4.5	4.5	4.4	4.5	4.4	4.1	120
Sulphate	12	15	17	30	17	17	17	21	ns
Total Phosphorus	0.017	0.0080	0.0030	< 0.0030	< 0.0030	< 0.0030	0.0030	0.0030	ns
Dissolved Phosphorus	0.0030	0.0030	< 0.0030	< 0.0030	0.0030	0.0030	0.0030	< 0.0030	ns
Dissolved Organic Carbon	6.7	4.8	3.1	2.1	4.9	4.0	3.6	3.7	ns
TDS	88	68	80	92	76	60	84	88	ns
Field Temperature*	10.68	11.03	11.04	10.34	11.02	11.06	11.07	10.83	ns
Field pH*	7.12	8.06	8.17	7.45	8.15	7.46	7.55	7.35	ns

Notes:

mg/L - milligrams per litre

uS/cm - microsiemens per centimeter

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard/guideline listed

* - based on field measurements

** - most conservative guideline presented based on maximum pH and maximum temperature measured in the field

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-2: SAWMILL BAY WATER ANALYTICAL RESULTS - TOTAL METALS (mg/L)

Sample ID	A3-SW08-01	A3-SW08-05-2	SW-B-2	SW07-3	SW16-01-2	SW16-01-6	SW16-02-2	SW16-02-6	CCME AFW
Date	01-Sep-2016	01-Sep-2016	01-Sep-2016	01-Sep-2016	01-Sep-2016	01-Sep-2016	01-Sep-2016	01-Sep-2016	
pH	7.55	7.78	7.89	7.94	7.91	7.91	7.93	7.96	ns
Hardness	86.0	77.9	72.0	96.1	71.1	70.6	71.6	82.6	ns
Aluminum	0.0135	0.0431	0.006	0.0053	0.0073	0.0064	0.0058	0.0059	0.005@pH<6.5 0.1@pH>=6.5
Antimony	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	ns
Arsenic	0.00031	0.00026	0.00019	0.00014	0.00022	0.00012	0.00024	0.00017	0.005
Barium	0.0384	0.024	0.023	0.0243	0.0229	0.0227	0.0228	0.0244	ns
Beryllium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	ns
Bismuth	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Boron	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.5
Cadmium	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.00009 Long term conc
Calcium	19.0	17.8	16.7	23.7	16.4	16.4	16.8	19.4	ns
Total Chromium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Chromium (+6)	---	---	---	---	---	---	---	---	0.001
Chromium (+3)	---	---	---	---	---	---	---	---	0.0089
Cobalt	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	ns
Copper	<0.0005	0.00076	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.002@H>=0<120 0.003@H>=120<180 0.004@H>=180
Iron	2.49	1.09	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	0.3
Lead	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.00075	<0.0002	0.001@H>=0<60 0.002@H>=60<120 0.004@H>=120<180 0.007@H>=180
Lithium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Magnesium	9.35	8.15	7.39	8.92	7.30	7.19	7.18	8.28	ns
Manganese	0.178	0.0464	<0.001	0.0032	<0.001	<0.001	<0.001	<0.001	ns
Mercury	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000014	0.000026
Molybdenum	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.073
Nickel	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.025@H>=0<60 0.065@H>=60<120 0.11@H>=120<180 0.15@H>=180
Potassium	0.833	0.820	0.666	0.739	0.672	0.655	0.676	0.716	ns
Selenium	0.00019	<0.0001	0.00024	0.00027	0.00022	0.00014	0.00017	0.00014	0.001
Silver	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	0.00025
Sodium	3.85	4.38	4.05	3.91	4.17	4.10	4.06	4.06	ns
Strontium	0.107	0.106	0.102	0.171	0.104	0.104	0.0995	0.127	ns
Thallium	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.0008
Tin	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Titanium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Uranium	0.0002	0.00026	0.00032	0.00042	0.00029	0.0003	0.0003	0.00033	0.015
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Zinc	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.03
Zirconium	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	ns

Notes:

mg/L - milligrams per litre

H - Hardness (as CaCO3)

< - less than analytical detection limit

'---' - sample not analyzed for parameter indicated

ns - no standard listed

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-3: SAWMILL BAY WATER ANALYTICAL RESULTS - DISSOLVED METALS (mg/L)

Sample ID	SW-B-2	SW07-3	
Date	01-Sep-2016	01-Sep-2016	CCME AFW
pH	7.89	7.94	ns
Hardness	72.0	96.1	ns
Aluminum	<0.003	0.0042	0.005@pH<6.5 0.1@pH>=6.5
Antimony	<0.0005	<0.0005	ns
Arsenic	0.00019	0.00026	0.005
Barium	0.0236	0.025	ns
Beryllium	<0.0001	<0.0001	ns
Bismuth	<0.001	<0.001	ns
Boron	<0.05	<0.05	1.5
Calcium	17.2	23.6	ns
Cadmium	<0.00001	<0.00001	0.00009 Long term conc
Chromium, Total	<0.001	<0.001	ns
Chromium, Hexavalent	---	---	0.001
Chromium, Trivalent	---	---	0.0089
Cobalt	<0.0005	<0.0005	ns
Copper	0.00027	0.00051	0.002@H>=0<120 0.003@H>=120<180 0.004@H>=180
Iron	<0.005	<0.005	0.3
Lead	<0.0002	<0.0002	0.001@H>=0<60 0.002@H>=60<120 0.004@H>=120<180 0.007@H>=180
Lithium	<0.005	<0.005	ns
Magnesium	7.43	9.26	ns
Manganese	<0.001	0.0036	ns
Mercury	<0.00001	<0.00001	0.000026
Molybdenum	<0.001	<0.001	0.073
Nickel	<0.001	<0.001	0.025@H>=0<60 0.065@H>=60<120 0.11@H>=120<180 0.15@H>=180
Potassium	0.698	0.830	ns
Selenium	<0.0001	0.00029	0.001
Silver	<0.00002	<0.00002	0.00025
Sodium	4.12	4.18	ns
Strontium	0.109	0.171	ns
Thallium	<0.00005	<0.00005	0.0008
Tin	<0.005	<0.005	ns
Titanium	<0.005	<0.005	ns
Uranium	0.0003	0.00041	0.015
Vanadium	<0.005	<0.005	
Zinc	<0.005	0.013	0.03
Zirconium	<0.0005	<0.0005	ns

Notes:

mg/L - milligrams per litre

H - Hardness in mg/L CaCO₃

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard listed

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-4: SAWMILL BAY WATER ANALYTICAL RESULTS - BTEX and F1 - F4 (mg/L)

Sample ID	A3-SW08-01	SW-B-2	SW07-3	SW16-01-2	SW16-01-6	SW16-02-6	
Date	01-Sep-2016	01-Sep-2016	01-Sep-2016	01-Sep-2016	01-Sep-2016	01-Sep-2016	CCME AFW
Benzene	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.37
Toluene	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.002
Ethylbenzene	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.09
Xylenes	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	ns
F1-BTEX (C6-C10)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ns
F1 (C6-C10)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ns
F2 (C10-C16)	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	ns
F3 (C16-C34)	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	ns
F4 (C34-C50)	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	ns

Notes:

mg/L - all samples in milligrams per litre unless otherwise indicated

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

N/A - not applicable

ns - no standard/guideline listed

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-5: SAWMILL BAY WATER ANALYTICAL RESULTS - RADIONUCLIDES (Bq/L)

Sample ID	A3-SW08-01	SW-B-2	SW07-3	SW16-01-6m	HEALTH CANADA GUIDELINE
Date	01-Sep-2016	01-Sep-2016	01-Sep-2016	01-Sep-2016	
Gross Alpha	0.13	<0.10	0.14	<0.10	ns
Gross Beta	<0.10	<0.10	<0.10	<0.10	ns
Lead-210	--	--	--	--	0.2
Radium-226	--	--	--	--	0.5

Notes:

Bq/L - becquerel per litre

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard/guideline listed

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds Health Canada (2014) Guidelines for Canadian Drinking Water Quality

TABLE B-6: SAWMILL BAY BACKGROUND - NUTRIENTS AND OTHER PARAMETERS (mg/L)

Sample ID	BG-SW08-01-2	BG-SW08-03	BG-SW08-04	BG-SW08-05	
Date	01-Sep-2016	01-Sep-2016	01-Sep-2016	01-Sep-2016	CCME AFW
pH	7.93	7.92	8.49	8.12	ns
Conductivity (uS/cm)	160	190	280	380	ns
Ammonia - Total (N)	0.016	0.023	0.041	0.019	4.424**
Alkalinity - Total (CaCO ₃)	57	88	150	200	ns
Alkalinity - Bicarbonate (CaCO ₃)	70	110	180	240	ns
Alkalinity - Carbonate (CaCO ₃)	< 0.50	< 0.50	2.9	< 0.50	ns
Alkalinity - Hydroxide (CaCO ₃)	< 0.50	< 0.50	< 0.50	< 0.50	ns
Nitrite Nitrogen	<0.010	<0.010	<0.010	<0.010	0.06
Nitrate Nitrogen	0.11	0.11	<0.010	0.079	13
Chloride	4.8	4.5	< 1.0	< 1.0	120
Sulphate	17	24	4.7	14	ns
Total Phosphorus	0.0030	0.0030	0.0090	0.0040	ns
Dissolved Phosphorus	< 0.0030	< 0.0030	0.0030	< 0.0030	ns
Dissolved Organic Carbon	4.3	4.5	9.5	4.6	ns
TDS	64	92	140	190	ns
Field Temperature*	11.33	9.27	12.89	9.54	ns
Field pH*	7.69	7.88	8.24	7.9	ns

Notes:

mg/L - milligrams per litre

uS/cm - microsiemens per centimeter

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard/guideline listed

* - based on field measurements

** - most conservative guideline presented based on maximum pH and maximum temperature measured in the field

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-7: SAWMILL BAY BACKGROUND - TOTAL METALS (mg/L)

Sample ID	BG-SW08-01-2	BG-SW08-03	BG-SW08-04	BG-SW08-05	
Date	01-Sep-2016	01-Sep-2016	01-Sep-2016	01-Sep-2016	CCME AFW
pH	7.93	7.92	8.49	8.12	ns
Hardness	70.6	81.0	165	204	ns
Aluminum	0.0059	0.0079	0.0219	0.0059	0.005@pH<6.5 0.1@pH>=6.5
Antimony	<0.0005	<0.0005	<0.0005	<0.0005	ns
Arsenic	0.00018	0.0002	0.00012	0.00039	0.005
Barium	0.0225	0.0245	0.0858	0.106	ns
Beryllium	<0.0001	<0.0001	<0.0001	<0.0001	ns
Bismuth	<0.001	<0.001	<0.001	<0.001	ns
Boron	<0.05	<0.05	0.078	<0.05	1.5
Cadmium	<0.00001	<0.00001	0.000014	<0.00001	0.00009 Long term conc
Calcium	16.4	18.7	25.1	39.1	ns
Total Chromium	<0.001	<0.001	<0.001	<0.001	ns
Chromium (+6)	---	---	---	---	0.001
Chromium (+3)	---	---	---	---	0.0089
Cobalt	<0.0005	<0.0005	<0.0005	<0.0005	ns
Copper	<0.0005	<0.0005	0.00095	0.00107	0.002@H>=0<120 0.003@H>=120<180 0.004@H>=180
Iron	<0.01	<0.01	0.028	<0.01	0.3
Lead	<0.0002	<0.0002	<0.0002	0.0003	0.001@H>=0<60 0.002@H>=60<120 0.004@H>=120<180 0.007@H>=180
Lithium	<0.005	<0.005	<0.005	<0.005	ns
Magnesium	7.18	8.32	24.9	25.9	ns
Manganese	<0.001	0.0016	0.0112	<0.001	ns
Mercury	<0.00001	<0.00001	<0.00001	<0.00001	0.000026
Molybdenum	<0.001	<0.001	<0.001	0.0022	0.073
Nickel	<0.001	<0.001	<0.001	<0.001	0.025@H>=0<60 0.065@H>=60<120 0.11@H>=120<180 0.15@H>=180
Potassium	0.662	0.703	1.83	0.890	ns
Selenium	0.00021	0.0002	<0.0001	0.0007	0.001
Silver	<0.00002	<0.00002	<0.00002	<0.00002	0.00025
Sodium	4.08	4.08	1.14	1.02	ns
Strontium	0.102	0.105	0.0608	0.041	ns
Thallium	<0.00005	<0.00005	<0.00005	<0.00005	0.0008
Tin	<0.005	<0.005	<0.005	<0.005	ns
Titanium	<0.005	<0.005	<0.005	<0.005	ns
Uranium	0.0003	0.00039	0.00025	0.00115	0.015
Vanadium	<0.005	<0.005		<0.005	ns
Zinc	<0.005	<0.005	<0.005	<0.005	0.03
Zirconium	<0.0005	<0.0005	<0.0005	<0.0005	ns

Notes:

mg/L - milligrams per litre

H - Hardness (as CaCO₃)

< - less than analytical detection limit

'---' - sample not analyzed for parameter indicated

ns - no standard listed

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-8: SAWMILL BAY BACKGROUND - DISSOLVED METALS (mg/L)

Sample ID	BG-SW08-03	BG-SW08-04	
Date	01-Sep-2016	01-Sep-2016	CCME AFW
pH	7.92	8.49	ns
Hardness	81.0	165	ns
Aluminum	0.0042	0.0439	0.005@pH<6.5 0.1@pH>=6.5
Antimony	<0.0005	<0.0005	ns
Arsenic	0.00017	<0.0001	0.005
Barium	0.0234	0.124	ns
Beryllium	<0.0001	<0.0001	ns
Bismuth	<0.001	<0.001	ns
Boron	<0.05	0.164	1.5
Calcium	17.9	23.5	ns
Cadmium	<0.00001	0.000014	0.00009 Long term conc
Chromium, Total	<0.001	<0.001	ns
Chromium, Hexavalent	---	---	0.001
Chromium, Trivalent	---	---	0.0089
Cobalt	<0.0005	<0.0005	ns
Copper	0.00026	0.00088	0.002@H>=0<120 0.003@H>=120<180 0.004@H>=180
Iron	<0.005	<0.005	0.3
Lead	<0.0002	<0.0002	0.001@H>=0<60 0.002@H>=60<120 0.004@H>=120<180 0.007@H>=180
Lithium	<0.005	<0.005	ns
Magnesium	7.86	23.4	ns
Manganese	<0.001	0.0028	ns
Mercury	<0.00001	0.000012	0.000026
Molybdenum	<0.001	<0.001	0.073
Nickel	<0.001	<0.001	0.025@H>=0<60 0.065@H>=60<120 0.11@H>=120<180 0.15@H>=180
Potassium	0.683	1.56	ns
Selenium	<0.0001	<0.0001	0.001
Silver	<0.00002	<0.00002	0.00025
Sodium	3.99	1.18	ns
Strontium	0.103	0.0607	ns
Thallium	<0.00005	<0.00005	0.0008
Tin	<0.005	<0.005	ns
Titanium	<0.005	<0.005	ns
Uranium	0.00037	0.00021	0.015
Vanadium	<0.005	<0.005	
Zinc	0.0092	<0.005	0.03
Zirconium	<0.0005	<0.0005	ns

Notes:

mg/L - milligrams per litre

H - Hardness in mg/L CaCO₃

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard listed

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-9: EL BONANZA WATER ANALYTICAL RESULTS - NUTRIENTS AND OTHER PARAMETERS (mg/L)

Sample ID	BON-SW-1	ELB-SW-2	ELB-3-ML-2	ELB-3-ML-10	ELB-4-ML	ELB-5-SL-2	
Date	30-Aug-2016	30-Aug-2016	30-Aug-2016	30-Aug-2016	30-Aug-2016	30-Aug-2016	CCME AFW
pH	7.76	7.28	7.58	7.53	7.57	7.56	ns
Conductivity (uS/cm)	88	62	61	60	61	60	ns
Ammonia - Total (N)	<0.0067	<0.0067	<0.0067	<0.0067	<0.0067	0.01	1.826**
Alkalinity - Total (CaCO3)	44	29	28	26	27	31	ns
Alkalinity - Bicarbonate (CaCO3)	54	35	34	32	33	38	ns
Alkalinity - Carbonate (CaCO3)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Alkalinity - Hydroxide (CaCO3)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Nitrite Nitrogen	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.06
Nitrate Nitrogen	0.032	<0.010	0.099	0.14	0.045	<0.010	13
Chloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.2	120
Sulphate	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ns
Total Phosphorus	0.0090	0.0040	0.0050	0.0040	0.0040	0.0060	ns
Dissolved Phophorus	0.0050	0.0040	0.0040	0.0040	0.0030	0.0030	ns
Dissolved Organic Carbon	5.5	4.6	5.3	3.8	5.4	5.3	ns
TDS	72	40	44	48	56	36	ns
Field pH*	7.51	7.13	7.39	7.11	7.3	6.26	ns
Field Temperature*	14.82	13.14	14.78	14.36	14.3	14.25	ns

Notes:
mg/L - milligrams per litre
uS/cm - microsiemens per centimeter
< - less than analytical detection limit indicated
'---' - sample not analyzed for parameter indicated
ns - no standard/guideline listed
* - based on field measurements
** - most conservative guideline presented based on maximum pH and maximum temperature measured in the field at these location
See laboratory report for detection limits, testing protocols and QA/QC procedures.
Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-9 (cont): EL BONANZA WATER ANALYTICAL RESULTS - NUTRIENTS AND OTHER PARAMETERS (mg/L)

Sample ID	ELB-5-SL-10	ELB-6-SL	ELB-7-SL	ELB-7-SL-2	ELB-8-SL	ELB-9-GBL-2	
Date	30-Aug-2016	30-Aug-2016	30-Aug-2016	30-Aug-2016	30-Aug-2016	30-Aug-2016	CCME AFW
pH	7.16	7.53	7.56	7.59	7.58	7.87	ns
Conductivity (uS/cm)	52	61	61	61	61	160	ns
Ammonia - Total (N)	<0.0067	<0.0067	<0.0067	<0.0067	<0.0067	<0.0067	1.826**
Alkalinity - Total (CaCO3)	26	29	29	32	31	59	ns
Alkalinity - Bicarbonate (CaCO3)	32	36	35	39	37	72	ns
Alkalinity - Carbonate (CaCO3)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Alkalinity - Hydroxide (CaCO3)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Nitrite Nitrogen	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.06
Nitrate Nitrogen	<0.010	0.041	<0.010	<0.010	<0.010	0.14	13
Chloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	4.4	120
Sulphate	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	17	ns
Total Phosphorus	0.0070	0.0070	0.016	0.0030	0.0050	< 0.0030	ns
Dissolved Phophorus	0.0050	0.0040	0.0050	0.0030	0.0030	0.0030	ns
Dissolved Organic Carbon	4.0	5.7	3.6	3.7	4.9	2.9	ns
TDS	20	56	44	56	36	92	ns
Field pH*	6.65	7.35	6.58	6.39	6.46	7.52	ns
Field Temperature*	13.87	13.86	13.6	13.33	13.24	7.98	ns

Notes:
mg/L - milligrams per litre
uS/cm - microsiemens per centimeter
< - less than analytical detection limit indicated
'---' - sample not analyzed for parameter indicated
ns - no standard/guideline listed
* - based on field measurements
** - most conservative guideline presented based on maximum pH and maximum temperature measured in the field at these location
See laboratory report for detection limits, testing protocols and QA/QC procedures.
Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-10: EL BONANZA WATER ANALYTICAL RESULTS - TOTAL METALS (mg/L)

Sample ID	BON-SW-1	ELB-SW-2	ELB-3-ML-2	ELB-3-ML-10	ELB-4-ML	ELB-5-SL-2	
Date	30-Aug-2016	30-Aug-2016	30-Aug-2016	30-Aug-2016	30-Aug-2016	30-Aug-2016	CCME AFW
pH	7.76	7.28	7.58	7.53	7.57	7.56	ns
Hardness	42.6	29.6	29.1	27.9	29.1	29.4	ns
Aluminum	0.0098	0.0103	0.0114	0.0098	0.114	0.0106	0.005@pH<6.5 0.1@pH>=6.5
Antimony	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	ns
Arsenic	0.00014	0.00022	0.00012	0.00017	0.00016	0.00018	0.005
Barium	0.0051	0.0071	0.005	0.0051	0.0051	0.0062	ns
Beryllium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	ns
Bismuth	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Boron	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.5
Cadmium	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.00009 Long term conc
Calcium	10.9	7.92	7.70	7.38	7.78	7.85	ns
Total Chromium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Chromium (+6)	---	---	---	---	---	---	0.001
Chromium (+3)	---	---	---	---	---	---	0.0089
Cobalt	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	ns
Copper	0.00084	0.00102	0.00148	0.0012	0.00125	0.00119	0.002@H>=0<120 0.003@H>=120<180 0.004@H>=180
Iron	<0.01	0.139	<0.01	<0.01	0.016	0.064	0.3
Lead	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.001@H>=0<60 0.002@H>=60<120 0.004@H>=120<180 0.007@H>=180
Lithium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Magnesium	3.72	2.38	2.40	2.31	2.35	2.38	ns
Manganese	<0.001	0.0299	<0.001	<0.001	0.0026	0.0088	ns
Mercury	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000026
Molybdenum	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.073
Nickel	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.025@H>=0<60 0.065@H>=60<120 0.11@H>=120<180 0.15@H>=180
Potassium	0.715	0.353	0.382	0.373	0.364	0.363	ns
Selenium	<0.0001	0.00012	0.00015	0.00016	0.00012	0.00014	0.001
Silver	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	0.00025
Sodium	0.990	0.907	0.870	0.840	0.851	0.908	ns
Strontium	0.0121	0.0123	0.0113	0.0109	0.0127	0.0114	ns
Thallium	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.0008
Tin	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Titanium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Uranium	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	0.00014	0.015
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Zinc	<0.005	<0.005	0.0065	<0.005	0.0058	<0.005	0.03
Zirconium	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	ns

Notes:
mg/L - milligrams per litre
< - less than analytical detection limit indicated
'---' - sample not analyzed for parameter indicated
ns - no standard/guideline listed
See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-10 (cont): EL BONANZA WATER ANALYTICAL RESULTS - TOTAL METALS (mg/L)

Sample ID	ELB-5-SL-10	ELB-6-SL	ELB-7-SL	ELB-7-SL-2	ELB-8-SL	ELB-9-GBL-2	
Date	30-Aug-2016	30-Aug-2016	30-Aug-2016	30-Aug-2016	30-Aug-2016	30-Aug-2016	CCME AFW
pH	7.16	7.53	7.56	7.59	7.58	7.87	ns
Hardness	25.2	28.7	29.2	29.9	29.7	70.0	ns
Aluminum	0.0102	0.0219	0.0119	0.0067	0.0133	0.0062	0.005@pH<6.5 0.1@pH>=6.5
Antimony	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	ns
Arsenic	<0.0001	0.00019	0.00023	0.00022	0.0002	0.00015	0.005
Barium	0.0064	0.0056	0.0064	0.0065	0.0065	0.0224	ns
Beryllium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	ns
Bismuth	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Boron	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.5
Cadmium	<0.00001	0.000011	0.000011	<0.00001	<0.00001	<0.00001	0.00009 Long term conc
Calcium	6.83	7.57	7.86	8.01	7.88	16.2	ns
Total Chromium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Chromium (+6)	---	---	---	< 0.0010	---	---	0.001
Chromium (+3)	---	---	---	---	---	---	0.0089
Cobalt	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	ns
Copper	0.00091	0.00141	0.00171	0.00117	0.00123	<0.0005	0.002@H>=0<120 0.003@H>=120<180 0.004@H>=180
Iron	0.035	0.061	0.068	0.064	0.076	<0.01	0.3
Lead	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.001@H>=0<60 0.002@H>=60<120 0.004@H>=120<180 0.007@H>=180
Lithium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Magnesium	1.96	2.37	2.34	2.41	2.43	7.15	ns
Manganese	0.0122	0.0087	0.0092	0.0078	0.0106	<0.001	ns
Mercury	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000026
Molybdenum	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.073
Nickel	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.025@H>=0<60 0.065@H>=60<120 0.11@H>=120<180 0.15@H>=180
Potassium	0.355	0.363	0.369	0.396	0.362	0.662	ns
Selenium	<0.0001	0.00011	0.00014	<0.0001	<0.0001	<0.0001	0.001
Silver	<0.00002	<0.00002	<0.00002	<0.00002	0.000036	<0.00002	0.00025
Sodium	0.739	0.851	0.950	0.897	0.920	4.07	ns
Strontium	0.0112	0.0115	0.0118	0.0123	0.0121	0.0984	ns
Thallium	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.0008
Tin	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Titanium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Uranium	<0.0001	<0.0001	0.00015	0.00014	0.00026	0.0003	0.015
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Zinc	<0.005	<0.005	0.0121	<0.005	<0.005	<0.005	0.03
Zirconium	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	ns

Notes:
mg/L - milligrams per litre
< - less than analytical detection limit indicated
'---' - sample not analyzed for parameter indicated
ns - no standard/guideline listed
See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-11: EL BONANZA WATER ANALYTICAL RESULTS - DISSOLVED METALS (mg/L)

Sample ID	ELB-7-SL	ELB-7-SL-2	
Date	30-Aug-2016	30-Aug-2016	CCME AFW
pH	7.56	7.59	ns
Hardness	29.2	29.9	ns
Aluminum	0.0056	0.0051	0.005@pH<6.5 0.1@pH>=6.5
Antimony	<0.0005	<0.0005	ns
Arsenic	0.0002	0.00018	0.005
Barium	0.0068	0.0069	ns
Beryllium	<0.0001	<0.0001	ns
Bismuth	<0.001	<0.001	ns
Boron	<0.05	<0.05	1.5
Calcium	8.07	8.01	ns
Cadmium	0.000012	<0.00001	0.00009 Long term conc
Chromium, Total	<0.001	<0.001	ns
Chromium, Hexavalent	---	---	0.001
Chromium, Trivalent	---	---	0.0089
Cobalt	<0.0005	<0.0005	ns
Copper	0.00159	0.00144	0.002@H>=0<120 0.003@H>=120<180 0.004@H>=180
Iron	0.0325	0.0314	0.3
Lead	<0.0002	<0.0002	0.001@H>=0<60 0.002@H>=60<120 0.004@H>=120<180 0.007@H>=180
Lithium	<0.005	<0.005	ns
Magnesium	2.22	2.19	ns
Manganese	0.0011	0.0013	ns
Mercury	<0.00001	0.000018	0.000026
Molybdenum	<0.001	<0.001	0.073
Nickel	<0.001	<0.001	0.025@H>=0<60 0.065@H>=60<120 0.11@H>=120<180 0.15@H>=180
Potassium	0.427	0.418	ns
Selenium	<0.0001	<0.0001	0.001
Silver	<0.00002	<0.00002	0.00025
Sodium	0.918	0.875	ns
Strontium	0.0129	0.0125	ns
Thallium	<0.00005	<0.00005	0.0008
Tin	<0.005	<0.005	ns
Titanium	<0.005	<0.005	ns
Uranium	0.00012	0.00012	0.015
Vanadium	<0.005	<0.005	ns
Zinc	0.0073	<0.005	0.03
Zirconium	<0.0005	<0.0005	ns

Notes:
mg/L - milligrams per litre
H - Hardness in mg/L CaCO3
< - less than analytical detection limit indicated
'---' - sample not analyzed for parameter indicated
ns - no standard listed

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-12: EL BONANZA WATER ANALYTICAL RESULTS - BTEX AND F1 - F4 (mg/L)

Sample ID	BON-SW-1	ELB-4-ML	ELB-8-SL	ELB-9-GBL-2	
Date	30-Aug-2016	30-Aug-2016	30-Aug-2016	30-Aug-2016	CCME AFW
Benzene	<0.0004	<0.0004	<0.0004	<0.0004	0.37
Toluene	<0.0004	<0.0004	<0.0004	<0.0004	0.002
Ethylbenzene	<0.0004	<0.0004	<0.0004	<0.0004	0.09
Xylenes	<0.0008	<0.0008	<0.0008	<0.0008	ns
F1 (C6-C10)	<0.1	<0.1	<0.1	<0.1	ns
F2 (C10-C16)	< 0.10	< 0.10	< 0.10	< 0.10	ns
F3 (C16-C34)	< 0.20	< 0.20	< 0.20	< 0.20	ns
F4 (C34-C50)	< 0.20	< 0.20	< 0.20	< 0.20	ns

Notes:

mg/L - all samples in milligrams per litre unless otherwise indicated

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

N/A - not applicable

ns - no standard/guideline listed

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-13: EL BONANZA BACKGROUND - NUTRIENTS AND OTHER PARAMETERS (mg/L)

Sample ID	ELB-1-GBL	
Date	30-Aug-2016	CCME AFW
pH	7.88	ns
Conductivity (uS/cm)	160	ns
Ammonia - Total (N)	<0.0067	0.855
Alkalinity - Total (CaCO ₃)	57	ns
Alkalinity - Bicarbonate (CaCO ₃)	69	ns
Alkalinity - Carbonate (CaCO ₃)	< 0.50	ns
Alkalinity - Hydroxide (CaCO ₃)	< 0.50	ns
Nitrite Nitrogen	<0.010	0.06
Nitrate Nitrogen	0.15	13
Chloride	4.6	120
Sulphate	17	ns
Total Phosphorus	0.0040	ns
Dissolved Phosphorus	0.0030	ns
Dissolved Organic Carbon	3.0	ns
TDS	92	ns
Field pH*	7.61	ns
Field Temperature*	8.47	ns

Notes:

mg/L - milligrams per litre

uS/cm - microsiemens per centimeter

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard/guideline listed

* - based on field measurements

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-14: EL BONANZA BACKGROUND - TOTAL METALS (mg/L)

Sample ID	ELB-1-GBL	
Date	30-Aug-2016	CCME AFW
pH	7.88	ns
Hardness	70.0	ns
Aluminum	0.0256	0.005@pH<6.5 0.1@pH>=6.5
Antimony	<0.0005	ns
Arsenic	0.00021	0.005
Barium	0.0224	ns
Beryllium	<0.0001	ns
Bismuth	<0.001	ns
Boron	<0.05	1.5
Cadmium	<0.00001	0.00009 Long term conc
Calcium	16.2	ns
Total Chromium	<0.001	ns
Chromium (+6)	---	0.001
Chromium (+3)	---	0.0089
Cobalt	<0.0005	ns
Copper	<0.0005	0.002@H>=0<120 0.003@H>=120<180 0.004@H>=180
Iron	0.026	0.3
Lead	<0.0002	0.001@H>=0<60 0.002@H>=60<120 0.004@H>=120<180 0.007@H>=180
Lithium	<0.005	ns
Magnesium	7.20	ns
Manganese	0.0029	ns
Mercury	<0.00001	0.000026
Molybdenum	<0.001	0.073
Nickel	<0.001	0.025@H>=0<60 0.065@H>=60<120 0.11@H>=120<180 0.15@H>=180
Potassium	0.675	ns
Selenium	0.00011	0.001
Silver	<0.00002	0.00025
Sodium	4.08	ns
Strontium	0.097	ns
Thallium	<0.00005	0.0008
Tin	<0.005	ns
Titanium	<0.005	ns
Uranium	0.00035	0.015
Vanadium	<0.005	ns
Zinc	<0.005	0.03
Zirconium	<0.0005	ns

Notes:
mg/L - milligrams per litre
< - less than analytical detection limit indicated
'---' - sample not analyzed for parameter indicated
ns - no standard/guideline listed
See laboratory report for detection limits, testing protocols and QA/QC procedures.
Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-15: EL BONANZA BACKGROUND - BTEX AND F1 - F4 (mg/L)

Sample ID	ELB-1-GBL	
Date	30-Aug-2016	CCME AFW
Benzene	<0.0004	0.37
Toluene	<0.0004	0.002
Ethylbenzene	<0.0004	0.09
Xylenes	<0.0008	ns
F1 (C6-C10)	<0.1	ns
F2 (C10-C16)	< 0.10	ns
F3 (C16-C34)	< 0.20	ns
F4 (C34-C50)	< 0.20	ns

Notes:

mg/L - all samples in milligrams per litre unless otherwise indicated

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

N/A - not applicable

ns - no standard/guideline listed

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-16: CONTACT LAKE WATER ANALYTICAL RESULTS - NUTRIENTS AND OTHER PARAMETERS (mg/L)

Sample ID	CL-2	CL-2B	CL-3	CL-5	CL-7-EA-2M	CL-8-2M	
Date	31-Aug-2016	31-Aug-2016	31-Aug-2016	31-Aug-2016	31-Aug-2016	31-Aug-2016	CCME AFW
pH	7.94	7.71	7.79	7.94	7.87	7.46	ns
Conductivity (uS/cm)	220	200	210	200	160	45	ns
Ammonia - Total (N)	0.019	0.024	0.028	0.038	0.016	0.019	0.588**
Alkalinity - Total (CaCO ₃)	99	100	100	100	54	21	ns
Alkalinity - Bicarbonate (CaCO ₃)	120	120	130	120	66	25	ns
Alkalinity - Carbonate (CaCO ₃)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Alkalinity - Hydroxide (CaCO ₃)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Nitrite Nitrogen	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.06
Nitrate Nitrogen	0.048	0.011	< 0.010	0.018	0.083	0.017	13
Chloride	< 1.0	< 1.0	< 1.0	< 1.0	4.8	< 1.0	120
Sulphate	17	6.4	6.8	6.3	17	< 1.0	ns
Total Phosphorus	0.0090	0.0040	0.0050	0.0030	0.0030	< 0.0030	ns
Dissolved Phosphorus	0.0070	0.0060	0.0040	0.0030	< 0.0030	< 0.0030	ns
Dissolved Organic Carbon	7.8	9.6	8.4	8.2	5.2	5.0	ns
TDS	150	130	140	120	84	28	ns
Field pH*	7.42	6.96	7.01	7.18	7.61	7.44	ns
Field Temperature*	8.74	11.73	12.99	11.13	13.76	14.71	ns

Notes:

mg/L - milligrams per litre

uS/cm - microsiemens per centimeter

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard/guideline listed

* - based on field measurements

** - most conservative guideline presented based on maximum pH and maximum temperature measured in the field at these location

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-16 (cont): CONTACT LAKE WATER ANALYTICAL RESULTS - NUTRIENTS AND OTHER PARAMETERS (mg/L)

Sample ID	CL-9	CL-15	CL-24	CL-26-2M	CL-27-EA	
Date	31-Aug-2016	31-Aug-2016	31-Aug-2016	31-Aug-2016	31-Aug-2016	CCME AFW
pH	7.46	7.81	7.44	7.50	7.95	ns
Conductivity (uS/cm)	45	290	45	45	160	ns
Ammonia - Total (N)	0.021	0.02	0.03	0.02	0.015	0.410**
Alkalinity - Total (CaCO ₃)	18	150	22	22	57	ns
Alkalinity - Bicarbonate (CaCO ₃)	22	180	26	26	69	ns
Alkalinity - Carbonate (CaCO ₃)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Alkalinity - Hydroxide (CaCO ₃)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Nitrite Nitrogen	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.06
Nitrate Nitrogen	0.020	< 0.010	0.016	0.016	0.078	13
Chloride	< 1.0	< 1.0	< 1.0	< 1.0	4.9	120
Sulphate	< 1.0	10	< 1.0	< 1.0	17	ns
Total Phosphorus	< 0.0030	0.010	0.0030	< 0.0030	0.0030	ns
Dissolved Phosphorus	< 0.0030	0.0080	< 0.0030	0.0030	< 0.0030	ns
Dissolved Organic Carbon	4.8	7.0	4.1	4.3	2.7	ns
TDS	40	180	28	32	88	ns
Field pH*	7.56	7.01	7.42	7.47	7.75	ns
Field Temperature*	15.21	10.18	14.67	14.58	13.99	ns

Notes:

mg/L - milligrams per litre

uS/cm - microsiemens per centimeter

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard/guideline listed

* - based on field measurements

** - most conservative guideline presented based on maximum pH and maximum temperature measured in the field at these location

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-17: CONTACT LAKE WATER ANALYTICAL RESULTS - TOTAL METALS (mg/L)

Sample ID	CL-2	CL-2B	CL-3	CL-5	CL-7-EA-2M	CL-8-2M	
Date	31-Aug-2016	31-Aug-2016	31-Aug-2016	31-Aug-2016	31-Aug-2016	31-Aug-2016	CCME AFW
pH	7.94	7.71	7.79	7.94	7.87	7.46	ns
Hardness	103	108	102	97.2	67.5	20.3	ns
Aluminum	0.029	0.0601	0.0107	0.0426	0.0134	0.0075	0.005@pH<6.5 0.1@pH>=6.5
Antimony	0.00243	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	ns
Arsenic	0.0811	0.0124	0.0105	0.0084	0.00019	<0.0001	0.005
Barium	0.0607	0.0208	0.0234	0.0154	0.0217	0.0035	ns
Beryllium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	ns
Bismuth	0.0021	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Boron	0.054	<0.05	<0.05	<0.05	<0.05	<0.05	1.5
Cadmium	0.000011	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.00009 Long term conc
Calcium	28.2	27.4	25.4	25.2	16.0	4.98	ns
Total Chromium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Chromium (+6)	---	---	---	---	---	---	0.001
Chromium (+3)	---	---	---	---	---	---	0.0089
Cobalt	0.00249	0.00078	<0.0005	<0.0005	<0.0005	<0.0005	ns
Copper	0.131	0.00846	0.00869	0.00765	<0.0005	0.00069	0.002@H>=0<120 0.003@H>=120<180 0.004@H>=180
Iron	0.274	0.199	0.046	0.076	0.012	<0.01	0.3
Lead	0.00101	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.001@H>=0<60 0.002@H>=60<120 0.004@H>=120<180 0.007@H>=180
Lithium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Magnesium	8.00	9.55	9.34	8.31	6.68	1.91	ns
Manganese	0.0293	0.195	0.0408	0.0269	0.0013	0.0011	ns
Mercury	0.000276	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000026
Molybdenum	0.0029	<0.001	<0.001	<0.001	<0.001	<0.001	0.073
Nickel	0.0115	0.0015	0.0013	<0.001	<0.001	<0.001	0.025@H>=0<60 0.065@H>=60<120 0.11@H>=120<180 0.15@H>=180
Potassium	2.10	1.11	0.996	0.972	0.693	0.442	ns
Selenium	0.00014	0.00011	<0.0001	0.00012	<0.0001	<0.0001	0.001
Silver	0.0019	0.000165	0.000102	0.000087	<0.00002	<0.00002	0.00025
Sodium	4.34	4.10	4.10	3.74	3.71	0.829	ns
Strontium	0.113	0.0603	0.0611	0.0547	0.0999	0.0097	ns
Thallium	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.0008
Tin	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Titanium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Uranium	0.156	0.0328	0.0358	0.028	0.00036	0.00019	0.015
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Zinc	0.0063	<0.005	<0.005	<0.005	<0.005	<0.005	0.03
Zirconium	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	ns

Notes:

mg/L - milligrams per litre

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard/guideline listed

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-17 (cont): CONTACT LAKE WATER ANALYTICAL RESULTS - TOTAL METALS (mg/L)

Sample ID	CL-9	CL-15	CL-24	CL-26-2M	CL-27-EA	
Date	31-Aug-2016	31-Aug-2016	31-Aug-2016	31-Aug-2016	31-Aug-2016	CCME AFW
pH	7.46	7.81	7.44	7.50	7.95	ns
Hardness	20.5	150	20.5	20.5	68.2	ns
Aluminum	0.0093	0.0133	0.0106	0.0116	0.0172	0.005@pH<6.5 0.1@pH>=6.5
Antimony	<0.0005	0.00113	<0.0005	<0.0005	<0.0005	ns
Arsenic	0.00012	0.0277	0.0002	0.00029	0.00032	0.005
Barium	0.0036	0.0187	0.0035	0.0037	0.0214	ns
Beryllium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	ns
Bismuth	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Boron	<0.05	0.059	<0.05	<0.05	<0.05	1.5
Cadmium	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.00009 Long term conc
Calcium	5.01	40.0	5.01	4.85	16.1	ns
Total Chromium	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Chromium (+6)	---	---	---	---	---	0.001
Chromium (+3)	---	---	---	---	---	0.0089
Cobalt	<0.0005	0.00071	<0.0005	<0.0005	<0.0005	ns
Copper	0.00069	0.0393	0.00072	0.0008	0.00058	0.002@H>=0<120 0.003@H>=120<180 0.004@H>=180
Iron	<0.01	0.177	<0.01	<0.01	0.02	0.3
Lead	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.001@H>=0<60 0.002@H>=60<120 0.004@H>=120<180 0.007@H>=180
Lithium	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Magnesium	1.93	12.2	1.94	2.04	6.78	ns
Manganese	0.0014	0.0549	0.0011	0.0054	0.0029	ns
Mercury	<0.00001	0.000011	<0.00001	<0.00001	<0.00001	0.000026
Molybdenum	<0.001	0.0011	<0.001	<0.001	<0.001	0.073
Nickel	<0.001	0.0019	<0.001	<0.001	<0.001	0.025@H>=0<60 0.065@H>=60<120 0.11@H>=120<180 0.15@H>=180
Potassium	0.451	2.03	0.483	0.420	0.705	ns
Selenium	<0.0001	0.00015	<0.0001	<0.0001	<0.0001	0.001
Silver	0.000029	0.000436	<0.00002	0.000206	<0.00002	0.00025
Sodium	0.832	5.58	0.842	0.867	3.79	ns
Strontium	0.0098	0.106	0.0103	0.0101	0.094	ns
Thallium	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.0008
Tin	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Titanium	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Uranium	0.0002	0.127	0.00018	0.00116	0.00032	0.015
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Zinc	<0.005	<0.005	<0.005	<0.005	<0.005	0.03
Zirconium	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	ns

Notes:

mg/L - milligrams per litre

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard/guideline listed

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-18: CONTACT LAKE WATER ANALYTICAL RESULTS - DISSOLVED METALS (mg/L)

Sample ID	CL-3	CL-5	CL-7-EA-2M	CL-27-EA	
Date	31-Aug-2016	31-Aug-2016	31-Aug-2016	31-Aug-2016	CCME AFW
pH	7.79	7.94	7.87	7.95	ns
Hardness	102	97.2	67.5	68.2	ns
					0.005@pH<6.5 0.1@pH>=6.5
Aluminum	0.0047	0.0064	<0.003	0.0036	ns
Antimony	<0.0005	<0.0005	<0.0005	<0.0005	ns
Arsenic	0.0101	0.0081	0.00024	0.00024	0.005
Barium	0.0233	0.015	0.0219	0.0218	ns
Beryllium	<0.0001	<0.0001	<0.0001	<0.0001	ns
Bismuth	<0.001	<0.001	<0.001	<0.001	ns
Boron	<0.05	<0.05	<0.05	<0.05	1.5
Calcium	25.2	24.2	16.2	16.1	ns
					0.00009 Long term conc
Cadmium	<0.00001	<0.00001	<0.00001	<0.00001	ns
Chromium, Total	<0.001	<0.001	<0.001	<0.001	0.001
Chromium, Hexavalent	---	---	---	---	0.0089
Chromium, Trivalent	---	---	---	---	ns
Cobalt	<0.0005	<0.0005	<0.0005	<0.0005	0.002@H>=0<120 0.003@H>=120<180 0.004@H>=180
Copper	0.00655	0.00695	0.00054	0.00077	0.3
Iron	0.0243	0.0071	<0.005	<0.005	0.001@H>=0<60 0.002@H>=60<120 0.004@H>=120<180 0.007@H>=180
Lead	<0.0002	<0.0002	<0.0002	<0.0002	ns
Lithium	<0.005	<0.005	<0.005	<0.005	ns
Magnesium	9.15	8.99	6.98	6.91	ns
Manganese	0.0294	0.0017	<0.001	0.0013	ns
Mercury	<0.00001	<0.00001	<0.00001	0.000027	0.000026
Molybdenum	<0.001	<0.001	<0.001	<0.001	0.073
					0.025@H>=0<60 0.065@H>=60<120 0.11@H>=120<180 0.15@H>=180
Nickel	0.001	<0.001	<0.001	<0.001	ns
Potassium	1.06	0.880	0.721	0.730	0.001
Selenium	<0.0001	<0.0001	<0.0001	<0.0001	0.00025
Silver	0.00002	<0.00002	<0.00002	<0.00002	ns
Sodium	4.07	4.00	4.03	4.01	ns
Strontium	0.0659	0.0587	0.101	0.0991	ns
Thallium	<0.00005	<0.00005	<0.00005	<0.00005	0.0008
Tin	<0.005	<0.005	<0.005	<0.005	ns
Titanium	<0.005	<0.005	<0.005	<0.005	ns
Uranium	0.0338	0.0301	0.00037	0.00031	0.015
Vanadium	<0.005	<0.005	<0.005	<0.005	ns
Zinc	<0.005	<0.005	<0.005	<0.005	0.03
Zirconium	<0.0005	<0.0005	<0.0005	<0.0005	ns

Notes:

mg/L - milligrams per litre

H - Hardness in mg/L CaCO₃

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard listed

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-19: CONTACT LAKE WATER ANALYTICAL RESULTS - PETROLEUM HYDROCARBON PARAMETERS (mg/L)

Sample ID	CL-2	CL-7-EA-2M	CL-15	CL-24	
Date	31-Aug-2016	31-Aug-2016	31-Aug-2016	31-Aug-2016	CCME AFW
Benzene	<0.0004	<0.0004	<0.0004	<0.0004	0.37
Toluene	<0.0004	<0.0004	<0.0004	<0.0004	0.002
Ethylbenzene	<0.0004	<0.0004	<0.0004	<0.0004	0.09
Xylenes	<0.0008	<0.0008	<0.0008	<0.0008	ns
F1 (C6-C10)	<0.1	<0.1	<0.1	<0.1	ns
F2 (C10-C16)	< 0.10	< 0.10	< 0.10	< 0.10	ns
F3 (C16-C34)	< 0.20	< 0.20	< 0.20	< 0.20	ns
F4 (C34-C50)	< 0.20	< 0.20	< 0.20	< 0.20	ns

Notes:

mg/L - all samples in milligrams per litre unless otherwise indicated

< - less than analytical detection limit indicated

'----' - sample not analyzed for parameter indicated

N/A - not applicable

ns - no standard/guideline listed

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-20: CONTACT LAKE WATER ANALYTICAL RESULTS - RADIONUCLIDES (Bq/L)

Sample ID	CL-2	CL-2B	CL-3	CL-5	CL-7-EA - 2M	CL-8-2M	CL-15	CL-26-2M	HEALTH CANADA
Date	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16	31-Aug-16	GUIDELINE
Gross Alpha	4.30	1.50	0.82	0.90	<0.10	<0.10	2.50	<0.10	ns
Gross Beta	1.73	0.53	0.32	0.22	<0.10	<0.10	0.91	<0.10	ns
Lead-210	0.16	--	<0.10	<0.10	--	--	<0.10	--	0.2
Radium-226	0.380	--	0.133	<0.010	--	--	0.056	--	0.5

Notes:

Bq/L - becquerel per litre

< - less than analytical detection limit indicated

'--' - sample not analyzed for parameter indicated

ns - no standard/guideline listed

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds Health Canada (2014) Guidelines for Canadian Drinking Water Quality

TABLE B-21: CONTACT LAKE WATER ANALYTICAL RESULTS - NUTRIENTS AND OTHER PARAMETERS (mg/L)

BACKGROUND LOCATIONS				
Sample ID	CL-14	CL-16-EA-2M	CL-16-EA-10M	
Date	31-Aug-2016	31-Aug-2016	31-Aug-2016	CCME AFW
pH	7.49	7.88	7.90	ns
Conductivity (uS/cm)	49	160	160	ns
Ammonia - Total (N)	0.033	0.028	0.018	0.588**
Alkalinity - Total (CaCO ₃)	23	57	56	ns
Alkalinity - Bicarbonate (CaCO ₃)	28	69	69	ns
Alkalinity - Carbonate (CaCO ₃)	< 0.50	< 0.50	< 0.50	ns
Alkalinity - Hydroxide (CaCO ₃)	< 0.50	< 0.50	< 0.50	ns
Nitrite Nitrogen	< 0.010	< 0.010	< 0.010	0.06
Nitrate Nitrogen	< 0.010	0.086	0.11	13
Chloride	< 1.0	4.9	4.9	120
Sulphate	< 1.0	17	17	ns
Total Phosphorus	0.0040	0.0030	< 0.0030	ns
Dissolved Phosphorus	0.0030	0.0030	< 0.0030	ns
Dissolved Organic Carbon	6.8	5.0	4.2	ns
TDS	28	84	64	ns
Field pH*	7.42	7.74	7.15	ns
Field Temperature*	15.02	13.54	10.94	ns

Notes:

mg/L - milligrams per litre

uS/cm - microsiemens per centimeter

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard/guideline listed

* - based on field measurements

** - most conservative guideline presented based on maximum pH and maximum temperature measured in the field at these location

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-22: CONTACT LAKE WATER ANALYTICAL RESULTS -TOTAL METALS (mg/L)

BACKGROUND LOCATIONS				
Sample ID	CL-14	CL-16-EA-2M	CL-16-EA-10M	
Date	31-Aug-2016	31-Aug-2016	31-Aug-2016	CCME AFW
pH	7.49	7.88	7.90	ns
Hardness	22.0	67.7	68.4	ns
Aluminum	0.0108	0.0115	0.0126	0.005@pH<6.5 0.1@pH>=6.5
Antimony	<0.0005	<0.0005	<0.0005	ns
Arsenic	0.0002	0.00016	0.00018	0.005
Barium	0.0037	0.0214	0.0217	ns
Beryllium	<0.0001	<0.0001	<0.0001	ns
Bismuth	<0.001	<0.001	<0.001	ns
Boron	<0.05	<0.05	<0.05	1.5
Cadmium	<0.00001	<0.00001	<0.00001	0.00009 Long term conc
Calcium	5.40	16.1	16.3	ns
Total Chromium	<0.001	<0.001	<0.001	ns
Chromium (+6)	---	---	---	0.001
Chromium (+3)	---	---	---	0.0089
Cobalt	<0.0005	<0.0005	<0.0005	ns
Copper	0.00082	<0.0005	<0.0005	0.002@H>=0<120 0.003@H>=120<180 0.004@H>=180
Iron	<0.01	<0.01	0.012	0.3
Lead	<0.0002	<0.0002	<0.0002	0.001@H>=0<60 0.002@H>=60<120 0.004@H>=120<180 0.007@H>=180
Lithium	<0.005	<0.005	<0.005	ns
Magnesium	2.06	6.65	6.75	ns
Manganese	0.003	<0.001	<0.001	ns
Mercury	<0.00001	<0.00001	<0.00001	0.000026
Molybdenum	<0.001	<0.001	<0.001	0.073
Nickel	<0.001	<0.001	<0.001	0.025@H>=0<60 0.065@H>=60<120 0.11@H>=120<180 0.15@H>=180
Potassium	0.498	0.697	0.705	ns
Selenium	<0.0001	<0.0001	<0.0001	0.001
Silver	<0.00002	<0.00002	<0.00002	0.00025
Sodium	0.847	3.71	3.73	ns
Strontium	0.0112	0.0963	0.0966	ns
Thallium	<0.00005	<0.00005	<0.00005	0.0008
Tin	<0.005	<0.005	<0.005	ns
Titanium	<0.005	<0.005	<0.005	ns
Uranium	0.00033	0.00032	0.00031	0.015
Vanadium	<0.005	<0.005	<0.005	ns
Zinc	<0.005	<0.005	<0.005	0.03
Zirconium	<0.0005	<0.0005	<0.0005	ns

Notes:

mg/L - milligrams per litre

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard/guideline listed

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-23: CONTACT LAKE WATER ANALYTICAL RESULTS - DISSOLVED METALS (mg/L)

BACKGROUND LOCATIONS			
Sample ID	CL-16-EA-2M	CL-16-EA-10M	
Date	31-Aug-2016	31-Aug-2016	CCME AFW
pH	7.88	7.90	ns
Hardness	67.7	68.4	ns
Aluminum	<0.003	0.0096	0.005@pH<6.5 0.1@pH>=6.5
Antimony	<0.0005	<0.0005	ns
Arsenic	0.00018	0.00022	0.005
Barium	0.0217	0.0217	ns
Beryllium	<0.0001	<0.0001	ns
Bismuth	<0.001	<0.001	ns
Boron	<0.05	<0.05	1.5
Calcium	15.9	17.1	ns
Cadmium	<0.00001	<0.00001	0.00009 Long term conc
Chromium, Total	<0.001	<0.001	ns
Chromium, Hexavalent	---	---	0.001
Chromium, Trivalent	---	---	0.0089
Cobalt	<0.0005	<0.0005	ns
Copper	0.00046	0.00043	0.002@H>=0<120 0.003@H>=120<180 0.004@H>=180
Iron	<0.005	0.0108	0.3
Lead	<0.0002	<0.0002	0.001@H>=0<60 0.002@H>=60<120 0.004@H>=120<180 0.007@H>=180
Lithium	<0.005	<0.005	ns
Magnesium	7.05	7.70	ns
Manganese	<0.001	<0.001	ns
Mercury	<0.00001	<0.00001	0.000026
Molybdenum	<0.001	<0.001	0.073
Nickel	<0.001	<0.001	0.025@H>=0<60 0.065@H>=60<120 0.11@H>=120<180 0.15@H>=180
Potassium	0.734	0.817	ns
Selenium	<0.0001	<0.0001	0.001
Silver	<0.00002	<0.00002	0.00025
Sodium	4.07	4.51	ns
Strontium	0.102	0.1	ns
Thallium	<0.00005	<0.00005	0.0008
Tin	<0.005	<0.005	ns
Titanium	<0.005	<0.005	ns
Uranium	0.00033	0.00032	0.015
Vanadium	<0.005	<0.005	ns
Zinc	<0.005	<0.005	0.03
Zirconium	<0.0005	<0.0005	ns

Notes:

mg/L - milligrams per litre

H - Hardness in mg/L CaCO₃

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard listed

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-24: CONTACT LAKE WATER ANALYTICAL RESULTS - RADIONUCLIDES (Bq/L)

BACKGROUND LOCATIONS				
Sample ID	CL-14	CL-16-EA-2M	CL-16-EA-10M	HEALTH CANADA
Date	31-Aug-16	31-Aug-16	31-Aug-16	GUIDELINE
Gross Alpha	<0.10	0.13	<0.10	ns
Gross Beta	<0.10	<0.10	<0.10	ns
Lead-210	--	--	--	0.2
Radium-226	--	--	--	0.5

Notes:

Bq/L - becquerel per litre

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard/guideline listed

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds Health Canada (2014) Guidelines for Canadian Drinking Water Quality

TABLE B-25: TERRA WATER ANALYTICAL RESULTS - NUTRIENTS AND OTHER PARAMETERS (mg/L)

Sample ID Date	T1 03-Sep-2016	T2 03-Sep-2016	T3 03-Sep-2016	T4 03-Sep-2016	T5 03-Sep-2016	T6 03-Sep-2016	T7 02-Sep-2016	CCME AFW
pH	7.79	7.54	7.93	7.79	7.86	7.50	7.90	ns
Conductivity (uS/cm)	140	89	210	150	210	240	210	ns
Ammonia - Total (N)	0.017	0.044	0.023	0.022	0.024	0.038	0.023	0.588**
Alkalinity - Total (CaCO ₃)	59	35	64	57	65	78	65	ns
Alkalinity - Bicarbonate (CaCO ₃)	72	43	79	69	79	95	80	ns
Alkalinity - Carbonate (CaCO ₃)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Alkalinity - Hydroxide (CaCO ₃)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Nitrite Nitrogen	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.06
Nitrate Nitrogen	<0.010	<0.010	<0.010	0.015	<0.010	0.059	<0.010	13
Chloride	2.0	< 1.0	13	2.5	13	14	14	120
Sulphate	14	3.7	19	15	19	19	16	ns
Dissolved Phosphorus	0.0030	0.0030	< 0.0030	< 0.0030	< 0.0030	0.0070	0.0040	ns
Total Phosphorus	0.0060	0.0060	0.0040	0.0030	0.0040	0.0080	0.0040	ns
Dissolved Organic Carbon	6.9	20	13	7.0	13	12	11	ns
TDS	100	100	130	56	150	120	140	ns
Field Temperature*	9.1	8.44	12.2	13.88	---	13	14.63	ns
Field pH*	7.51	7.28	7.6	7.53	---	7.47	7.9	ns

Notes:

mg/L - milligrams per litre

uS/cm - microsiemens per centimeter

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard/guideline listed

* - based on field measurements

** - most conservative guideline presented based on maximum pH and maximum temperature measured in the field at these location

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-25 (cont): TERRA WATER ANALYTICAL RESULTS - NUTRIENTS AND OTHER PARAMETERS (mg/L)

Sample ID	T8A	T8B	T8C	T9	T10	T16-2M	T16-10M	
Date	02-Sep-2016	02-Sep-2016	02-Sep-2016	03-Sep-2016	03-Sep-2016	02-Sep-2016	02-Sep-2016	CCME AFW
pH	7.93	7.62	7.61	7.94	7.69	7.89	7.86	ns
Conductivity (uS/cm)	210	210	210	210	170	210	210	ns
Ammonia - Total (N)	0.022	0.03	0.027	0.019	0.018	0.019	0.017	0.141**
Alkalinity - Total (CaCO3)	65	63	62	61	63	63	65	ns
Alkalinity - Bicarbonate (CaCO3)	79	77	76	74	77	77	79	ns
Alkalinity - Carbonate (CaCO3)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Alkalinity - Hydroxide (CaCO3)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Nitrite Nitrogen	<0.010	0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.06
Nitrate Nitrogen	<0.010	0.030	0.056	<0.010	0.011	<0.010	<0.010	13
Chloride	14	14	14	14	2.3	14	14	120
Sulphate	18	18	19	18	17	18	19	ns
Dissolved Phosphorus	0.0060	< 0.0030	0.0040	0.0050	< 0.0030	0.0050	0.0050	ns
Total Phosphorus	0.0080	0.0030	0.010	0.0090	0.0070	0.0070	0.0080	ns
Dissolved Organic Carbon	14	13	13	15	6.4	12	15	ns
TDS	130	160	150	110	92	140	140	ns
Field Temperature*	13.8	10.67	5.82	10.84	13.62	14.41	18.78	ns
Field pH*	8.24	7.1	6.63	8.41	7.76	7.67	7.07	ns

Notes:

mg/L - milligrams per litre

uS/cm - microsiemens per centimeter

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard/guideline listed

* - based on field measurements

** - most conservative guideline presented based on maximum pH and maximum temperature measured in the field at these location

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-25 (cont): TERRA WATER ANALYTICAL RESULTS - NUTRIENTS AND OTHER PARAMETERS (mg/L)

Sample ID	T17	T18	T19	T19B	T20	T25	
Date	03-Sep-2016	03-Sep-2016	03-Sep-2016	03-Sep-2016	03-Sep-2016	04-Sep-2016	CCME AFW
pH	7.32	7.76	7.33	7.82	7.86	7.68	ns
Conductivity (uS/cm)	160	440	130	150	380	170	ns
Ammonia - Total (N)	0.029	0.075	0.028	0.02	0.021	0.023	0.588**
Alkalinity - Total (CaCO ₃)	67	220	49	55	120	69	ns
Alkalinity - Bicarbonate (CaCO ₃)	82	270	60	67	140	84	ns
Alkalinity - Carbonate (CaCO ₃)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Alkalinity - Hydroxide (CaCO ₃)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Nitrite Nitrogen	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.06
Nitrate Nitrogen	<0.010	<0.010	0.054	<0.010	<0.010	<0.010	13
Chloride	1.6	5.9	1.1	2.5	< 1.0	2.0	120
Sulphate	13	4.0	6.0	14	72	15	ns
Dissolved Phosphorus	0.0030	0.022	0.020	< 0.0030	0.0060	0.0060	ns
Total Phosphorus	0.0060	0.047	0.032	0.0030	0.043	0.0080	ns
Dissolved Organic Carbon	16	36	24	4.9	10	10	ns
TDS	180	320	120	92	220	80	ns
Field Temperature*	7.34	6.19	5.73	14.84	5.37	---	ns
Field pH*	7.47	7.42	7.19	7.7	7.7	---	ns

Notes:

mg/L - milligrams per litre

uS/cm - microsiemens per centimeter

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard/guideline listed

* - based on field measurements

** - most conservative guideline presented based on maximum pH and maximum temperature measured in the field at these location

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-26: TERRA WATER ANALYTICAL RESULTS - TOTAL METALS (mg/L)

Sample ID	T1	T2	T3	T4	T5	T6	T7	
Date	03-Sep-2016	03-Sep-2016	03-Sep-2016	03-Sep-2016	03-Sep-2016	03-Sep-2016	02-Sep-2016	CCME AFW
pH	7.79	7.54	7.93	7.79	7.86	7.50	7.90	ns
Hardness	69.2	47.2	82.7	72.4	91.4	98.3	88.7	ns
Aluminum	0.0259	0.0464	0.0778	0.0234	0.0324	0.297	0.02	0.005@pH<6.5 0.1@pH>=6.5
Antimony	<0.0005	<0.0005	0.00139	<0.0005	0.00124	0.00118	0.00133	ns
Arsenic	0.00151	0.00619	0.0841	0.00087	0.0736	0.116	0.0693	0.005
Barium	0.0104	0.0071	0.0163	0.0117	0.0189	0.0303	0.0171	ns
Beryllium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.00017	<0.0001	ns
Bismuth	<0.001	<0.001	<0.001	<0.001	<0.001	0.0055	<0.001	ns
Boron	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.5
Cadmium	<0.00001	<0.00001	0.000011	<0.00001	0.000035	0.000359	<0.00001	0.00009 Long term conc
Calcium	16.1	12.2	24.5	17.5	28.0	29.5	27.5	ns
Total Chromium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Chromium (+6)	---	---	---	---	---	---	---	0.001
Chromium (+3)	---	---	---	---	---	---	---	0.0089
Cobalt	<0.0005	<0.0005	0.00345	<0.0005	0.00063	0.0201	<0.0005	ns
Copper	0.0016	0.00648	0.00943	0.00104	0.00887	0.124	0.00773	0.002@H>=0<120 0.003@H>=120<180 0.004@H>=180
Iron	0.126	0.214	0.166	0.026	0.068	1.28	0.031	0.3
Lead	<0.0002	<0.0002	0.00357	0.00035	0.00116	0.00696	<0.0002	0.001@H>=0<60 0.002@H>=60<120 0.004@H>=120<180 0.007@H>=180
Lithium	<0.005	<0.005	0.0088	<0.005	0.0093	0.0098	0.009	ns
Magnesium	7.02	4.09	5.23	6.97	5.24	5.99	4.85	ns
Manganese	0.0156	0.0225	0.0158	0.0019	0.0173	0.505	0.0055	ns
Mercury	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000026
Molybdenum	<0.001	<0.001	0.0029	<0.001	0.0026	0.003	0.0029	0.073
Nickel	<0.001	0.0012	0.0052	<0.001	0.0041	0.0167	0.0039	0.025@H>=0<60 0.065@H>=60<120 0.11@H>=120<180 0.15@H>=180
Potassium	0.930	1.30	2.32	1.14	2.32	2.36	2.43	ns
Selenium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.001
Silver	<0.00002	<0.00002	0.000157	<0.00002	<0.00002	0.00043	<0.00002	0.00025
Sodium	2.67	1.23	9.32	2.69	9.30	9.54	8.40	ns
Strontium	0.0512	0.0179	0.0804	0.0555	0.0852	0.092	0.0813	ns
Thallium	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.000067	<0.00005	0.0008
Tin	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Titanium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Uranium	0.00043	0.00017	0.00283	0.00051	0.00282	0.00164	0.0027	0.015
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Zinc	<0.005	0.0089	0.0074	<0.005	0.01	0.0977	<0.005	0.03
Zirconium	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	ns

Notes:
mg/L - milligrams per litre
H - Hardness (as CaCO3)
< - less than analytical detection limit
'---' - sample not analyzed for parameter indicated
ns - no standard listed

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-26 (cont): TERRA WATER ANALYTICAL RESULTS - TOTAL METALS (mg/L)

Sample ID	T8A	T8B	T8C	T9	T10	T16-2M	T16-10M	
Date	02-Sep-2016	02-Sep-2016	02-Sep-2016	03-Sep-2016	03-Sep-2016	02-Sep-2016	02-Sep-2016	CCME AFW
pH	7.93	7.62	7.61	7.94	7.69	7.89	7.86	ns
Hardness	83.4	85.1	90.9	83.9	83.2	88.8	88.6	ns
Aluminum	0.0182	0.0208	0.0278	0.0217	0.0552	0.0203	0.0297	0.005@pH<6.5 0.1@pH>=6.5
Antimony	0.00133	0.00124	0.00122	0.00128	<0.0005	0.00128	0.00135	ns
Arsenic	0.0668	0.0717	0.0801	0.0417	0.00898	0.0685	0.0721	0.005
Barium	0.0165	0.0163	0.0178	0.0103	0.0111	0.0168	0.0172	ns
Beryllium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	ns
Bismuth	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Boron	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.5
Cadmium	<0.00001	<0.00001	0.000015	<0.00001	<0.00001	<0.00001	<0.00001	0.00009 Long term conc
Calcium	25.5	26.4	28.2	25.3	20.8	27.4	27.2	ns
Total Chromium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Chromium (+6)	---	---	---	---	---	---	---	0.001
Chromium (+3)	---	---	---	---	---	---	---	0.0089
Cobalt	<0.0005	<0.0005	<0.0005	<0.0005	0.001	<0.0005	<0.0005	ns
Copper	0.00778	0.00772	0.00775	0.00404	0.00187	0.0073	0.00767	0.002@H>=0<120 0.003@H>=120<180 0.004@H>=180
Iron	0.029	0.033	0.058	0.071	0.187	0.03	0.03	0.3
Lead	<0.0002	<0.0002	<0.0002	<0.0002	0.00033	<0.0002	<0.0002	0.001@H>=0<60 0.002@H>=60<120 0.004@H>=120<180 0.007@H>=180
Lithium	0.0092	0.0084	0.0103	0.0093	<0.005	0.0094	0.0096	ns
Magnesium	4.79	4.68	4.97	5.06	7.61	4.94	4.98	ns
Manganese	0.0051	0.0054	0.0188	0.0056	0.0579	0.0048	0.0055	ns
Mercury	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000026
Molybdenum	0.0028	0.0025	0.0025	0.0027	<0.001	0.0025	0.0026	0.073
Nickel	0.0039	0.0041	0.0042	0.0037	<0.001	0.0042	0.0039	0.025@H>=0<60 0.065@H>=60<120 0.11@H>=120<180 0.15@H>=180
Potassium	2.31	2.29	2.43	2.29	1.20	2.28	2.28	ns
Selenium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.001
Silver	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	0.00025
Sodium	8.57	8.87	8.91	9.16	2.78	8.63	8.82	ns
Strontium	0.0834	0.08	0.0851	0.0856	0.0547	0.0834	0.084	ns
Thallium	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.0008
Tin	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Titanium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Uranium	0.00262	0.00245	0.00246	0.0023	0.0006	0.00257	0.00254	0.015
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Zinc	<0.005	0.0064	0.0054	<0.005	<0.005	<0.005	<0.005	0.03
Zirconium	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	ns

Notes:
mg/L - milligrams per litre
H - Hardness (as CaCO3)
< - less than analytical detection limit
'---' - sample not analyzed for parameter indicated
ns - no standard listed

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-26 (cont): TERRA WATER ANALYTICAL RESULTS - TOTAL METALS (mg/L)

Sample ID	T17	T18	T19	T19B	T20	T25	
Date	03-Sep-2016	03-Sep-2016	03-Sep-2016	03-Sep-2016	03-Sep-2016	04-Sep-2016	CCME AFW
pH	7.32	7.76	7.33	7.82	7.86	7.68	ns
Hardness	115	204	72.0	72.2	182	82.7	ns
Aluminum	0.0374	0.0131	0.139	0.0192	0.0164	0.0844	0.005@pH<6.5 0.1@pH>=6.5
Antimony	<0.0005	<0.0005	0.00282	<0.0005	0.00063	<0.0005	ns
Arsenic	0.0037	0.0311	0.145	0.00028	0.0312	0.00217	0.005
Barium	0.018	0.0217	0.0068	0.0111	0.0139	0.0115	ns
Beryllium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	ns
Bismuth	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Boron	<0.05	0.973	<0.05	<0.05	<0.05	0.097	1.5
Cadmium	0.00003	0.000034	0.000047	<0.00001	<0.00001	<0.00001	0.00009 Long term conc
Calcium	32.1	55.4	20.8	17.6	49.3	20.7	ns
Total Chromium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Chromium (+6)	---	---	---	---	---	---	0.001
Chromium (+3)	---	---	---	---	---	---	0.0089
Cobalt	0.00216	0.00651	0.00998	<0.0005	0.00086	<0.0005	ns
Copper	0.00902	0.00319	0.0207	0.00082	0.00327	0.00091	0.002@H>=0<120 0.003@H>=120<180 0.004@H>=180
Iron	0.29	3.63	0.189	0.02	0.038	0.601	0.3
Lead	0.00022	0.00112	0.00039	<0.0002	<0.0002	<0.0002	0.001@H>=0<60 0.002@H>=60<120 0.004@H>=120<180 0.007@H>=180
Lithium	<0.005	0.0132	<0.005	<0.005	<0.005	<0.005	ns
Magnesium	8.41	15.9	4.87	6.85	14.2	7.51	ns
Manganese	0.102	0.57	0.0299	0.0016	0.0461	0.0181	ns
Mercury	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000026
Molybdenum	<0.001	0.0033	0.0084	<0.001	0.0019	<0.001	0.073
Nickel	0.0013	0.0057	0.0182	<0.001	0.0013	<0.001	0.025@H>=0<60 0.065@H>=60<120 0.11@H>=120<180 0.15@H>=180
Potassium	0.730	8.69	1.13	1.11	4.64	1.44	ns
Selenium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.001
Silver	<0.00002	0.000118	0.000072	<0.00002	<0.00002	<0.00002	0.00025
Sodium	2.83	14.8	1.13	2.56	5.10	3.44	ns
Strontium	0.048	0.127	0.0252	0.0579	0.0866	0.0574	ns
Thallium	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.0008
Tin	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Titanium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Uranium	0.00031	0.00123	0.00171	0.00057	0.00264	0.00021	0.015
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Zinc	0.0162	0.165	0.02	<0.005	<0.005	<0.005	0.03
Zirconium	<0.0005	<0.0005	0.00088	<0.0005	<0.0005	<0.0005	ns

Notes:
mg/L - milligrams per litre
H - Hardness (as CaCO3)
< - less than analytical detection limit
'---' - sample not analyzed for parameter indicated
ns - no standard listed
Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-27: TERRA WATER ANALYTICAL RESULTS - DISSOLVED METALS (mg/L)

Sample ID	T8A	T8B	T8C	T25	T16-2M	T16-10M	T19B	
Date	02-Sep-2016	02-Sep-2016	02-Sep-2016	04-Sep-2016	02-Sep-2016	02-Sep-2016	03-Sep-2016	CCME AFW
pH	7.93	7.62	7.61	7.68	7.89	7.86	7.82	ns
Hardness	83.4	85.1	90.9	82.7	88.8	88.6	72.2	ns
Aluminum	0.0103	0.0132	0.0128	0.0053	0.0104	0.0131	0.0049	0.005@pH<6.5 0.1@pH>=6.5
Antimony	0.00141	0.00131	0.00124	<0.0005	0.00139	0.00134	<0.0005	ns
Arsenic	0.0718	0.0709	0.0763	0.00158	0.07	0.0705	0.0003	0.005
Barium	0.0169	0.0163	0.0168	0.011	0.0163	0.0167	0.0119	ns
Beryllium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	ns
Bismuth	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Boron	<0.05	<0.05	<0.05	0.094	<0.05	<0.05	<0.05	1.5
Calcium	25.7	27.2	27.0	18.9	25.6	26.0	17.5	ns
Cadmium	<0.00001	0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.00009 Long term conc
Total Chromium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Chromium (+6)	---	---	---	---	---	---	---	0.001
Chromium (+3)	---	---	---	---	---	---	---	0.0089
Cobalt	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	ns
Copper	0.0076	0.00774	0.00727	0.0008	0.00727	0.00749	0.00099	0.002@H>=0<120 0.003@H>=120<180 0.004@H>=180
Iron	0.0099	0.018	0.0194	0.0878	0.01	0.0116	<0.005	0.3
Lead	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.001@H>=0<60 0.002@H>=60<120 0.004@H>=120<180 0.007@H>=180
Lithium	0.0102	0.0094	0.0091	<0.005	0.0091	0.0097	<0.005	ns
Magnesium	5.10	4.99	4.79	7.23	4.82	4.99	6.99	ns
Manganese	<0.001	0.0019	0.0025	0.005	<0.001	<0.001	<0.001	ns
Mercury	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000026
Molybdenum	0.0026	0.0023	0.0025	<0.001	0.0027	0.0027	<0.001	0.073
Nickel	0.0041	0.0039	0.0039	<0.001	0.0037	0.0039	<0.001	0.025@H>=0<60 0.065@H>=60<120 0.11@H>=120<180 0.15@H>=180
Potassium	2.48	2.39	2.35	1.43	2.26	2.32	1.16	ns
Selenium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.001
Silver	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	0.00025
Sodium	9.26	9.06	9.03	3.23	8.78	8.84	2.67	ns
Strontium	0.0832	0.0809	0.0843	0.0574	0.0818	0.0837	0.0562	ns
Thallium	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.0008
Tin	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Titanium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Uranium	0.00256	0.00247	0.00256	0.00022	0.00254	0.00278	0.00054	0.015
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Zinc	<0.005	0.0066	0.0056	<0.005	<0.005	<0.005	<0.005	0.03
Zirconium	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	ns

Notes:
mg/L - milligrams per litre
H - Hardness in mg/L CaCO3
< - less than analytical detection limit indicated
'---' - sample not analyzed for parameter indicated
ns - no standard listed
Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-28: TERRA WATER ANALYTICAL RESULTS - BTEX AND F1 - F4 (mg/L)

Sample ID	T3	T5	T6	T8A	T18	T19	T25	
Date	03-Sep-2016	03-Sep-2016	03-Sep-2016	02-Sep-2016	03-Sep-2016	03-Sep-2016	04-Sep-2016	CCME AFW
Benzene	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.37
Toluene	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.002
Ethylbenzene	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.09
Xylenes	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	ns
F1 (C6-C10)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ns
F2 (C10-C16)	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	ns
F3 (C16-C34)	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	ns
F4 (C34-C50)	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	ns

Notes:

mg/L - all samples in milligrams per litre unless otherwise indicated

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

N/A - not applicable

ns - no standard/guideline listed

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-29: TERRA BACKGROUND - NUTRIENTS AND OTHER PARAMETERS (mg/L)

Sample ID	R3	R4	
Date	02-Sep-2016	05-Sep-2016	CCME AFW
pH	7.68	7.84	ns
Conductivity (uS/cm)	78	160	ns
Ammonia - Total (N)	0.019	0.016	0.197**
Alkalinity - Total (CaCO ₃)	34	58	ns
Alkalinity - Bicarbonate (CaCO ₃)	42	71	ns
Alkalinity - Carbonate (CaCO ₃)	< 0.50	< 0.50	ns
Alkalinity - Hydroxide (CaCO ₃)	< 0.50	< 0.50	ns
Nitrite Nitrogen	<0.010	<0.010	0.06
Nitrate Nitrogen	<0.010	<0.010	13
Chloride	< 1.0	2.5	120
Sulphate	1.3	15	ns
Dissolved Phosphorus	0.0030	0.0030	ns
Total Phosphorus	0.0050	0.0030	ns
Dissolved Organic Carbon	9.6	6.3	ns
TDS	60	88	ns
Field Temperature*	14.87	14.39	ns
Field pH*	7.68	8.07	ns

Notes:

mg/L - milligrams per litre

uS/cm - microsiemens per centimeter

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard/guideline listed

* - based on field measurements

** - most conservative guideline presented based on maximum pH and maximum temperature measured in the field at these location

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-30: TERRA BACKGROUND - TOTAL METALS (mg/L)

Sample ID	R3	R4	
Date	02-Sep-2016	05-Sep-2016	CCME AFW
pH	7.68	7.84	ns
Hardness	37.3	75.2	ns
Aluminum	0.0117	0.0155	0.005@pH<6.5 0.1@pH>=6.5
Antimony	<0.0005	<0.0005	ns
Arsenic	0.00071	0.00067	0.005
Barium	0.0055	0.0114	ns
Beryllium	<0.0001	<0.0001	ns
Bismuth	<0.001	<0.001	ns
Boron	<0.05	<0.05	1.5
Cadmium	<0.00001	0.000013	0.00009 Long term conc
Calcium	10.2	18.0	ns
Total Chromium	<0.001	<0.001	ns
Chromium (+6)	---	---	0.001
Chromium (+3)	---	---	0.0089
Cobalt	<0.0005	<0.0005	ns
Copper	0.00093	<0.0005	0.002@H>=0<120 0.003@H>=120<180 0.004@H>=180
Iron	0.024	0.013	0.3
Lead	<0.0002	<0.0002	0.001@H>=0<60 0.002@H>=60<120 0.004@H>=120<180 0.007@H>=180
Lithium	<0.005	<0.005	ns
Magnesium	2.87	7.35	ns
Manganese	0.002	<0.001	ns
Mercury	<0.00001	<0.00001	0.000026
Molybdenum	<0.001	<0.001	0.073
Nickel	<0.001	<0.001	0.025@H>=0<60 0.065@H>=60<120 0.11@H>=120<180 0.15@H>=180
Potassium	0.875	1.13	ns
Selenium	<0.0001	<0.0001	0.001
Silver	<0.00002	<0.00002	0.00025
Sodium	1.83	2.77	ns
Strontium	0.021	0.0582	ns
Thallium	<0.00005	<0.00005	0.0008
Tin	<0.005	<0.005	ns
Titanium	<0.005	<0.005	ns
Uranium	0.00019	0.00053	0.015
Vanadium	<0.005	<0.005	ns
Zinc	<0.005	<0.005	0.03
Zirconium	<0.0005	<0.0005	ns

Notes:
mg/L - milligrams per litre
H - Hardness (as CaCO3)
< - less than analytical detection limit
'---' - sample not analyzed for parameter indicated
ns - no standard listed
Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-31: TERRA BACKGROUND - BTEX AND F1 - F4 (mg/L)

Sample ID	R3	R4	
Date	02-Sep-2016	05-Sep-2016	CCME AFW
Benzene	<0.0004	<0.0004	0.37
Toluene	<0.0004	<0.0004	0.002
Ethylbenzene	<0.0004	<0.0004	0.09
Xylenes	<0.0008	<0.0008	ns
F1 (C6-C10)	<0.1	<0.1	ns
F2 (C10-C16)	< 0.10	< 0.10	ns
F3 (C16-C34)	< 0.20	< 0.20	ns
F4 (C34-C50)	< 0.20	< 0.20	ns

Notes:

mg/L - all samples in milligrams per litre unless otherwise indicated

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

N/A - not applicable

ns - no standard/guideline listed

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-32: NORTHRIM WATER ANALYTICAL RESULTS - NUTRIENTS AND OTHER PARAMETERS (mg/L)

Sample ID	NO-1	NO-2	NO-3	NO-4	NO-5	NO-6	NO-7-2M	NO-9	NO-11-2M	
Date	05-Sep-2016	05-Sep-2016	05-Sep-2016	05-Sep-2016	05-Sep-2016	05-Sep-2016	05-Sep-2016	05-Sep-2016	05-Sep-2016	CCME AFW
pH	7.77	8.07	7.59	7.35	7.78	7.64	7.56	7.71	7.55	ns
Conductivity (uS/cm)	190	410	150	310	160	170	150	460	140	ns
Ammonia - Total (N)	0.036	0.043	0.031	0.079	0.026	0.89	0.037	0.035	0.028	0.197**
Alkalinity - Total (CaCO ₃)	61	190	60	160	56	68	62	100	59	ns
Alkalinity - Bicarbonate (CaCO ₃)	74	230	74	200	68	83	75	120	72	ns
Alkalinity - Carbonate (CaCO ₃)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Alkalinity - Hydroxide (CaCO ₃)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Nitrite Nitrogen	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.06
Nitrate Nitrogen	0.017	<0.010	0.015	<0.010	<0.010	0.011	<0.010	0.087	<0.010	13
Chloride	2.1	1.2	1.0	< 1.0	2.1	2.6	< 1.0	3.7	< 1.0	120
Sulphate	31	22	8.8	< 1.0	17	15	10	130	10	ns
Total Phosphorus	0.033	0.015	0.0060	0.019	< 0.0030	0.0060	0.0030	0.0090	0.0060	ns
Dissolved Phosphorus	0.0050	0.0040	0.0030	< 0.0030	< 0.0030	< 0.0030	0.0030	0.0040	0.0040	ns
Dissolved Organic Carbon	5.6	13	14	13	6.2	4.4	15	7.7	14	ns
TDS	110	240	84	170	68	80	110	310	96	ns
Field Temperature*	12.38	8.12	9.59	8.65	14.11	13.74	10.43	8.16	10.84	ns
Field pH*	7.92	7.61	7.6	7.04	7.88	7.89	7.26	8.13	6.99	ns

Notes:

mg/L - milligrams per litre

ug/L - micrograms per litre

uS/cm - microsiemens per centimeter

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard/guideline listed

* - based on field measurements

** - most conservative guideline presented based on maximum pH and maximum temperature measured in the field at these location

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-33: NORTHRIM WATER ANALYTICAL RESULTS - TOTAL METALS (mg/L)

Sample ID	NO-1	NO-2	NO-3	NO-4	NO-5	NO-6	NO-7-2M	NO-9	NO-11-2M	
Date	05-Sep-2016	05-Sep-2016	05-Sep-2016	05-Sep-2016	05-Sep-2016	05-Sep-2016	05-Sep-2016	05-Sep-2016	05-Sep-2016	CCME AFW
pH	7.77	8.07	7.59	7.35	7.78	7.64	7.56	7.71	7.55	ns
Hardness	90.4	95.2	70.1	161	72.9	68.9	72.6	214	72.7	ns
Aluminum	0.134	0.0377	0.0377	0.0191	0.0174	0.0551	0.0331	0.27	0.0236	0.005@pH<6.5 0.1@pH>=6.5
Antimony	0.00069	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.00109	<0.0005	ns
Arsenic	0.0531	0.0171	0.00791	0.0254	0.00037	0.00155	0.00834	0.242	0.00819	0.005
Barium	0.0131	0.0147	0.0073	0.0329	0.0108	0.0118	0.008	0.0221	0.0075	ns
Beryllium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	ns
Bismuth	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0023	<0.001	ns
Boron	<0.05	0.313	<0.05	<0.05	<0.05	<0.05	<0.05	0.064	<0.05	1.5
Cadmium	0.000074	0.000084	0.000041	0.000033	<0.00001	0.000012	<0.00001	0.000691	<0.00001	0.00009
Calcium	22.7	28.0	20.2	47.8	17.9	17.0	21.5	73.6	21.4	Long term conc
Total Chromium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Chromium (+6)	---	---	---	---	---	---	---	---	---	0.001
Chromium (+3)	---	---	---	---	---	---	---	---	---	0.0089
Cobalt	0.0124	0.00066	<0.0005	0.00377	<0.0005	<0.0005	<0.0005	0.0264	<0.0005	ns
Copper	0.00507	0.042	0.00266	0.00522	0.00258	0.0018	0.00244	0.0134	0.00236	0.002@H>=0<120 0.003@H>=120<180 0.004@H>=180
Iron	0.178	1.19	0.071	2.76	0.022	0.199	0.076	0.839	0.065	0.3
Lead	0.00344	0.012	0.00069	0.0132	0.00216	0.00107	0.00154	0.0873	0.00074	0.001@H>=0<60 0.002@H>=60<120 0.004@H>=120<180 0.007@H>=180
Lithium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Magnesium	8.17	6.13	4.77	10.2	6.87	6.43	4.57	7.47	4.69	ns
Manganese	0.0116	0.0361	0.0201	0.341	0.0018	0.0236	0.0224	0.346	0.0248	ns
Mercury	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000026
Molybdenum	0.0026	0.0026	<0.001	<0.001	<0.001	<0.001	<0.001	0.0154	<0.001	0.073
Nickel	0.0086	0.0011	0.0011	0.0028	<0.001	<0.001	<0.001	0.0174	<0.001	0.025@H>=0<60 0.065@H>=60<120 0.11@H>=120<180 0.15@H>=180
Potassium	1.32	2.06	0.756	0.949	1.07	0.942	0.740	6.64	0.748	ns
Selenium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.00011	<0.0001	0.001
Silver	0.000025	0.00171	<0.00002	0.000021	<0.00002	<0.00002	<0.00002	0.000173	<0.00002	0.00025
Sodium	2.79	53.2	1.68	3.44	2.57	2.42	1.57	7.60	1.55	ns
Strontium	0.0627	0.0321	0.0237	0.0555	0.0597	0.0513	0.0265	0.167	0.0261	ns
Thallium	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.0008
Tin	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Titanium	0.0079	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0101	<0.005	ns
Uranium	0.00181	0.00044	0.00017	0.00021	0.00055	0.0005	0.0002	0.00842	0.00019	0.015
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Zinc	0.0473	0.0483	0.0099	0.0172	<0.005	0.0135	<0.005	0.296	<0.005	0.03
Zirconium	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	ns

Notes:
mg/L - milligrams per litre
H - Hardness (as CaCO3)
< - less than analytical detection limit
'---' - sample not analyzed for parameter indicated
ns - no standard listed

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-34: NORTHRIM WATER ANALYTICAL RESULTS - DISSOLVED METALS (mg/L)

Sample ID	NO-1	NO-2	NO-3	NO-4	NO-11-2M	
Date	05-Sep-2016	05-Sep-2016	05-Sep-2016	05-Sep-2016	05-Sep-2016	CCME AFW
pH	7.77	8.07	7.59	7.35	7.55	ns
Total Hardness	90.4	95.2	70.1	161	72.7	ns
Aluminum	0.0084	0.0146	0.0184	0.0144	0.0168	0.005@pH<6.5 0.1@pH>=6.5
Antimony	0.00073	<0.0005	<0.0005	<0.0005	<0.0005	ns
Arsenic	0.0566	0.00728	0.00813	0.0182	0.00738	0.005
Barium	0.0119	0.0145	0.0087	0.0223	0.0089	ns
Beryllium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	ns
Bismuth	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Boron	<0.05	0.337	<0.05	<0.05	<0.05	1.5
Calcium	21.1	27.2	20.1	50.4	20.8	ns
Cadmium	0.000077	0.000024	<0.00001	<0.00001	<0.00001	0.00009 Long term conc
Chromium, Total	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Chromium, Hexavalent	---	---	---	---	---	0.001
Chromium, Trivalent	---	---	---	---	---	0.0089
Cobalt	0.012	<0.0005	<0.0005	0.00387	<0.0005	ns
Copper	0.00307	0.0141	0.002	0.00037	0.00254	0.002@H>=0<120 0.003@H>=120<180 0.004@H>=180
Iron	0.0079	0.187	0.0403	1.5	0.135	0.3
Lead	0.00154	0.0015	0.00035	0.00039	0.00043	0.001@H>=0<60 0.002@H>=60<120 0.004@H>=120<180 0.007@H>=180
Lithium	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Magnesium	8.04	6.38	4.61	10.5	5.08	ns
Manganese	0.0015	0.0321	0.0149	0.337	0.0275	ns
Mercury	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000026
Molybdenum	0.0028	0.003	<0.001	<0.001	<0.001	0.073
Nickel	0.0078	0.0011	<0.001	0.0023	<0.001	0.025@H>=0<60 0.065@H>=60<120 0.11@H>=120<180 0.15@H>=180
Potassium	1.14	2.32	0.711	0.945	0.743	ns
Selenium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.001
Silver	<0.00002	0.000317	<0.00002	<0.00002	<0.00002	0.00025
Sodium	2.85	58.0	1.57	3.57	1.76	ns
Strontium	0.0618	0.0343	0.0261	0.056	0.0268	ns
Thallium	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.0008
Tin	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Titanium	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Uranium	0.00188	0.00049	0.00018	0.00015	0.00018	0.015
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Zinc	0.0376	0.0179	<0.005	0.0068	0.0079	0.03
Zirconium	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	ns

Notes:

mg/L - milligrams per litre

H - Hardness in mg/L CaCO₃

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard listed

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshw

TABLE B-35: NORTHRIM WATER ANALYTICAL RESULTS - BTEX AND F1 - F4 (mg/L)

Sample ID	NO-1	NO-2	NO-3	NO-4	NO-6	DUP 9	NO-9	NO-11-2M	
Date	05-Sep-2016	05-Sep-2016	05-Sep-2016	05-Sep-2016	05-Sep-2016	(NO-6)	05-Sep-2016	05-Sep-2016	CCME AFW
Benzene	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.37
Toluene	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.002
Ethylbenzene	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.09
Xylenes	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	ns
F1 (C6-C10)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ns
F2 (C10-C16)	< 0.10	< 0.10	< 0.10	0.15	< 0.10	< 0.10	0.15	< 0.10	ns
F3 (C16-C34)	< 0.20	< 0.20	< 0.20	15	< 0.20	< 0.20	1.1	< 0.20	ns
F4 (C34-C50)	< 0.20	< 0.20	< 0.20	12	< 0.20	< 0.20	0.27	< 0.20	ns

Notes:

mg/L - all samples in milligrams per litre unless otherwise indicated

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

N/A - not applicable

ns - no standard/guideline listed

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-36: NOREX WATER ANALYTICAL RESULTS - NUTRIENTS AND OTHER PARAMETERS (mg/L)

Sample ID	NOREX-1	NOREX-2	NOREX-3	NOREX-5	NOREX-6	NOREX-6B	NX-4A	
Date	04-Sep-2016	04-Sep-2016	04-Sep-2016	04-Sep-2016	04-Sep-2016	04-Sep-2016	04-Sep-2016	CCME AFW
pH	8.05	7.97	6.95	7.76	6.94	4.96	7.87	ns
Conductivity (uS/cm)	380	440	640	220	47	80	400	ns
Ammonia - Total (N)	0.25	0.034	0.14	0.025	0.053	0.25	0.036	0.282**
Alkalinity - Total (CaCO ₃)	170	160	68	59	17	2.5	150	ns
Alkalinity - Bicarbonate (CaCO ₃)	200	190	82	72	20	3.1	190	ns
Alkalinity - Carbonate (CaCO ₃)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Alkalinity - Hydroxide (CaCO ₃)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Nitrite Nitrogen	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050 [§]	<0.010	0.06
Nitrate Nitrogen	<0.010	0.39	<0.010	0.13	0.016	<0.050 [§]	<0.010	13
Chloride	1.2	1.3	2.5	< 1.0	< 1.0	8.3	1.3	120
Sulphate	33	68	240	49	< 1.0	< 0.50	52	ns
Total Phosphorus	< 0.0030	0.0080	0.034	0.0080	0.094	0.56	0.0070	ns
Dissolved Phosphorus	< 0.0030	0.0040	0.0030	< 0.0030	0.011	0.0050	< 0.0030	ns
Dissolved Organic Carbon	6.3	4.6	14	5.4	18	110	8.6	ns
TDS	180	240	260	88	12	300	220	ns
Field Temperature*	3.12	4.48	6.44	2.76	7.62	7.71	7.68	ns
Field pH*	6.94	8.28	7.69	8.22	7.69	4.89	8.6	ns

Notes:

mg/L - milligrams per litre

uS/cm - microsiemens per centimeter

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard/guideline listed

[§] Detection Limits raised due to sample matrix interference

* - based on field measurements

** - most conservative guideline presented based on maximum pH and maximum temperature measured in the field at these location

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-37: NOREX WATER ANALYTICAL RESULTS - TOTAL METALS (mg/L)

Sample ID	NOREX-1	NOREX-2	NOREX-3	NOREX-5	NOREX-6	NOREX-6B	NX-4A	CCME AFW
Date	04-Sep-2016	04-Sep-2016	04-Sep-2016	04-Sep-2016	04-Sep-2016	04-Sep-2016	04-Sep-2016	
pH	8.05	7.97	6.95	7.76	6.94	4.96	7.87	ns
Hardness	167	205	306	105	27.5	53.0	200	ns
Aluminum	0.0036	0.0048	0.0334	0.0078	0.15	0.792	2.28	0.005@pH<6.5 0.1@pH>=6.5
Antimony	<0.0005	0.00076	0.00092	0.00453	<0.0005	<0.0005	<0.0005	ns
Arsenic	0.0653	0.0506	0.0212	0.0781	0.00388	0.327	0.0388	0.005
Barium	0.0554	0.0375	0.0281	0.0072	0.0403	0.0164	0.0905	ns
Beryllium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.00012	ns
Bismuth	<0.001	<0.001	<0.001	<0.001	<0.001	0.0019	<0.001	ns
Boron	0.095	0.085	<0.05	<0.05	<0.05	<0.05	0.062	1.5
Cadmium	0.000011	0.00062	0.00209	0.000678	0.000097	0.0004	0.000353	0.00009 Long term conc
Calcium	51.0	64.5	101	31.6	7.32	11.4	61.3	ns
Total Chromium	<0.001	<0.001	<0.001	<0.001	<0.001	0.0022	0.0039	ns
Chromium (+6)	---	---	---	---	---	---	---	0.001
Chromium (+3)	---	---	---	---	---	---	---	0.0089
Cobalt	0.00118	0.0118	0.091	0.00721	0.00223	0.0282	0.00869	ns
Copper	<0.0005	0.00994	0.00223	0.0385	0.00792	0.049	0.0084	0.002@H>=0<120 0.003@H>=120<180 0.004@H>=180
Iron	2.01	0.033	2.72	0.036	1.31	2.9	5	0.3
Lead	0.0169	0.00847	0.0478	0.0409	0.0104	0.0292	0.00656	0.001@H>=0<60 0.002@H>=60<120 0.004@H>=120<180 0.007@H>=180
Lithium	0.011	0.0112	0.0064	<0.005	<0.005	0.0093	0.0118	ns
Magnesium	9.69	10.6	13.1	6.39	2.25	5.97	11.4	ns
Manganese	0.295	0.0352	1.57	0.054	0.119	0.361	3.61	ns
Mercury	<0.00001	<0.00001	<0.00001	0.000011	<0.00001	0.000047	0.000017	0.000026
Molybdenum	0.0152	0.0152	0.0037	0.0064	<0.001	<0.001	0.0075	0.073
Nickel	<0.001	0.007	0.019	0.0127	0.0016	0.0187	0.0084	0.025@H>=0<60 0.065@H>=60<120 0.11@H>=120<180 0.15@H>=180
Potassium	2.37	2.53	2.58	0.897	1.65	1.84	2.01	ns
Selenium	<0.0001	0.00022	0.00041	0.0012	<0.0001	0.00029	<0.0001	0.001
Silver	<0.00002	<0.00002	0.000033	0.000365	0.000065	0.00177	0.000023	0.00025
Sodium	14.7	14.3	8.72	1.05	2.40	2.08	12.5	ns
Strontium	0.266	0.262	0.148	0.0165	0.0165	0.0233	0.224	ns
Thallium	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.0008
Tin	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Titanium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0993	ns
Uranium	0.00973	0.00795	0.00048	0.0013	0.00014	<0.0001	0.00416	0.015
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0055	ns
Zinc	0.0109	0.431	2.63	0.587	0.0694	0.755	0.327	0.03
Zirconium	0.00066	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.00078	ns

Notes:

mg/L - milligrams per litre

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard/guideline listed

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-38: NOREX WATER ANALYTICAL RESULTS -DISSOLVED METALS (mg/L)

Sample ID	NOREX-1	NOREX-2	NOREX-3	
Date	04-Sep-2016	04-Sep-2016	04-Sep-2016	CCME AFW
pH	8.05	7.97	6.95	ns
Hardness	167	205	306	ns
Aluminum	0.0053	0.0068	0.0134	0.005@pH<6.5 0.1@pH>=6.5
Antimony	<0.0005	0.00071	<0.0005	ns
Arsenic	0.0564	0.0509	0.0247	0.005
Barium	0.0526	0.0379	0.0242	ns
Beryllium	<0.0001	<0.0001	<0.0001	ns
Bismuth	<0.001	<0.001	<0.001	ns
Boron	0.089	0.086	0.062	1.5
Calcium	47.8	60.0	70.0	ns
Cadmium	<0.00001	0.000384	<0.00001	0.00009 Long term conc
Total Chromium	<0.001	<0.001	<0.001	ns
Chromium (+6)	---	---	---	0.001
Chromium (+3)	---	---	---	0.0089
Cobalt	0.00119	0.0115	0.0227	ns
Copper	<0.0002	0.00347	<0.0002	0.002@H>=0<120 0.003@H>=120<180 0.004@H>=180
Iron	1.57	0.019	0.715	0.3
Lead	0.00134	0.00558	0.00115	0.001@H>=0<60 0.002@H>=60<120 0.004@H>=120<180 0.007@H>=180
Lithium	0.0118	0.0111	0.0073	ns
Magnesium	10.3	11.1	10.8	ns
Manganese	0.296	0.0319	0.562	ns
Mercury	0.000012	<0.00001	<0.00001	0.000026
Molybdenum	0.0147	0.0143	0.0084	0.073
Nickel	<0.001	0.0066	0.0057	0.025@H>=0<60 0.065@H>=60<120 0.11@H>=120<180 0.15@H>=180
Potassium	2.46	2.46	1.65	ns
Selenium	<0.0001	0.00018	0.00012	0.001
Silver	<0.00002	<0.00002	<0.00002	0.00025
Sodium	15.1	14.4	10.7	ns
Strontium	0.266	0.257	0.174	ns
Thallium	<0.00005	<0.00005	<0.00005	0.0008
Tin	<0.005	<0.005	<0.005	ns
Titanium	<0.005	<0.005	<0.005	ns
Uranium	0.00937	0.0076	0.00089	0.015
Vanadium	<0.005	<0.005	<0.005	ns
Zinc	<0.005	0.438	0.0142	0.03
Zirconium	0.0006	<0.0005	<0.0005	ns

Notes:

mg/L - milligrams per litre

H - Hardness in mg/L CaCO₃

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard listed

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-39: NOREX WATER ANALYTICAL RESULTS - PETROLEUM HYDROCARBON PARAMETERS (mg/L)

Sample ID	NOREX-2	NOREX-3	
Date	04-Sep-2016	04-Sep-2016	CCME AFW
Benzene	<0.0004	<0.0004	0.37
Toluene	<0.0004	<0.0004	0.002
Ethylbenzene	<0.0004	<0.0004	0.09
Xylenes	<0.0008	<0.0008	ns
F1 (C6-C10)	<0.1	<0.1	ns
F2 (C10-C16)	< 0.10	1.3	ns
F3 (C16-C34)	< 0.20	0.95	ns
F4 (C34-C50)	< 0.20	< 0.20	ns

Notes:

mg/L - all samples in milligrams per litre unless otherwise indicated

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

N/A - not applicable

ns - no standard/guideline listed

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-40: SMALLWOOD WATER ANALYTICAL RESULTS - NUTRIENTS AND OTHER PARAMETERS (mg/L)

Sample ID	SM-1	SM-2	SM-6-2M	SM-6-4.5M	SM-7-2M	SM-7-7.5M	
Date	04-Sep-2016	04-Sep-2016	04-Sep-2016	04-Sep-2016	04-Sep-2016	04-Sep-2016	CCME AFW
pH	7.73	7.75	7.75	7.72	7.68	7.38	ns
Conductivity (uS/cm)	110	110	110	110	110	110	ns
Ammonia - Total (N)	0.02	0.025	0.021	0.02	0.035	0.022	0.197**
Alkalinity - Total (CaCO ₃)	43	41	42	41	39	42	ns
Alkalinity - Bicarbonate (CaCO ₃)	52	50	52	50	47	51	ns
Alkalinity - Carbonate (CaCO ₃)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Alkalinity - Hydroxide (CaCO ₃)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Nitrite Nitrogen	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	13
Nitrate Nitrogen	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.06
Chloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	120
Sulphate	15	14	14	14	14	14	ns
Total Phosphorus	0.0030	< 0.0030	0.0030	0.0030	0.0030	0.013	ns
Dissolved Phosphorus	< 0.0030	< 0.0030	< 0.0030	< 0.0030	< 0.0030	< 0.0030	ns
Dissolved Organic Carbon	5.9	5.7	6.6	6.1	5.6	5.8	ns
TDS	12	28	12	16	28	32	ns
Field Temperature*	12.01	13.05	13.13	13.04	13.09	8.99	ns
Field pH*	8.16	8.11	7.44	7.33	7.35	6.74	ns

Notes:

mg/L - milligrams per litre

uS/cm - microsiemens per centimeter

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard/guideline listed

* - based on field measurements

** - most conservative guideline presented based on maximum pH and maximum temperature measured in the field at these location

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-41: SMALLWOOD WATER ANALYTICAL RESULTS - TOTAL METALS (mg/L)

Sample ID	SM-1	DUP 10	SM-2	SM-6-2M	SM-6-4.5M	SM-7-2M	SM-7-7.5M	
Date	04-Sep-2016	04-Sep-2016	04-Sep-2016	04-Sep-2016	04-Sep-2016	04-Sep-2016	04-Sep-2016	CCME AFW
pH	7.73	7.75	7.75	7.75	7.72	7.68	7.38	ns
Hardness	51.8	52.8	50.6	50.2	52.5	51.4	51.1	ns
Aluminum	0.019	0.028	0.0188	0.0142	0.0168	0.013	0.0214	0.005@pH<6.5 0.1@pH>=6.5
Antimony	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	ns
Arsenic	0.00054	0.00065	0.0005	0.0005	0.00054	0.00051	0.00039	0.005
Barium	0.0069	0.0068	0.0066	0.0064	0.0064	0.0069	0.0082	ns
Beryllium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	ns
Bismuth	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Boron	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.5
Cadmium	0.000031	0.000042	0.000014	0.00001	0.000011	0.000011	0.000023	0.00009 Long term conc
Calcium	14.0	14.6	13.8	13.5	14.1	13.8	14.1	ns
Total Chromium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Chromium (+6)	---	---	---	---	---	---	---	0.001
Chromium (+3)	---	---	---	---	---	---	---	0.0089
Cobalt	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	ns
Copper	0.00157	0.00173	0.00159	0.0016	0.00177	0.00162	0.00176	0.002@H>=0<120 0.003@H>=120<180 0.004@H>=180
Iron	0.035	0.054	0.022	0.021	0.027	0.022	0.067	0.3
Lead	<0.0002	0.00029	0.00025	<0.0002	<0.0002	<0.0002	<0.0002	0.001@H>=0<60 0.002@H>=60<120 0.004@H>=120<180 0.007@H>=180
Lithium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Magnesium	4.07	3.96	3.90	3.98	4.21	4.08	3.87	ns
Manganese	0.015	0.0182	0.0108	0.0111	0.0116	0.0115	0.0609	ns
Mercury	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000013	<0.00001	0.000026
Molybdenum	0.0011	0.0011	0.001	0.001	0.001	0.0011	<0.001	0.073
Nickel	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.025@H>=0<60 0.065@H>=60<120 0.11@H>=120<180 0.15@H>=180
Potassium	0.753	0.751	0.730	0.754	0.772	0.755	0.755	ns
Selenium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.001
Silver	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	0.00025
Sodium	2.63	2.70	2.56	2.88	2.76	2.68	2.50	ns
Strontium	0.0265	0.0267	0.0258	0.0262	0.0257	0.0267	0.0251	ns
Thallium	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.0008
Tin	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Titanium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Uranium	0.00034	0.00034	0.00032	0.00032	0.00032	0.00033	0.00021	0.015
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Zinc	0.0226	0.0419	0.0193	0.011	0.0159	0.013	0.0243	0.03
Zirconium	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	ns

Notes:

mg/L - milligrams per litre

H - Hardness (as CaCO₃)

< - less than analytical detection limit

'---' - sample not analyzed for parameter indicated

ns - no standard listed

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-42: SMALLWOOD WATER ANALYTICAL RESULTS - DISSOLVED METALS (mg/L)

Sample ID	SM-7-7.5M	
Date	04-Sep-2016	CCME AFW
pH	7.38	ns
Total Hardness	51.1	ns
Aluminum	0.0064	0.005@pH<6.5 0.1@pH>=6.5
Antimony	<0.0005	ns
Arsenic	0.00031	0.005
Barium	0.0077	ns
Beryllium	<0.0001	ns
Bismuth	<0.001	ns
Boron	<0.05	1.5
Calcium	12.9	ns
Cadmium	0.000017	0.00009 Long term conc
Total Chromium	<0.001	ns
Chromium (+6)	---	0.001
Chromium (+3)	---	0.0089
Cobalt	<0.0005	ns
Copper	0.00164	0.002@H>=0<120 0.003@H>=120<180 0.004@H>=180
Iron	0.0104	0.3
Lead	<0.0002	0.001@H>=0<60 0.002@H>=60<120 0.004@H>=120<180 0.007@H>=180
Lithium	<0.005	ns
Magnesium	3.98	ns
Manganese	0.0282	ns
Mercury	<0.00001	0.000026
Molybdenum	<0.001	0.073
Nickel	<0.001	0.025@H>=0<60 0.065@H>=60<120 0.11@H>=120<180 0.15@H>=180
Potassium	0.725	ns
Selenium	<0.0001	0.001
Silver	<0.00002	0.00025
Sodium	2.58	ns
Strontium	0.0256	ns
Thallium	<0.00005	0.0008
Tin	<0.005	ns
Titanium	<0.005	ns
Uranium	0.0002	0.015
Vanadium	<0.005	ns
Zinc	0.0143	0.03
Zirconium	<0.0005	ns

Notes:

mg/L - milligrams per litre

H - Hardness in mg/L CaCO₃

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard listed

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-43: DUPLICATE WATER ANALYTICAL RESULTS - TOTAL METALS (mg/L)

Sample ID Date	ELB-1-GBL 30-Aug-16	DUP 1 (ELB-1-GBL)	RPD (%)	CL-3 31-Aug-2016	DUP 2 (CL-3)	RPD (%)	Method Detection Limits (mg/L)	MDL x 5
pH	7.88	7.89	n/a	7.79	7.83	n/a	---	---
Hardness	70.0	69.3	n/a	102.0	104.0	n/a	---	---
Aluminum	0.0256	0.0235	8.6	0.0107	0.0114	n/a	0.0030	0.015
Antimony	<0.0005	<0.0005	n/a	<0.0005	<0.0005	n/a	0.00050	0.0025
Arsenic	0.0002	0.0002	n/a	0.0105	0.0109	3.7	0.00010	0.0005
Barium	0.0224	0.0231	3.1	0.0234	0.0237	1.3	0.0010	0.005
Beryllium	<0.0001	<0.0001	n/a	<0.0001	<0.0001	n/a	0.00010	0.0005
Bismuth	<0.001	<0.001	n/a	<0.001	<0.001	n/a	0.0010	0.005
Boron	<0.05	<0.05	n/a	<0.05	<0.05	n/a	0.050	0.25
Cadmium	<0.00001	<0.00001	n/a	<0.00001	<0.00001	n/a	0.000010	0.00005
Calcium	16.2	16.0	1.2	25.4	26.1	2.7	0.050	0.25
Total Chromium	<0.001	<0.001	n/a	<0.001	<0.001	n/a	0.0010	0.005
Chromium (+6)	---	---	n/a	---	---	--	n/a	n/a
Chromium (+3)	---	---	n/a	---	---	--	n/a	n/a
Cobalt	<0.0005	<0.0005	n/a	<0.0005	<0.0005	n/a	0.00050	0.0025
Copper	<0.0005	<0.0005	n/a	0.0087	0.0090	3.4	0.00050	0.0025
Iron	0.026	0.023	n/a	0.046	0.055	n/a	0.010	0.05
Lead	<0.0002	<0.0002	n/a	<0.0002	<0.0002	n/a	0.00020	0.001
Lithium	<0.005	<0.005	n/a	<0.005	<0.005	n/a	0.0050	0.025
Magnesium	7.20	7.11	1.3	9.34	9.56	2.3	0.050	0.25
Manganese	0.0029	0.0026	n/a	0.0408	0.0528	25.6	0.0010	0.005
Mercury	<0.00001	<0.00001	n/a	<0.00001	<0.00001	n/a	0.00001	0.00005
Molybdenum	<0.001	<0.001	n/a	<0.001	<0.001	n/a	0.0010	0.005
Nickel	<0.001	<0.001	n/a	0.0013	0.0012	n/a	0.0010	0.005
Potassium	0.675	0.668	1.0	1.00	1.02	2.4	0.050	0.25
Selenium	0.0001	<0.0001	n/a	<0.0001	<0.0001	n/a	0.00010	0.0005
Silver	<0.00002	<0.00002	n/a	0.000102	0.000069	n/a	0.000020	0.0001
Sodium	4.08	4.03	1.2	4.10	4.15	1.2	0.050	0.25
Strontium	0.012	0.012	1.6	0.061	0.063	3.1	0.0010	0.005
Thallium	<0.00005	<0.00005	n/a	<0.00005	<0.00005	n/a	0.000050	0.00025
Tin	<0.005	<0.005	n/a	<0.005	<0.005	n/a	0.0050	0.025
Titanium	<0.005	<0.005	n/a	<0.005	<0.005	n/a	0.0050	0.025
Uranium	0.0004	0.0004	n/a	0.0358	0.0359	0.3	0.00010	0.0005
Vanadium	<0.005	<0.005	n/a	<0.005	<0.005	n/a	0.0050	0.025
Zinc	<0.005	<0.005	n/a	<0.005	<0.005	n/a	0.0050	0.025
Zirconium	<0.0005	<0.0005	n/a	<0.0005	<0.0005	n/a	0.00050	0.0025
		Batch Average	2.6			Batch Average	4.6	

Notes:

All results expressed as milligrams per litre unless otherwise specified
< - less than the analytical detection limit indicated
-- sample not analyzed for this parameter
mg/L - milligrams per litre
n/a - not applicable, samples below detection limits or less than five times detection limits
RPD - Relative Percent Difference
Bold - Exceeds individual RPD of 40%

TABLE B-43 (cont): DUPLICATE WATER ANALYTICAL RESULTS - TOTAL METALS (mg/L)

Sample ID	CL-5	DUP 3	RPD (%)	SW-B-2	DUP 4	RPD (%)	Method Detection Limits (mg/L)	MDL x 5
Date	31-Aug-2016	(CL-5)		01-Sep-2016	(SW-B-2)			
pH	7.94	7.93	n/a	7.89	7.98	n/a	---	---
Hardness	97.2	97.5	n/a	72	74	n/a	---	---
Aluminum	0.0426	0.0197	73.5	0.006	0.0077	n/a	0.0030	0.015
Antimony	<0.0005	<0.0005	n/a	<0.0005	<0.0005	n/a	0.00050	0.0025
Arsenic	0.0084	0.00858	2.1	0.00019	0.00016	n/a	0.00010	0.0005
Barium	0.0154	0.0147	4.7	0.023	0.0235	2.2	0.0010	0.005
Beryllium	<0.0001	<0.0001	n/a	<0.0001	<0.0001	n/a	0.00010	0.0005
Bismuth	<0.001	<0.001	n/a	<0.001	<0.001	n/a	0.0010	0.005
Boron	<0.05	<0.05	n/a	<0.05	<0.05	n/a	0.050	0.25
Cadmium	<0.00001	<0.00001	n/a	<0.00001	<0.00001	n/a	0.000010	0.00005
Calcium	25.2	24.3	3.6	16.7	17.2	2.9	0.050	0.25
Total Chromium	<0.001	<0.001	n/a	<0.001	<0.001	n/a	0.0010	0.005
Chromium (+6)	---	---	n/a	---	---	n/a	---	---
Chromium (+3)	---	---	n/a	---	---	n/a	---	---
Cobalt	<0.0005	<0.0005	n/a	<0.0005	<0.0005	n/a	0.00050	0.0025
Copper	0.00765	0.00755	1.3	<0.0005	<0.0005	n/a	0.00050	0.0025
Iron	0.076	0.023	n/a	<0.01	<0.01	n/a	0.010	0.05
Lead	<0.0002	<0.0002	n/a	<0.0002	<0.0002	n/a	0.00020	0.001
Lithium	<0.005	<0.005	n/a	<0.005	<0.005	n/a	0.0050	0.025
Magnesium	8.31	8.96	7.5	7.39	7.54	2.0	0.050	0.25
Manganese	0.0269	0.0085	104.0	<0.001	<0.001	n/a	0.0010	0.005
Mercury	<0.00001	<0.00001	n/a	<0.00001	<0.00001	n/a	0.00001	0.00005
Molybdenum	<0.001	<0.001	n/a	<0.001	<0.001	n/a	0.0010	0.005
Nickel	<0.001	<0.001	n/a	<0.001	<0.001	n/a	0.0010	0.005
Potassium	0.972	0.797	19.8	0.666	0.685	2.8	0.050	0.25
Selenium	0.00012	<0.0001	n/a	0.00024	0.00014	n/a	0.00010	0.0005
Silver	0.000087	0.000126	n/a	<0.00002	<0.00002	n/a	0.000020	0.0001
Sodium	3.74	4	6.7	4.05	4.18	3.2	0.050	0.25
Strontium	0.0547	0.0556	1.6	0.102	0.105	2.9	0.0010	0.005
Thallium	<0.00005	<0.00005	n/a	<0.00005	<0.00005	n/a	0.000050	0.00025
Tin	<0.005	<0.005	n/a	<0.005	<0.005	n/a	0.0050	0.025
Titanium	<0.005	<0.005	n/a	<0.005	<0.005	n/a	0.0050	0.025
Uranium	0.028	0.0316	12.1	0.00032	0.0003	n/a	0.00010	0.0005
Vanadium	<0.005	<0.005	n/a	<0.005	<0.005	n/a	0.0050	0.025
Zinc	<0.005	<0.005	n/a	<0.005	<0.005	n/a	0.0050	0.025
Zirconium	<0.0005	<0.0005	n/a	<0.0005	<0.0005	n/a	0.00050	0.0025
		Batch Average	21.5			Batch Average	2.7	

Notes:
All results expressed as milligrams per litre unless otherwise specified
< - less than the analytical detection limit indicated
-- sample not analyzed for this parameter
mg/L - milligrams per litre
n/a - not applicable, samples below detection limits or less than five times detection limits
RPD - Relative Percent Difference
Bold - Exceeds individual RPD of 40%

TABLE B-43 (cont): DUPLICATE WATER ANALYTICAL RESULTS - TOTAL METALS (mg/L)

Sample ID Date	A3-SW08-01 01-Sep-2016	DUP 5 (A3-SW08-01)	RPD (%)	T1 03-Sep-2016	DUP 6 (T1)	RPD (%)	Method Detection Limits (mg/L)	MDL x 5
pH	7.55	7.58	n/a	7.79	7.75	n/a	---	---
Hardness	86	82.6	n/a	69.2	73.7	n/a	---	---
Aluminum	0.0135	0.0094	n/a	0.0259	0.0322	21.7	0.0030	0.015
Antimony	<0.0005	<0.0005	n/a	<0.0005	<0.0005	n/a	0.00050	0.0025
Arsenic	0.00031	0.00038	n/a	0.00151	0.00148	2.0	0.00010	0.0005
Barium	0.0384	0.0377	1.8	0.0104	0.0111	6.5	0.0010	0.005
Beryllium	<0.0001	<0.0001	n/a	<0.001	<0.001	n/a	0.00010	0.0005
Bismuth	<0.001	<0.001	n/a	<0.0001	<0.0001	n/a	0.0010	0.005
Boron	<0.05	<0.05	n/a	<0.05	<0.05	n/a	0.050	0.25
Cadmium	<0.00001	<0.00001	n/a	<0.00001	<0.00001	n/a	0.000010	0.00005
Calcium	19	18.4	3.2	16.1	17.4	7.8	0.050	0.25
Total Chromium	<0.001	<0.001	n/a	<0.001	<0.001	n/a	0.0010	0.005
Chromium (+6)	---	---	n/a	---	---	n/a	---	---
Chromium (+3)	---	---	n/a	---	---	n/a	---	---
Cobalt	<0.0005	<0.0005	n/a	<0.0005	<0.0005	n/a	0.00050	0.0025
Copper	<0.0005	<0.0005	n/a	0.0016	0.00161	n/a	0.00050	0.0025
Iron	2.49	2.18	13.3	0.126	0.143	12.6	0.010	0.05
Lead	<0.0002	<0.0002	n/a	<0.0002	<0.0002	n/a	0.00020	0.001
Lithium	<0.005	<0.005	n/a	<0.005	<0.005	n/a	0.0050	0.025
Magnesium	9.35	8.88	5.2	7.02	7.32	4.2	0.050	0.25
Manganese	0.178	0.154	14.5	0.0156	0.0181	14.8	0.0010	0.005
Mercury	<0.00001	<0.00001	n/a	<0.00001	<0.00001	n/a	0.00001	0.00005
Molybdenum	<0.001	<0.001	n/a	<0.001	<0.001	n/a	0.0010	0.005
Nickel	<0.001	<0.001	n/a	<0.001	<0.001	n/a	0.0010	0.005
Potassium	0.833	0.8	4.0	0.93	1.04	11.2	0.050	0.25
Selenium	0.00019	0.0002	n/a	<0.0001	<0.0001	n/a	0.00010	0.0005
Silver	<0.00002	<0.00002	n/a	<0.00002	<0.00002	n/a	0.000020	0.0001
Sodium	3.85	3.82	0.8	2.67	2.84	6.2	0.050	0.25
Strontium	0.107	0.109	1.9	0.0512	0.0518	1.2	0.0010	0.005
Thallium	<0.00005	<0.00005	n/a	<0.00005	<0.00005	n/a	0.000050	0.00025
Tin	<0.005	<0.005	n/a	<0.005	<0.005	n/a	0.0050	0.025
Titanium	<0.005	<0.005	n/a	<0.005	<0.005	n/a	0.0050	0.025
Uranium	0.0002	0.0002	n/a	0.00043	0.00044	n/a	0.00010	0.0005
Vanadium	<0.005	<0.005	n/a	<0.005	<0.005	n/a	0.0050	0.025
Zinc	<0.005	0.0079	n/a	<0.005	<0.005	n/a	0.0050	0.025
Zirconium	<0.0005	<0.0005	n/a	<0.0005	<0.0005	n/a	0.00050	0.0025
		Batch Average	5.6			Batch Average	8.8	

Notes:

All results expressed as milligrams per litre unless otherwise specified
< - less than the analytical detection limit indicated
-- sample not analyzed for this parameter
mg/L - milligrams per litre
n/a - not applicable, samples below detection limits or less than five times detection limits
RPD - Relative Percent Difference
Bold - Exceeds individual RPD of 40%

TABLE B-43 (cont): DUPLICATE WATER ANALYTICAL RESULTS - TOTAL METALS (mg/L)

Sample ID Date	T16-2M 02-Sep-2016	DUP 7 (T16-2M)	RPD (%)	NX-4A 04-Sep-2016	DUP 8 (NX-4A)	RPD (%)	Method Detection Limits (mg/L)	MDL x 5
pH	7.89	7.9	n/a	7.87	7.88	n/a	---	---
Hardness	88.8	90.9	n/a	200	197	n/a	---	---
Aluminum	0.0203	0.0516	87.1	2.28	2.47	8.0	0.0030	0.015
Antimony	0.00128	0.00136	n/a	<0.0005	<0.0005	n/a	0.00050	0.0025
Arsenic	0.0685	0.0709	3.4	0.0388	0.0411	5.8	0.00010	0.0005
Barium	0.0168	0.0172	2.4	0.0905	0.0899	0.7	0.0010	0.005
Beryllium	<0.001	<0.001	n/a	0.00012	0.00011	n/a	0.00010	0.0005
Bismuth	<0.0001	<0.0001	n/a	<0.001	<0.001	n/a	0.0010	0.005
Boron	<0.05	<0.05	n/a	0.062	0.062	n/a	0.050	0.25
Cadmium	<0.00001	<0.00001	n/a	0.000353	0.000283	22.0	0.000010	0.00005
Calcium	27.4	28.2	2.9	61.3	59.4	3.1	0.050	0.25
Total Chromium	<0.001	<0.001	n/a	0.0039	0.0044	n/a	0.0010	0.005
Chromium (+6)	---	---	n/a	---	---	n/a	---	---
Chromium (+3)	---	---	n/a	---	---	n/a	---	---
Cobalt	<0.0005	<0.0005	n/a	0.00869	0.0086	1.0	0.00050	0.0025
Copper	0.0073	0.00775	6.0	0.0084	0.00794	5.6	0.00050	0.0025
Iron	0.03	0.027	n/a	5	5.26	5.1	0.010	0.05
Lead	<0.0002	<0.0002	n/a	0.00656	0.00617	6.1	0.00020	0.001
Lithium	0.0094	0.0097	n/a	0.0118	0.0121	n/a	0.0050	0.025
Magnesium	4.94	4.99	1.0	11.4	11.8	3.4	0.050	0.25
Manganese	0.0048	0.005	n/a	3.61	3.59	0.6	0.0010	0.005
Mercury	<0.00001	<0.00001	n/a	0.000017	<0.00001	n/a	0.00001	0.00005
Molybdenum	0.0025	0.0025	n/a	0.0075	0.009	18.2	0.0010	0.005
Nickel	0.0042	0.0041	n/a	0.0084	0.0083	1.2	0.0010	0.005
Potassium	2.28	2.39	4.7	2.01	2.02	0.5	0.050	0.25
Selenium	<0.0001	<0.0001	n/a	<0.0001	0.00012	n/a	0.00010	0.0005
Silver	<0.00002	<0.00002	n/a	0.000023	0.000024	n/a	0.000020	0.0001
Sodium	8.63	8.92	3.3	12.5	13.2	5.4	0.050	0.25
Strontium	0.0834	0.0852	2.1	0.224	0.224	0.0	0.0010	0.005
Thallium	<0.00005	<0.00005	n/a	<0.00005	<0.00005	n/a	0.000050	0.00025
Tin	<0.005	<0.005	n/a	<0.005	<0.005	n/a	0.0050	0.025
Titanium	<0.005	<0.005	n/a	0.0993	0.108	8.4	0.0050	0.025
Uranium	0.00257	0.00263	2.3	0.00416	0.00395	5.2	0.00010	0.0005
Vanadium	<0.005	<0.005	n/a	0.0055	0.0058	n/a	0.0050	0.025
Zinc	<0.005	<0.005	n/a	0.327	0.31	5.3	0.0050	0.025
Zirconium	<0.0005	<0.0005	n/a	0.00078	0.00062	n/a	0.00050	0.0025
Batch Average			11.5	Batch Average			5.6	

Notes:

All results expressed as milligrams per litre unless otherwise specified
< - less than the analytical detection limit indicated
-- sample not analyzed for this parameter
mg/L - milligrams per litre
n/a - not applicable, samples below detection limits or less than five times detection limits
RPD - Relative Percent Difference
Bold - Exceeds individual RPD of 40%

TABLE B-43 (cont): DUPLICATE WATER ANALYTICAL RESULTS - TOTAL METALS (mg/L)

Sample ID Date	NO-6 05-Sep-2016	DUP 9 (NO-6)	RPD (%)	SM-1 04-Sep-2016	DUP 10 (SM-1)	RPD (%)	Method Detection Limits (mg/L)	MDL x 5
pH	7.64	7.72	n/a	7.73	7.75	n/a	---	---
Hardness	68.9	76.8	n/a	51.8	52.8	n/a	---	---
Aluminum	0.0551	0.0306	57.2	0.019	0.028	38.3	0.0030	0.015
Antimony	<0.0005	<0.0005	n/a	<0.0005	<0.0005	n/a	0.00050	0.0025
Arsenic	0.00155	0.00222	35.5	0.00054	0.00065	18.5	0.00010	0.0005
Barium	0.0118	0.0122	3.3	0.0069	0.0068	1.5	0.0010	0.005
Beryllium	<0.0001	<0.0001	n/a	<0.0001	<0.0001	n/a	0.00010	0.0005
Bismuth	<0.001	<0.001	n/a	<0.001	<0.001	n/a	0.0010	0.005
Boron	<0.05	<0.05	n/a	<0.05	<0.05	n/a	0.050	0.25
Cadmium	0.000012	0.000011	n/a	0.000031	0.000042	n/a	0.000010	0.00005
Calcium	17	18.9	10.6	14	14.6	4.2	0.050	0.25
Total Chromium	<0.001	<0.001	n/a	<0.001	<0.001	n/a	0.0010	0.005
Chromium (+6)	---	---	n/a	---	---	n/a	---	---
Chromium (+3)	---	---	n/a	---	---	n/a	---	---
Cobalt	<0.0005	0.00064	n/a	<0.0005	<0.0005	n/a	0.00050	0.0025
Copper	0.0018	0.00162	n/a	0.00157	0.00173	n/a	0.00050	0.0025
Iron	0.199	0.257	25.4	0.035	0.054	n/a	0.010	0.05
Lead	0.00107	0.00126	16.3	<0.0002	0.00029	n/a	0.00020	0.001
Lithium	<0.005	<0.005	n/a	<0.005	<0.005	n/a	0.0050	0.025
Magnesium	6.43	7.22	11.6	4.07	3.96	2.7	0.050	0.25
Manganese	0.0236	0.0343	37.0	0.015	0.0182	19.3	0.0010	0.005
Mercury	<0.00001	<0.00001	n/a	<0.00001	<0.00001	n/a	0.00001	0.00005
Molybdenum	<0.001	<0.001	n/a	0.0011	0.0011	n/a	0.0010	0.005
Nickel	<0.001	<0.001	n/a	<0.001	<0.001	n/a	0.0010	0.005
Potassium	0.942	1.11	16.4	0.753	0.751	0.3	0.050	0.25
Selenium	<0.0001	<0.0001	n/a	<0.0001	<0.0001	n/a	0.00010	0.0005
Silver	<0.00002	<0.00002	n/a	<0.00002	<0.00002	n/a	0.000020	0.0001
Sodium	2.42	2.66	9.4	2.63	2.7	2.6	0.050	0.25
Strontium	0.0513	0.0586	13.3	0.0265	0.0267	0.8	0.0010	0.005
Thallium	<0.00005	<0.00005	n/a	<0.00005	<0.00005	n/a	0.000050	0.00025
Tin	<0.005	<0.005	n/a	<0.005	<0.005	n/a	0.0050	0.025
Titanium	<0.005	<0.005	n/a	<0.005	<0.005	n/a	0.0050	0.025
Uranium	0.0005	0.00064	24.6	0.00034	0.00034	n/a	0.00010	0.0005
Vanadium	<0.005	<0.005	n/a	<0.005	<0.005	n/a	0.0050	0.025
Zinc	0.0135	<0.005	n/a	0.0226	0.0419	n/a	0.0050	0.025
Zirconium	<0.0005	<0.0005	n/a	<0.0005	<0.0005	n/a	0.00050	0.0025
		Batch Average	21.7			Batch Average	9.8	

Notes:
All results expressed as milligrams per litre unless otherwise specified
< - less than the analytical detection limit indicated
-- sample not analyzed for this parameter
mg/L - milligrams per litre
n/a - not applicable, samples below detection limits or less than five times detection limits
RPD - Relative Percent Difference
Bold - Exceeds individual RPD of 40%

TABLE B-44: DUPLICATE WATER ANALYTICAL RESULTS - DISSOLVED METALS (mg/L)

Sample ID	CL-5	DUP 3	RPD (%)	SW-B-2	DUP 4	RPD (%)	Method Detection Limits (mg/L)	MDL x 5
Date	31-Aug-2016	(CL-5)		01-Sep-2016	(SW-B-2)			
pH	7.94	7.93	n/a	7.89	7.98	n/a	---	---
Hardness	97.2	97.5	n/a	72	74	n/a	---	---
Aluminum	0.0064	0.01	n/a	<0.003	0.0043	n/a	0.0030	0.015
Antimony	<0.0005	<0.0005	n/a	<0.0005	<0.0005	n/a	0.00050	0.0025
Arsenic	0.0081	0.00795	1.9	0.00019	0.00021	n/a	0.00010	0.0005
Barium	0.015	0.0142	5.5	0.0236	0.0235	0.4	0.0010	0.005
Beryllium	<0.0001	<0.0001	n/a	<0.0001	<0.0001	n/a	0.00010	0.0005
Bismuth	<0.001	<0.001	n/a	<0.001	<0.001	n/a	0.0010	0.005
Boron	<0.05	<0.05	n/a	<0.05	<0.05	n/a	0.050	0.25
Cadmium	24.2	23.5	2.9	17.2	16.7	2.9	0.000010	0.00005
Calcium	<0.00001	<0.00001	n/a	<0.00001	<0.00001	n/a	0.050	0.25
Total Chromium	<0.001	<0.001	n/a	<0.001	<0.001	n/a	0.0010	0.005
Chromium (+6)	---	---	n/a	---	---	n/a	---	---
Chromium (+3)	---	---	n/a	---	---	n/a	---	---
Cobalt	<0.0005	<0.0005	n/a	<0.0005	<0.0005	n/a	0.00050	0.0025
Copper	0.00695	0.0075	7.6	0.00027	0.00023	n/a	0.00020	0.001
Iron	0.0071	0.0157	n/a	<0.005	<0.005	n/a	0.005	0.025
Lead	<0.0002	<0.0002	n/a	<0.0002	<0.0002	n/a	0.00020	0.001
Lithium	<0.005	<0.005	n/a	<0.005	<0.005	n/a	0.0050	0.025
Magnesium	8.99	8.63	4.1	7.43	7.14	4.0	0.050	0.25
Manganese	0.0017	0.0014	n/a	<0.001	<0.001	n/a	0.0010	0.005
Mercury	<0.00001	<0.00001	n/a	<0.00001	<0.00001	n/a	0.00001	0.00005
Molybdenum	<0.001	<0.001	n/a	<0.001	<0.001	n/a	0.0010	0.005
Nickel	<0.001	<0.001	n/a	<0.001	<0.001	n/a	0.0010	0.005
Potassium	0.88	0.855	2.9	0.698	0.698	0.0	0.050	0.25
Selenium	<0.0001	0.00015	n/a	<0.0001	<0.0001	n/a	0.00010	0.0005
Silver	<0.00002	<0.00002	n/a	<0.00002	<0.00002	n/a	0.000020	0.0001
Sodium	4	4.01	0.2	4.12	4	3.0	0.050	0.25
Strontium	0.0587	0.0578	1.5	0.109	0.109	0.0	0.0010	0.005
Thallium	<0.00005	<0.00005	n/a	<0.00005	<0.00005	n/a	0.000050	0.00025
Tin	<0.005	<0.005	n/a	<0.005	<0.005	n/a	0.0050	0.025
Titanium	<0.005	<0.005	n/a	<0.005	<0.005	n/a	0.0050	0.025
Uranium	0.0301	0.0302	0.3	0.0003	0.00032	n/a	0.00010	0.0005
Vanadium	<0.005	<0.005	n/a	<0.005	<0.005	n/a	0.0050	0.025
Zinc	<0.005	<0.005	n/a	<0.005	<0.005	n/a	0.0050	0.025
Zirconium	<0.0005	<0.0005	n/a	<0.0005	<0.0005	n/a	0.00050	0.0025
Batch Average			3.0	Batch Average			1.7	
			0.2				0.0	
			7.6				4.0	

Notes:

All results expressed as milligrams per litre unless otherwise specified

< - less than the analytical detection limit indicated

-- sample not analyzed for this parameter

mg/L - milligrams per litre

n/a - not applicable, samples below detection limits or less than five times detection limits

RPD - Relative Percent Difference

Bold - Exceeds individual RPD of 40%

TABLE B-44 (cont): DUPLICATE WATER ANALYTICAL RESULTS - DISSOLVED METALS (mg/L)

Sample ID	T16-2M	DUP 7	RPD (%)	Method Detection Limits (mg/L)	MDL x 5
Date	02-Sep-2016	02-Sep-2016			
pH	7.89	7.9	n/a	---	---
Hardness	88.8	90.9	n/a	---	---
Aluminum	0.0104	0.0123	n/a	0.0030	0.015
Antimony	0.00139	0.00139	n/a	0.00050	0.0025
Arsenic	0.07	0.0707	1.0	0.00010	0.0005
Barium	0.0163	0.0165	1.2	0.0010	0.005
Beryllium	<0.0001	<0.0001	n/a	0.00010	0.0005
Bismuth	<0.001	<0.001	n/a	0.0010	0.005
Boron	<0.05	<0.05	n/a	0.050	0.25
Cadmium	<0.00001	<0.00001	n/a	0.000010	0.00005
Calcium	25.6	27.7	7.9	0.050	0.25
Total Chromium	<0.001	<0.001	n/a	0.0010	0.005
Chromium (+6)	---	---	n/a	---	---
Chromium (+3)	---	---	n/a	---	---
Cobalt	<0.0005	<0.0005	n/a	0.00050	0.0025
Copper	0.00727	0.00767	5.4	0.00020	0.001
Iron	0.010	0.0102	n/a	0.005	0.025
Lead	<0.0002	<0.0002	n/a	0.00020	0.001
Lithium	0.0091	0.0095	n/a	0.0050	0.025
Magnesium	4.82	5.16	6.8	0.050	0.25
Manganese	<0.001	<0.001	n/a	0.0010	0.005
Mercury	<0.00001	<0.00001	n/a	0.00001	0.00005
Molybdenum	0.0027	0.0023	n/a	0.0010	0.005
Nickel	0.0037	0.004	n/a	0.0010	0.005
Potassium	2.26	2.52	10.9	0.050	0.25
Selenium	<0.0001	<0.0001	n/a	0.00010	0.0005
Silver	<0.00002	<0.00002	n/a	0.000020	0.0001
Sodium	8.78	9.34	6.2	0.050	0.25
Strontium	0.0818	0.0835	2.1	0.0010	0.005
Thallium	<0.00005	<0.00005	n/a	0.000050	0.00025
Tin	<0.005	<0.005	n/a	0.0050	0.025
Titanium	<0.005	<0.005	n/a	0.0050	0.025
Uranium	0.00254	0.00227	11.2	0.00010	0.0005
Vanadium	<0.005	<0.005	n/a	0.0050	0.025
Zinc	<0.005	<0.005	n/a	0.0050	0.025
Zirconium	<0.0005	<0.0005	n/a	0.00050	0.0025
Batch Average			5.8		

1.0
11.2

Notes:

All results expressed as milligrams per litre unless otherwise specified

< - less than the analytical detection limit indicated

-- sample not analyzed for this parameter

mg/L - milligrams per litre

n/a - not applicable, samples below detection limits or less than five times detection limits

RPD - Relative Percent Difference

Bold - Exceeds individual RPD of 40%

TABLE B-45: DUPLICATE WATER ANALYTICAL RESULTS - BTEX AND F1 - F4 (mg/L)

Sample ID Date	ELB-1-GBL 30-Aug-2016	DUP 1 (ELB-1-GBL)	RPD (%)	SW-B-2 01-Sep-2016	DUP 4 (SW-B-2)	RPD (%)	Method Detection Limits (mg/L)	MDL x 5
Benzene	<0.0004	<0.0004	n/a	<0.0004	<0.0004	n/a	0.0004	0.002
Toluene	<0.0004	<0.0004	n/a	<0.0004	<0.0004	n/a	0.0004	0.002
Ethylbenzene	<0.0004	<0.0004	n/a	<0.0004	<0.0004	n/a	0.0004	0.002
Xylenes	<0.0008	<0.0008	n/a	<0.0008	<0.0008	n/a	0.0008	0.004
F1-BTEX (C6-C10)	< 0.10	< 0.10	n/a	< 0.10	< 0.10	n/a	0.1	0.5
F1 (C6-C10)	< 0.10	< 0.10	n/a	< 0.10	< 0.10	n/a	0.1	0.5
F2 (C10-C16)	< 0.10	< 0.10	n/a	< 0.10	< 0.10	n/a	0.1	0.5
F3 (C16-C34)	< 0.20	< 0.20	n/a	< 0.20	< 0.20	n/a	0.2	1
F4 (C34-C50)	< 0.20	< 0.20	n/a	< 0.20	< 0.20	n/a	0.2	1

Sample ID Date	A3-SW08-01 01-Sep-2016	DUP 5 (A3-SW08-01)	RPD (%)	NO-6 05-Sep-2016	DUP 9 (NO-6)	RPD (%)	Method Detection Limits (mg/L)	MDL x 5
Benzene	<0.0004	<0.0004	n/a	<0.0004	<0.0004	n/a	0.0004	0.002
Toluene	<0.0004	<0.0004	n/a	<0.0004	<0.0004	n/a	0.0004	0.002
Ethylbenzene	<0.0004	<0.0004	n/a	<0.0004	<0.0004	n/a	0.0004	0.002
Xylenes	<0.0008	<0.0008	n/a	<0.0008	<0.0008	n/a	0.0008	0.004
F1-BTEX (C6-C10)	<0.1	<0.1	n/a	<0.1	<0.1	n/a	0.1	0.5
F1 (C6-C10)	<0.1	<0.1	n/a	<0.1	<0.1	n/a	0.1	0.5
F2 (C10-C16)	< 0.10	< 0.10	n/a	< 0.10	< 0.10	n/a	0.1	0.5
F3 (C16-C34)	< 0.20	< 0.20	n/a	< 0.20	< 0.20	n/a	0.2	1
F4 (C34-C50)	< 0.20	< 0.20	n/a	< 0.20	< 0.20	n/a	0.2	1

Notes:

All results expressed as milligrams per litre unless otherwise specified

< - less than the analytical detection limit indicated

-- sample not analyzed for this parameter

mg/L - milligrams per litre

n/a - not applicable, samples below detection limits or less than five times detection limits

RPD - Relative Percent Difference

Bold - Exceeds individual RPD of 40%

TABLE B-46: DUPLICATE WATER ANALYTICAL RESULTS - OTHER PARAMETERS (mg/L)

Sample ID Date	ELB-1-GBL 30-Aug-2016	DUP 1 (ELB-1-GBL)	RPD (%)	CL-3 31-Aug-2016	DUP 2 (CL-3)	RPD (%)	Method Detection Limits (mg/L)	MDL x 5
pH	7.88	7.89	n/a	7.79	7.83	n/a	---	---
Conductivity (uS/cm)	160	160	n/a	210	210	n/a	---	---
Total Ammonia	< 0.0067	0.098	n/a	0.028	0.039	n/a	0.0067	0.0335
Alkalinity - Total (CaCO ₃)	57	58	1.7	100	100	0	0.50	2.5
Alkalinity - Bicarbonate (CaCO ₃)	69	71	2.9	130	120	8	0.50	2.5
Alkalinity - Carbonate (CaCO ₃)	< 0.50	< 0.50	n/a	< 0.50	< 0.50	n/a	0.50	2.5
Alkalinity - Hydroxide (CaCO ₃)	< 0.50	< 0.50	n/a	< 0.50	< 0.50	n/a	0.50	2.5
Nitrite Nitrogen	<0.010	<0.010	n/a	< 0.010	< 0.010	n/a	0.010	0.05
Nitrate Nitrogen	0.15	0.15	0	< 0.010	< 0.010	n/a	0.010	0.05
Chloride	4.6	4.8	n/a	< 1.0	< 1.0	n/a	1.0	5
Sulphate	17	17	0	6.8	6.8	0	1.0	5
Total Phosphorus	0.004	0.007	n/a	0.005	< 0.0030	n/a	0.0030	0.015
Dissolved Phosphorus	0.003	0.003	n/a	0.004	0.004	n/a	0.0030	0.015
Dissolved Organic Carbon	3	1.6	n/a	8.4	12	35.3	0.50	2.5
Total Dissolved Solids	92	100	8.3	140	120	15.4	10	50
Batch Average			2.6	Batch Average			11.7	
			0.0				0.0	
			8.3				35.3	

Notes:

mg/L - milligrams per litre

uS/cm - microsiemens per centimeter

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard/guideline listed

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-46 (cont): DUPLICATE WATER ANALYTICAL RESULTS - OTHER PARAMETERS (mg/L)

Sample ID Date	CL-5 31-Aug-2016	DUP 3 (CL-5)	RPD (%)	SW-B-2 01-Sep-2016	DUP 4 (SW-B-2)	RPD (%)	Method Detection Limits (mg/L)	MDL x 5
pH	7.94	7.93	n/a	7.89	7.98	n/a	---	---
Conductivity (uS/cm)	200	200	n/a	160	170	n/a	---	---
Total Ammonia	0.038	0.025	n/a	0.018	0.022	n/a	0.007	0.0335
Alkalinity - Total (CaCO ₃)	100	97	3.0	59	58	1.7	0.50	2.5
Alkalinity - Bicarbonate (CaCO ₃)	120	120	0.0	72	71	1.4	0.50	2.5
Alkalinity - Carbonate (CaCO ₃)	< 0.50	< 0.50	n/a	< 0.50	< 0.50	n/a	0.50	2.5
Alkalinity - Hydroxide (CaCO ₃)	< 0.50	< 0.50	n/a	< 0.50	< 0.50	n/a	0.50	2.5
Nitrite Nitrogen	< 0.010	< 0.010	n/a	<0.010	<0.010	n/a	0.010	0.05
Nitrate Nitrogen	0.018	0.016	n/a	0.11	0.12	n/a	0.010	0.05
Chloride	< 1.0	< 1.0	n/a	4.5	4.4	n/a	1.0	5
Sulphate	6.3	6.3	0.0	17	17	0.0	1.0	5
Total Phosphorus	0.003	0.003	n/a	0.003	< 0.0030	n/a	0.0030	0.015
Dissolved Phosphorus	0.003	0.005	n/a	< 0.0030	< 0.0030	n/a	0.0030	0.015
Dissolved Organic Carbon	8.2	9.4	13.6	3.1	3	3.3	0.50	2.5
Total Dissolved Solids	120	130	8.0	80	68	16.2	10	50
Batch Average			4.9	Batch Average			4.5	
			0.0 13.6				0.0 16.2	

Notes:

mg/L - milligrams per litre

uS/cm - microsiemens per centimeter

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard/guideline listed

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-46 (cont): DUPLICATE WATER ANALYTICAL RESULTS - OTHER PARAMETERS (mg/L)

Sample ID Date	A3-SW08-01 01-Sep-2016	DUP 5 (A3-SW08-01)	RPD (%)	T1 03-Sep-2016	DUP 6 (T1)	RPD (%)	Method Detection Limits (mg/L)	MDL x 5
pH	7.55	7.58	n/a	7.79	7.75	n/a	---	---
Conductivity (uS/cm)	180	190	n/a	140	150	n/a	---	---
Total Ammonia	0.038	0.039	2.6	0.017	0.021	n/a	0.0067	0.0335
Alkalinity - Total (CaCO ₃)	76	79	3.9	59	56	5.2	0.50	2.5
Alkalinity - Bicarbonate (CaCO ₃)	93	96	3.2	72	68	5.7	0.50	2.5
Alkalinity - Carbonate (CaCO ₃)	< 0.50	< 0.50	n/a	< 0.50	< 0.50	n/a	0.50	2.5
Alkalinity - Hydroxide (CaCO ₃)	< 0.50	< 0.50	n/a	< 0.50	< 0.50	n/a	0.50	2.5
Nitrite Nitrogen	<0.010	<0.010	n/a	<0.010	<0.010	n/a	0.010	0.05
Nitrate Nitrogen	0.036	0.031	n/a	<0.010	<0.010	n/a	0.010	0.05
Chloride	4	4	n/a	2	2.1	n/a	1.0	5
Sulphate	12	12	0.0	14	14	0.0	1.0	5
Total Phosphorus	0.017	0.013	n/a	0.003	0.004	n/a	0.0030	0.015
Dissolved Phosphorus	0.003	0.003	n/a	0.006	0.005	n/a	0.0030	0.015
Dissolved Organic Carbon	6.7	4.6	37.2	6.9	6.5	6.0	0.50	2.5
Total Dissolved Solids	88	84	4.7	100	110	9.5	10	50
Batch Average			8.6	Batch Average			5.3	
			0.0 37.2				0.0 9.5	

Notes:

mg/L - milligrams per litre

uS/cm - microsiemens per centimeter

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard/guideline listed

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-46 (cont): DUPLICATE WATER ANALYTICAL RESULTS - OTHER PARAMETERS (mg/L)

Sample ID Date	T16-2M 02-Sep-2016	DUP 7 (T16-2M)	RPD (%)	NX-4A 04-Sep-2016	DUP 8 (NX-4A)	RPD (%)	Method Detection Limits (mg/L)	MDL x 5
pH	7.89	7.9	n/a	7.87	7.88	n/a	---	---
Conductivity (uS/cm)	210	210	n/a	400	400	n/a	---	---
Total Ammonia	0.019	0.018	n/a	0.036	0.026	n/a	0.0067	0.0335
Alkalinity - Total (CaCO ₃)	63	64	1.6	150	150	0.0	0.50	2.5
Alkalinity - Bicarbonate (CaCO ₃)	77	78	1.3	190	180	5.4	0.50	2.5
Alkalinity - Carbonate (CaCO ₃)	< 0.50	< 0.50	n/a	< 0.50	< 0.50	n/a	0.50	2.5
Alkalinity - Hydroxide (CaCO ₃)	< 0.50	< 0.50	n/a	< 0.50	< 0.50	n/a	0.50	2.5
Nitrite Nitrogen	<0.010	<0.010	n/a	<0.010	<0.010	n/a	0.010	0.05
Nitrate Nitrogen	<0.010	<0.010	n/a	<0.010	<0.010	n/a	0.010	0.05
Chloride	14	14	0.0	1.3	1.6	n/a	1.0	5
Sulphate	18	18	0.0	52	59	12.6	1.0	5
Total Phosphorus	0.005	0.006	n/a	0.007	0.004	n/a	0.0030	0.015
Dissolved Phosphorus	0.007	0.007	n/a	< 0.0030	< 0.0030	n/a	0.0030	0.015
Dissolved Organic Carbon	12	12	0.0	8.6	9.3	7.8	0.50	2.5
Total Dissolved Solids	140	150	6.9	220	200	9.5	10	50
Batch Average			1.6	Batch Average			7.1	
			0.0 6.9				0.0 12.6	

Notes:

mg/L - milligrams per litre

uS/cm - microsiemens per centimeter

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard/guideline listed

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-46 (cont): DUPLICATE WATER ANALYTICAL RESULTS - OTHER PARAMETERS (mg/L)

Sample ID Date	NO-6 05-Sep-2016	DUP 9 (NO-6)	RPD (%)	SM-1 04-Sep-2016	DUP 10 (SM-1)	RPD (%)	Method Detection Limits (mg/L)	MDL x 5
pH	7.64	7.72	n/a	7.73	7.75	n/a	---	---
Conductivity (uS/cm)	170	160	n/a	110	110	n/a	---	---
Total Ammonia	0.89	0.026	n/a	0.02	0.021	n/a	0.0067	0.0335
Alkalinity - Total (CaCO ₃)	68	58	15.9	43	40	7.2	0.50	2.5
Alkalinity - Bicarbonate (CaCO ₃)	83	71	15.6	52	49	5.9	0.50	2.5
Alkalinity - Carbonate (CaCO ₃)	< 0.50	< 0.50	n/a	< 0.50	< 0.50	n/a	0.50	2.5
Alkalinity - Hydroxide (CaCO ₃)	< 0.50	< 0.50	n/a	< 0.50	< 0.50	n/a	0.50	2.5
Nitrite Nitrogen	< 0.033	< 0.033	n/a	<0.010	<0.010	n/a	0.010	0.05
Nitrate Nitrogen	0.049	< 0.044	n/a	<0.010	<0.010	n/a	0.010	0.05
Chloride	2.6	2.3	n/a	< 1.0	< 1.0	n/a	1.0	5
Sulphate	15	16	6.5	15	15	0.0	1.0	5
Total Phosphorus	0.006	0.005	n/a	0.003	0.003	n/a	0.0030	0.015
Dissolved Phosphorus	< 0.0030	< 0.0030	n/a	< 0.0030	< 0.0030	n/a	0.0030	0.015
Dissolved Organic Carbon	4.4	5.7	25.7	5.9	5.4	8.8	0.50	2.5
Total Dissolved Solids	80	76	5.1	12	28	n/a	10	50
Batch Average			13.8	Batch Average			5.5	
			5.1 25.7				0.0 8.8	

Notes:

mg/L - milligrams per litre

uS/cm - microsiemens per centimeter

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard/guideline listed

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-47: DUPLICATE WATER ANALYTICAL RESULTS - RADIONUCLIDES (Bq/L)

Sample ID Date	SW-B-2 01-Sep-2016	DUP 4 (SW-B-2)	RPD (%)	A3-SW08-01 01-Sep-2016	DUP 5 (A3-SW08-01)	RPD (%)	Method Detection Limits (mg/L)	MDL x 5
Gross Alpha	<0.10	<0.10	n/a	0.13	<0.10	n/a	0.1	0.5
Gross Beta	<0.10	<0.10	n/a	<0.10	<0.10	n/a	0.1	0.5
Lead-210	--	--	n/a	--	--	n/a	--	--
Radium-226	--	--	n/a	--	--	n/a	--	--

Notes:

All results expressed as Bq/L unless otherwise specified

< - less than the analytical detection limit indicated

-- sample not analyzed for this parameter

Bq/L - becquerel per litre

n/a - not applicable, samples below detection limits or less than five times detection limits

RPD - Relative Percent Difference

Bold - Exceeds individual RPD of 40%

TABLE B-48: FIELD BLANK WATER ANALYTICAL RESULTS - TOTAL METALS (mg/L)

Sample ID	EL BONANZA (DUP A)	CONTACT LAKE (DUP B)	SAWMILL BAY (DUP C)	TERRA MINE (DUP D)	NOREX (DUP E)	NORTHRIM (DUP F)	SMALLWOOD (DUP G)	
Date	30-Aug-2016	31-Aug-2016	01-Sep-2016	03-Sep-2016	04-Sep-2016	5-Sep-16	04-Sep-2016	CCME AFW
pH	4.89	4.73	4.98	4.82	5.10	4.80	4.76	ns
Hardness	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Aluminum	0.0046	0.0063	0.0060	<0.003	<0.003	<0.003	<0.003	0.005@pH<6.5 0.1@pH>=6.5
Antimony	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	ns
Arsenic	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.005
Barium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Beryllium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	ns
Bismuth	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Boron	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.5
Cadmium	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.00009 Long term concentration
Calcium	0.082	0.092	0.094	0.098	0.135	0.103	0.121	ns
Total Chromium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Chromium (+6)	---	---	---	---	---	< 0.0010	---	0.001
Chromium (+3)	---	---	---	---	---	---	---	0.0089
Cobalt	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	ns
Copper	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.002@H>=0<120 0.003@H>=120<180 0.004@H>=180
Iron	<0.01	<0.01	<0.01	<0.01	<0.01	0.035	<0.01	0.3
Lead	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.001@H>=0<60 0.002@H>=60<120 0.004@H>=120<180 0.007@H>=180
Lithium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Magnesium	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	ns
Manganese	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Mercury	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000026
Molybdenum	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.073
Nickel	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.025@H>=0<60 0.065@H>=60<120 0.11@H>=120<180 0.15@H>=180
Potassium	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	ns
Selenium	<0.0001	<0.0001	0.00011	<0.0001	<0.0001	<0.0001	<0.0001	0.001
Silver	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	0.00025
Sodium	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	ns
Strontium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Thallium	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.0008
Tin	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Titanium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Uranium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.015
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Zinc	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.03
Zirconium	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	ns

Notes:

mg/L - milligrams per litre

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

ns - no standard/guideline listed

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-49: FIELD BLANK WATER ANALYTICAL RESULTS - OTHER PARAMETERS (mg/L)

Sample ID	EL BONANZA (DUP A)	CONTACT LAKE (DUP B)	SAWMILL BAY (DUP C)	TERRA MINE (DUP D)	NOREX (DUP E)	NORTHRIM (DUP F)	SMALLWOOD (DUP G)	
Date	30-Aug-2016	31-Aug-2016	01-Sep-2016	03-Sep-2016	04-Sep-2016	05-Sep-2016	04-Sep-2016	CCME AFW
pH	4.89	4.73	4.98	4.82	5.10	4.80	4.76	ns
Conductivity (uS/cm)	<1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.0	< 1.0	ns
Ammonia	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	0.019
Alkalinity - Total (CaCO3)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Alkalinity - Bicarbonate (CaCO3)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Alkalinity - Carbonate (CaCO3)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Alkalinity - Hydroxide (CaCO3)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Nitrite Nitrogen	<0.010	< 0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.06
Nitrate Nitrogen	<0.010	< 0.010	<0.010	<0.010	<0.010	<0.010	<0.010	13
Chloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	120
Sulphate	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ns
Total Phosphorus	0.0030	< 0.0030	< 0.0030	< 0.0030	< 0.0030	< 0.0030	< 0.0030	ns
Dissolved Phosphorus	0.0030	< 0.0030	< 0.0030	< 0.0030	< 0.0030	< 0.0030	< 0.0030	ns
Dissolved Organic Carbon	1.2	1.6	< 0.50	1.0	2.2	0.57	< 0.50	ns
TDS	<10	< 10	< 10	< 10	< 10	< 10	< 10	ns

Notes:
mg/L - milligrams per litre
ug/L - micrograms per litre
uS/cm - microsiemens per centimeter
< - less than analytical detection limit indicated
'---' - sample not analyzed for parameter indicated
ns - no standard/guideline listed
See laboratory report for detection limits, testing protocols and QA/QC procedures.
Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-50: FIELD BLANK WATER ANALYTICAL RESULTS - BTEX AND F1 - F4 (mg/L)

Sample ID	NOREX (DUP E)	NORTHRIM (DUP F)	
Date	04-Sep-2016	5-Sep-16	CCME AFW
Benzene	<0.0004	<0.0004	0.37
Toluene	<0.0004	<0.0004	0.002
Ethylbenzene	<0.0004	<0.0004	0.09
Xylenes	<0.0008	<0.0008	ns
F1-BTEX (C6-C10)	<0.1	<0.1	ns
F1 (C6-C10)	<0.1	<0.1	ns
F2 (C10-C16)	< 0.10	< 0.10	ns
F3 (C16-C34)	< 0.20	< 0.20	ns
F4 (C34-C50)	< 0.20	< 0.20	ns

Notes:

mg/L - all samples in milligrams per litre unless otherwise indicated

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

N/A - not applicable

ns - no standard/guideline listed

See laboratory report for detection limits, testing protocols and QA/QC procedures.

TABLE B-51: FIELD BLANK WATER ANALYTICAL RESULTS - RADIONUCLIDES (Bq/L)

Sample ID	CONTACT LAKE (DUP B)	SAWMILL BAY (DUP C)	HEALTH CANADA
Date	31-Aug-16	01-Sep-2016	GUIDELINE
Gross Alpha	<0.10	<0.10	ns
Gross Beta	<0.10	<0.10	ns
Lead-210	--	--	0.2
Radium-226	--	--	0.5

Notes:

Bq/L - becquerel per litre

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

N/A - not applicable

ns - no standard/guideline listed

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds Health Canada (2014) Guidelines for Canadian Drinking Water Quality

TABLE B-52: TRIP BLANK WATER ANALYTICAL RESULTS - TOTAL METALS (mg/L)

Sample ID	EL BONANZA	CONTACT LAKE	SAWMILL BAY	TERRA MINE	NOREX	NORTHRIM	SMALLWOOD	CCME AFW
pH	4.71	4.72	4.83	4.66	4.94	4.93	4.77	ns
Hardness	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Aluminum	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.005@pH<6.5 0.1@pH>=6.5
Antimony	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	ns
Arsenic	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.005
Barium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Beryllium	<0.0001	<0.0001	<0.0001	<0.001	<0.001	<0.0001	<0.0001	ns
Bismuth	<0.001	<0.001	<0.001	<0.0001	<0.0001	<0.001	<0.001	ns
Boron	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.5
Cadmium	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.00009 Long term concentration
Calcium	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	0.053	< 0.050	ns
Total Chromium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Chromium (+6)	---	---	---	---	---	---	---	0.001
Chromium (+3)	---	---	---	---	---	---	---	0.0089
Cobalt	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	ns
Copper	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.002@H>=0<120 0.003@H>=120<180 0.004@H>=180
Iron	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.3
Lead	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.001@H>=0<60 0.002@H>=60<120 0.004@H>=120<180 0.007@H>=180
Lithium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Magnesium	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	ns
Manganese	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Mercury	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000026
Molybdenum	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.073
Nickel	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.025@H>=0<60 0.065@H>=60<120 0.11@H>=120<180 0.15@H>=180
Potassium	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	ns
Selenium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.001
Silver	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	0.00025
Sodium	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	ns
Strontium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	ns
Thallium	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.0008
Tin	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Titanium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Uranium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.015
Vanadium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	ns
Zinc	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.03
Zirconium	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	ns

Notes:
mg/L - milligrams per litre
< - less than analytical detection limit indicated
'---' - sample not analyzed for parameter indicated
ns - no standard/guideline listed
See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-53: TRAVEL BLANK WATER ANALYTICAL RESULTS - OTHER PARAMETERS (mg/L)

Sample ID	EL BONANZA	CONTACT LAKE	SAWMILL BAY	TERRA MINE	NOREX	NORTHRIM	SMALLWOOD	CCME AFW
pH	4.71	4.72	4.83	4.66	4.94	4.93	4.77	ns
Conductivity (uS/cm)	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ns
Ammonia	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	0.019
Alkalinity - Total (CaCO3)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Alkalinity - Bicarbonate (CaCO3)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Alkalinity - Carbonate (CaCO3)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Alkalinity - Hydroxide (CaCO3)	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
Nitrite Nitrogen	<0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.06
Nitrate Nitrogen	<0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	13
Chloride	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	120
Sulphate	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ns
Total Phosphorus	< 0.0030	< 0.0030	< 0.0030	< 0.0030	< 0.0030	0.0030	< 0.0030	ns
Dissolved Phosphorus	0.0030	< 0.0030	< 0.0030	< 0.0030	< 0.0030	< 0.0030	< 0.0030	ns
Dissolved Organic Carbon	< 0.50	0.76	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ns
TDS	< 10	< 10	< 10	< 10	< 10	< 10	< 10	ns

Notes:
mg/L - milligrams per litre
ug/L - micrograms per litre
uS/cm - microsiemens per centimeter
< - less than analytical detection limit indicated
'---' - sample not analyzed for parameter indicated
ns - no standard/guideline listed
See laboratory report for detection limits, testing protocols and QA/QC procedures.
Exceeds CCME AFW: CCME Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines for the Protection of Aquatic Water, Freshwater Aquatic Life

TABLE B-54: TRAVEL BLANK WATER ANALYTICAL RESULTS - RADIONUCLIDES (Bq/L)

Sample ID	CONTACT LAKE	SAWMILL BAY	HEALTH CANADA GUIDELINE
Gross Alpha	<0.10	<0.10	ns
Gross Beta	<0.10	<0.10	ns
Lead-210	--	--	0.2
Radium-226	--	--	0.5

Notes:

Bq/L - becquerel per litre

< - less than analytical detection limit indicated

'---' - sample not analyzed for parameter indicated

N/A - not applicable

ns - no standard/guideline listed

See laboratory report for detection limits, testing protocols and QA/QC procedures.

Exceeds Health Canada (2014) Guidelines for Canadian Drinking Water Quality

Appendix C

2016 Lab Reports

Great Bear Lake Sites
2016 Water Quality Monitoring Report
SLR Project No: 234.01016.00001

Sawmill Bay

Your Project #: 234.01016.00000
Site#: SAWMILL BAY
Site Location: SAWMILL BAY
Your C.O.C. #: 503995-01-01, 503995-02-01

Attention:Katrina Nokleby

SLR CONSULTING (CANADA) LTD
#200 - 1620 WEST 8TH AVENUE
VANCOUVER, BC
Canada V6J 1V4

Report Date: 2017/04/10
Report #: R2367572
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B676754

Received: 2016/09/02, 15:28

Sample Matrix: Water
Samples Received: 16

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO ₃ ,HCO ₃ ,OH	16	N/A	2016/09/08	AB SOP-00005	SM 22 2320 B m
BTEX/F1 in Water by HS GC/MS/FID	8	N/A	2016/09/10	AB SOP-00039	CCME CWS/EPA 8260c m
Chloride by Automated Colourimetry	16	N/A	2016/09/08	AB SOP-00020	SM 22 4500-Cl G m
Carbon (DOC) (2)	16	N/A	2016/09/12	EENVSOP-00060	MMCW 119 1996 m
Conductivity @25C	16	N/A	2016/09/08	AB SOP-00005	SM 22 2510 B m
CCME Hydrocarbons (F2-F4 in water) (3)	8	2016/09/08	2016/09/09	AB SOP-00037 / AB SOP-00040	CCME PHC-CWS m
Hardness Total (calculated as CaCO ₃) (1)	16	N/A	2016/09/12	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO ₃) (1)	5	N/A	2016/09/12	BBY WI-00033	Auto Calc
Mercury (Dissolved) by CVAf (1)	5	N/A	2016/09/12	BBY7SOP-00015	BCMOE BCLM Oct2013 m
Mercury (Total) by CVAf (1)	16	2016/09/12	2016/09/12	BBY7SOP-00015	BCMOE BCLM Oct2013 m
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (1)	5	N/A	2016/09/12	BBY7SOP-00002	EPA 6020A R1 m
Elements by CRC ICPMS (dissolved) (1)	5	N/A	2016/09/12	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (1)	16	2016/09/07	2016/09/12	BBY7SOP-00002	EPA 6020A R1 m
Elements by CRC ICPMS (total) (1)	16	2016/09/12	2016/09/12	BBY7SOP-00003,	BCLM2005,EPA6020bR2m
Ammonia-N (Total)	16	N/A	2016/09/08	AB SOP-00007	EPA 350.1 R2.0 m
Nitrate and Nitrite	16	N/A	2016/09/09	AB WI-00065	Auto Calc
Nitrate + Nitrite-N (calculated)	16	N/A	2016/09/09	AB WI-00065	Auto Calc
Nitrogen, (Nitrite, Nitrate) by IC (4)	16	N/A	2016/09/08	AB SOP-00023	SM 22 4110 B m
Filter and HNO ₃ Preserve for Metals (1)	1	N/A	2016/09/09	BBY7 WI-00004	BCMOE Reqs 08/14
Filter and HNO ₃ Preserve for Metals (1)	4	N/A	2016/09/12	BBY7 WI-00004	BCMOE Reqs 08/14
pH @25°C (5)	16	N/A	2016/09/08	AB SOP-00005	SM 22 4500 H+ B m
Orthophosphate by Konelab (4)	16	N/A	2016/09/08	AB SOP-00025	SM 22 4500-P A,B,F m
Sulphate by Automated Colourimetry	16	N/A	2016/09/08	AB SOP-00018	SM 22 4500-SO ₄ E m
Total Dissolved Solids (Filt. Residue)	15	2016/09/08	2016/09/09	AB SOP-00065	SM 22 2540 C m
Total Dissolved Solids (Filt. Residue)	1	2016/09/09	2016/09/12	AB SOP-00065	SM 22 2540 C m
Phosphorus -P (Total, Dissolved)	16	2016/09/08	2016/09/09	AB SOP-00024	SM 22 4500-P A,B,F m
Total Phosphorus	16	2016/09/08	2016/09/09	AB SOP-00024	SM 22 4500-P A,B,F m
Total Suspended Solids (NFR)	16	2016/09/07	2016/09/09	AB SOP-00061	SM 22 2540 D m
Turbidity (4)	16	N/A	2016/09/08	EENVSOP-00066	SM 22 2130 B m

Your Project #: 234.01016.00000
Site#: SAWMILL BAY
Site Location: SAWMILL BAY
Your C.O.C. #: 503995-01-01, 503995-02-01

Attention:Katrina Nokleby

SLR CONSULTING (CANADA) LTD
#200 - 1620 WEST 8TH AVENUE
VANCOUVER, BC
Canada V6J 1V4

Report Date: 2017/04/10
Report #: R2367572
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B676754

Received: 2016/09/02, 15:28

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

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

Results relate to samples tested.

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

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

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

(1) This test was performed by Maxxam Vancouver

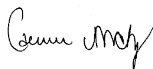
(2) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: Whenever applicable, Dissolved >Total for any parameter that falls within method uncertainty for duplicates is likely equivalent. If RPD is >20% samples were reanalyzed and confirmed.

(3) Silica gel clean up employed.

(4) Analysis completed within 48h after laboratory receipt to a maximum of five days from sampling is satisfactory for compliance purposes.

(5) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Maxxam endeavours to analyze samples as soon as possible after receipt.

Encryption Key



Carmen McKay
Project Manager
10 Apr 2017 11:27:58

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Carmen McKay, Project Manager

Email: CMcKay@maxxam.ca

Phone# (403)219-3683

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B676754
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: SAWMILL BAY
Sampler Initials: DAP, DSK

AT1 BTEX AND F1-F4 IN WATER (WATER)

Maxxam ID		PL3632	PL3633	PL3639	PL3649	PL3650	PL3652		
Sampling Date		2016/09/01 15:20	2016/09/01 12:24	2016/09/01 16:59	2016/09/01 16:11	2016/09/01 16:26	2016/09/01 14:20		
COC Number		503995-01-01	503995-01-01	503995-01-01	503995-02-01	503995-02-01	503995-02-01		
	UNITS	SW-B-2	SW07-3	A3-SW08-01	SW16-01-2	SW16-01-6	SW16-02-6	RDL	QC Batch
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	8391316
F3 (C16-C34 Hydrocarbons)	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	8391316
F4 (C34-C50 Hydrocarbons)	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	8391316
Reached Baseline at C50	mg/L	Yes	Yes	Yes	Yes	Yes	Yes		8391316
Volatiles									
Benzene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	8392696
Toluene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	8392696
Ethylbenzene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	8392696
m & p-Xylene	ug/L	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80	0.80	8392696
o-Xylene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	8392696
Xylenes (Total)	ug/L	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80	0.80	8392696
F1 (C6-C10) - BTEX	ug/L	<100	<100	<100	<100	<100	<100	100	8392696
F1 (C6-C10)	ug/L	<100	<100	<100	<100	<100	<100	100	8392696
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	101	102	102	103	101	101		8392696
4-Bromofluorobenzene (sur.)	%	98	100	99	99	98	99		8392696
D4-1,2-Dichloroethane (sur.)	%	106	108	107	107	107	106		8392696
O-TERPHENYL (sur.)	%	92	98	92	104	90	90		8391316
RDL = Reportable Detection Limit									

Maxxam Job #: B676754
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: SAWMILL BAY
Sampler Initials: DAP, DSK

AT1 BTEX AND F1-F4 IN WATER (WATER)

Maxxam ID		PL3653	PL3654		
Sampling Date		2016/09/01 15:00	2016/09/01 17:10		
COC Number		503995-02-01	503995-02-01		
	UNITS	DUP 4	DUP 5	RDL	QC Batch
Ext. Pet. Hydrocarbon					
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	0.10	8391316
F3 (C16-C34 Hydrocarbons)	mg/L	<0.20	<0.20	0.20	8391316
F4 (C34-C50 Hydrocarbons)	mg/L	<0.20	<0.20	0.20	8391316
Reached Baseline at C50	mg/L	Yes	Yes		8391316
Volatiles					
Benzene	ug/L	<0.40	<0.40	0.40	8392696
Toluene	ug/L	<0.40	<0.40	0.40	8392696
Ethylbenzene	ug/L	<0.40	<0.40	0.40	8392696
m & p-Xylene	ug/L	<0.80	<0.80	0.80	8392696
o-Xylene	ug/L	<0.40	<0.40	0.40	8392696
Xylenes (Total)	ug/L	<0.80	<0.80	0.80	8392696
F1 (C6-C10) - BTEX	ug/L	<100	<100	100	8392696
F1 (C6-C10)	ug/L	<100	<100	100	8392696
Surrogate Recovery (%)					
1,4-Difluorobenzene (sur.)	%	101	101		8392696
4-Bromofluorobenzene (sur.)	%	99	98		8392696
D4-1,2-Dichloroethane (sur.)	%	108	107		8392696
O-TERPHENYL (sur.)	%	91	89		8391316
RDL = Reportable Detection Limit					

Maxxam Job #: B676754
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: SAWMILL BAY
Sampler Initials: DAP, DSK

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		PL3632	PL3633		PL3634	PL3635	PL3636		
Sampling Date		2016/09/01 15:20	2016/09/01 12:24		2016/09/01 13:35	2016/09/01 10:17	2016/09/01 09:35		
COC Number		503995-01-01	503995-01-01		503995-01-01	503995-01-01	503995-01-01		
	UNITS	SW-B-2	SW07-3	QC Batch	BG-SW08-01-2	BG-SW08-05	BG-SW08-03	RDL	QC Batch

Calculated Parameters

Filter and HNO3 Preservation	N/A	FIELD	FIELD	ONSITE			FIELD		ONSITE
Dissolved Nitrate (NO3)	mg/L	0.49	0.51	8389313	0.50	0.35	0.49	0.044	8389313
Nitrate plus Nitrite (N)	mg/L	0.11	0.11	8389314	0.11	0.079	0.11	0.020	8389314
Dissolved Nitrite (NO2)	mg/L	<0.033	<0.033	8389313	<0.033	<0.033	<0.033	0.033	8389313

Misc. Inorganics

Conductivity	uS/cm	160	200	8391007	160	380	190	1.0	8391007
Dissolved Organic Carbon (C)	mg/L	3.1	2.1	8394653	4.3	4.6	4.5	0.50	8394653
pH	pH	7.89	7.94	8391003	7.93	8.12	7.92	N/A	8391003
Total Dissolved Solids	mg/L	80	92	8391032	64	190	92	10	8391032
Total Suspended Solids	mg/L	1.3	<1.0	8390600	<1.0	2.0	<1.0	1.0	8390600

Anions

Alkalinity (PP as CaCO3)	mg/L	<0.50	<0.50	8391005	<0.50	<0.50	<0.50	0.50	8391005
Alkalinity (Total as CaCO3)	mg/L	59	71	8391005	57	200	88	0.50	8391005
Bicarbonate (HCO3)	mg/L	72	86	8391005	70	240	110	0.50	8391005
Carbonate (CO3)	mg/L	<0.50	<0.50	8391005	<0.50	<0.50	<0.50	0.50	8391005
Hydroxide (OH)	mg/L	<0.50	<0.50	8391005	<0.50	<0.50	<0.50	0.50	8391005
Dissolved Sulphate (SO4)	mg/L	17	30	8391020	17	14	24	1.0	8391020
Dissolved Chloride (Cl)	mg/L	4.5	4.5	8391010	4.8	<1.0	4.5	1.0	8391010

Nutrients

Total Ammonia (N)	mg/L	0.018 (1)	0.022 (1)	8391483	0.016 (1)	0.019 (1)	0.023 (1)	0.0067	8391485
Orthophosphate (P)	mg/L	<0.0030	<0.0030	8391444	<0.0030	<0.0030	<0.0030	0.0030	8391444
Dissolved Phosphorus (P)	mg/L	<0.0030	<0.0030	8391091	<0.0030	<0.0030	<0.0030	0.0030	8391112
Total Phosphorus (P)	mg/L	0.0030	<0.0030	8391125	0.0030	0.0040	0.0030	0.0030	8391135
Dissolved Nitrite (N)	mg/L	<0.010	<0.010	8391331	<0.010	<0.010	<0.010	0.010	8391331
Dissolved Nitrate (N)	mg/L	0.11	0.11	8391331	0.11	0.079	0.11	0.010	8391331

Physical Properties

Turbidity	NTU	0.15	0.15	8391639	0.15	0.18	0.17	0.10	8391639
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RDL = Reportable Detection Limit

N/A = Not Applicable

(1) Detection limit for ammonia calculated based on method detection limits (MDL) by client request.

Maxxam Job #: B676754
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: SAWMILL BAY
Sampler Initials: DAP, DSK

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		PL3637	PL3638	PL3639	PL3649	PL3650	PL3651		
Sampling Date		2016/09/01 11:06	2016/09/01 16:50	2016/09/01 16:59	2016/09/01 16:11	2016/09/01 16:26	2016/09/01 14:03		
COC Number		503995-01-01	503995-01-01	503995-01-01	503995-02-01	503995-02-01	503995-02-01		
	UNITS	BG-SW08-04	A3-SW08-05-2	A3-SW08-01	SW16-01-2	SW16-01-6	SW16-02-2	RDL	QC Batch

Calculated Parameters

Filter and HNO3 Preservation	N/A	FIELD							ONSITE
Dissolved Nitrate (NO3)	mg/L	<0.044	0.41	0.16	0.51	0.50	0.50	0.044	8389313
Nitrate plus Nitrite (N)	mg/L	<0.020	0.093	0.036	0.12	0.11	0.11	0.020	8389314
Dissolved Nitrite (NO2)	mg/L	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	0.033	8389313

Misc. Inorganics

Conductivity	uS/cm	280	170	180	160	160	160	1.0	8391007
Dissolved Organic Carbon (C)	mg/L	9.5	4.8	6.7	4.9	4.0	3.6	0.50	8394656
pH	pH	8.49	7.78	7.55	7.91	7.91	7.93	N/A	8391003
Total Dissolved Solids	mg/L	140	68	88	76	60	84	10	8391032
Total Suspended Solids	mg/L	9.3	12	4.0	<1.0	<1.0	<1.0	1.0	8390600

Anions

Alkalinity (PP as CaCO3)	mg/L	2.4	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8391005
Alkalinity (Total as CaCO3)	mg/L	150	60	76	58	57	60	0.50	8391005
Bicarbonate (HCO3)	mg/L	180	73	93	71	70	73	0.50	8391005
Carbonate (CO3)	mg/L	2.9	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8391005
Hydroxide (OH)	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8391005
Dissolved Sulphate (SO4)	mg/L	4.7	15	12	17	17	17	1.0	8391020
Dissolved Chloride (Cl)	mg/L	<1.0	4.7	4.0	4.4	4.5	4.4	1.0	8391010

Nutrients

Total Ammonia (N)	mg/L	0.041 (1)	0.034 (1)	0.038 (1)	0.028 (1)	<0.0067 (1)	0.026 (1)	0.0067	8391485
Orthophosphate (P)	mg/L	<0.0030	<0.0030	0.0030	<0.0030	<0.0030	<0.0030	0.0030	8391444
Dissolved Phosphorus (P)	mg/L	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030	0.0030	8391112
Total Phosphorus (P)	mg/L	0.0090	0.0080	0.017	<0.0030	<0.0030	0.0030	0.0030	8391135
Dissolved Nitrite (N)	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	8391331
Dissolved Nitrate (N)	mg/L	<0.010	0.093	0.036	0.12	0.11	0.11	0.010	8391331

Physical Properties

Turbidity	NTU	1.4	1.8	7.1	0.13	0.14	0.15	0.10	8391639
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RDL = Reportable Detection Limit

N/A = Not Applicable

(1) Detection limit for ammonia calculated based on method detection limits (MDL) by client request.

Maxxam Job #: B676754
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: SAWMILL BAY
Sampler Initials: DAP, DSK

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		PL3652	PL3653	PL3654	PL3655		PL3656		
Sampling Date		2016/09/01 14:20	2016/09/01 15:00	2016/09/01 17:10	2016/09/01 18:00				
COC Number		503995-02-01	503995-02-01	503995-02-01	503995-02-01		503995-02-01		
	UNITS	SW16-02-6	DUP 4	DUP 5	DUP C	QC Batch	TRIP BLANK	RDL	QC Batch

Calculated Parameters									
Filter and HNO3 Preservation	N/A		FIELD			ONSITE			ONSITE
Dissolved Nitrate (NO3)	mg/L	0.49	0.51	0.14	<0.044	8389313	<0.044	0.044	8389313
Nitrate plus Nitrite (N)	mg/L	0.11	0.12	0.031	<0.020	8389314	<0.020	0.020	8389314
Dissolved Nitrite (NO2)	mg/L	<0.033	<0.033	<0.033	<0.033	8389313	<0.033	0.033	8389313
Misc. Inorganics									
Conductivity	uS/cm	190	170	190	<1.0	8391007	<1.0	1.0	8391007
Dissolved Organic Carbon (C)	mg/L	3.7	3.0	4.6	<0.50	8394656	<0.50	0.50	8394653
pH	pH	7.96	7.98	7.58	4.98	8391003	4.83	N/A	8391003
Total Dissolved Solids	mg/L	88	68	84	<10	8391032	<10	10	8392201
Total Suspended Solids	mg/L	<1.0	<1.0	4.0	<1.0	8390600	<1.0	1.0	8390600
Anions									
Alkalinity (PP as CaCO3)	mg/L	<0.50	<0.50	<0.50	<0.50	8391005	<0.50	0.50	8391005
Alkalinity (Total as CaCO3)	mg/L	64	58	79	<0.50	8391005	<0.50	0.50	8391005
Bicarbonate (HCO3)	mg/L	79	71	96	<0.50	8391005	<0.50	0.50	8391005
Carbonate (CO3)	mg/L	<0.50	<0.50	<0.50	<0.50	8391005	<0.50	0.50	8391005
Hydroxide (OH)	mg/L	<0.50	<0.50	<0.50	<0.50	8391005	<0.50	0.50	8391005
Dissolved Sulphate (SO4)	mg/L	21	17	12	<1.0	8391020	<1.0	1.0	8391020
Dissolved Chloride (Cl)	mg/L	4.1	4.4	4.0	<1.0	8391010	<1.0	1.0	8391010
Nutrients									
Total Ammonia (N)	mg/L	0.022 (1)	0.022 (1)	0.039 (1)	0.017 (1)	8391485	0.018 (1)	0.0067	8391485
Orthophosphate (P)	mg/L	<0.0030	<0.0030	0.0040	<0.0030	8391444	<0.0030	0.0030	8391444
Dissolved Phosphorus (P)	mg/L	<0.0030	<0.0030	0.0030	<0.0030	8391112	<0.0030	0.0030	8391112
Total Phosphorus (P)	mg/L	0.0030	<0.0030	0.013	<0.0030	8391135	<0.0030	0.0030	8391135
Dissolved Nitrite (N)	mg/L	<0.010	<0.010	<0.010	<0.010	8391331	<0.010	0.010	8391331
Dissolved Nitrate (N)	mg/L	0.11	0.12	0.031	<0.010	8391331	<0.010	0.010	8391331
Physical Properties									
Turbidity	NTU	0.15	0.18	5.5	<0.10	8391639	<0.10	0.10	8391639
RDL = Reportable Detection Limit									
N/A = Not Applicable									
(1) Detection limit for ammonia calculated based on method detection limits (MDL) by client request.									

Maxxam Job #: B676754
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: SAWMILL BAY
Sampler Initials: DAP, DSK

CSR/CCME DISS. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL3632		PL3633		PL3636		PL3637		
Sampling Date		2016/09/01 15:20		2016/09/01 12:24		2016/09/01 09:35		2016/09/01 11:06		
COC Number		503995-01-01		503995-01-01		503995-01-01		503995-01-01		
	UNITS	SW-B-2	QC Batch	SW07-3	QC Batch	BG-SW08-03	QC Batch	BG-SW08-04	RDL	QC Batch

Misc. Inorganics										
Dissolved Hardness (CaCO ₃)	mg/L	73.7	8389461	97.0	8389461	77.0	8389461	155	0.50	8390478
Elements										
Dissolved Mercury (Hg)	ug/L	<0.010	8394853	<0.010	8394853	<0.010	8394853	0.012	0.010	8394853
Dissolved Metals by ICPMS										
Dissolved Aluminum (Al)	ug/L	<3.0	8394759	4.2	8394759	4.2	8394759	43.9 (1)	3.0	8395535
Dissolved Antimony (Sb)	ug/L	<0.50	8394759	<0.50	8394759	<0.50	8394759	<0.50	0.50	8394759
Dissolved Arsenic (As)	ug/L	0.19	8394759	0.26	8394759	0.17	8394759	<0.10	0.10	8394759
Dissolved Barium (Ba)	ug/L	23.6	8394759	25.0	8394759	23.4	8394759	124 (1)	1.0	8395535
Dissolved Beryllium (Be)	ug/L	<0.10	8394759	<0.10	8394759	<0.10	8394759	<0.10	0.10	8394759
Dissolved Bismuth (Bi)	ug/L	<1.0	8394759	<1.0	8394759	<1.0	8394759	<1.0	1.0	8394759
Dissolved Boron (B)	ug/L	<50	8394759	<50	8394759	<50	8394759	164	50	8394759
Dissolved Cadmium (Cd)	ug/L	<0.010	8394759	<0.010	8394759	<0.010	8394759	0.014	0.010	8394759
Dissolved Chromium (Cr)	ug/L	<1.0	8394759	<1.0	8394759	<1.0	8394759	<1.0	1.0	8394759
Dissolved Cobalt (Co)	ug/L	<0.50	8394759	<0.50	8394759	<0.50	8394759	<0.50	0.50	8394759
Dissolved Copper (Cu)	ug/L	0.27	8394759	0.51	8394759	0.26	8394759	0.88	0.20	8394759
Dissolved Iron (Fe)	ug/L	<5.0	8394759	<5.0	8394759	<5.0	8394759	<5.0	5.0	8394759
Dissolved Lead (Pb)	ug/L	<0.20	8394759	<0.20	8394759	<0.20	8394759	<0.20	0.20	8394759
Dissolved Lithium (Li)	ug/L	<5.0	8394759	<5.0	8394759	<5.0	8394759	<5.0	5.0	8394759
Dissolved Manganese (Mn)	ug/L	<1.0	8394759	3.6	8394759	<1.0	8394759	2.8	1.0	8394759
Dissolved Molybdenum (Mo)	ug/L	<1.0	8394759	<1.0	8394759	<1.0	8394759	<1.0	1.0	8394759
Dissolved Nickel (Ni)	ug/L	<1.0	8394759	<1.0	8394759	<1.0	8394759	<1.0	1.0	8394759
Dissolved Selenium (Se)	ug/L	<0.10	8394759	0.29	8394759	<0.10	8394759	<0.10	0.10	8394759
Dissolved Silicon (Si)	ug/L	1130	8394759	1280	8394759	1090	8394759	836	100	8394759
Dissolved Silver (Ag)	ug/L	<0.020	8394759	<0.020	8394759	<0.020	8394759	<0.020	0.020	8394759
Dissolved Strontium (Sr)	ug/L	109	8394759	171	8394759	103	8394759	60.7	1.0	8394759
Dissolved Thallium (Tl)	ug/L	<0.050	8394759	<0.050	8394759	<0.050	8394759	<0.050	0.050	8394759
Dissolved Tin (Sn)	ug/L	<5.0	8394759	<5.0	8394759	<5.0	8394759	<5.0	5.0	8394759
Dissolved Titanium (Ti)	ug/L	<5.0	8394759	<5.0	8394759	<5.0	8394759	<5.0	5.0	8394759
Dissolved Uranium (U)	ug/L	0.30	8394759	0.41	8395535	0.37	8394759	0.21	0.10	8394759
Dissolved Vanadium (V)	ug/L	<5.0	8394759	<5.0	8394759	<5.0	8394759	<5.0	5.0	8394759

RDL = Reportable Detection Limit

(1) Dissolved greater than total. Reanalysis yields similar results.

Maxxam Job #: B676754
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: SAWMILL BAY
Sampler Initials: DAP, DSK

CSR/CCME DISS. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL3632		PL3633		PL3636		PL3637		
Sampling Date		2016/09/01 15:20		2016/09/01 12:24		2016/09/01 09:35		2016/09/01 11:06		
COC Number		503995-01-01		503995-01-01		503995-01-01		503995-01-01		
	UNITS	SW-B-2	QC Batch	SW07-3	QC Batch	BG-SW08-03	QC Batch	BG-SW08-04	RDL	QC Batch
Dissolved Zinc (Zn)	ug/L	<5.0	8394759	13.0	8394759	9.2	8394759	<5.0	5.0	8395535
Dissolved Zirconium (Zr)	ug/L	<0.50	8394759	<0.50	8394759	<0.50	8394759	<0.50	0.50	8394759
Dissolved Calcium (Ca)	mg/L	17.2	8389932	23.6	8389932	17.9	8389932	23.5	0.050	8389932
Dissolved Magnesium (Mg)	mg/L	7.43	8389932	9.26	8389932	7.86	8389932	23.4	0.050	8389932
Dissolved Potassium (K)	mg/L	0.698	8389932	0.830	8389932	0.683	8389932	1.56	0.050	8389932
Dissolved Sodium (Na)	mg/L	4.12	8389932	4.18	8389932	3.99	8389932	1.18	0.050	8389932
Dissolved Sulphur (S)	mg/L	5.6	8389932	11.8	8389932	7.4	8389932	<3.0	3.0	8389932
RDL = Reportable Detection Limit										

Maxxam Job #: B676754
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: SAWMILL BAY
Sampler Initials: DAP, DSK

CSR/CCME DISS. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL3653		
Sampling Date		2016/09/01 15:00		
COC Number		503995-02-01		
	UNITS	DUP 4	RDL	QC Batch
Misc. Inorganics				
Dissolved Hardness (CaCO ₃)	mg/L	71.1	0.50	8390478
Elements				
Dissolved Mercury (Hg)	ug/L	<0.010	0.010	8394853
Dissolved Metals by ICPMS				
Dissolved Aluminum (Al)	ug/L	4.3	3.0	8394759
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	8394759
Dissolved Arsenic (As)	ug/L	0.21	0.10	8394759
Dissolved Barium (Ba)	ug/L	23.5	1.0	8394759
Dissolved Beryllium (Be)	ug/L	<0.10	0.10	8394759
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	8394759
Dissolved Boron (B)	ug/L	<50	50	8394759
Dissolved Cadmium (Cd)	ug/L	<0.010	0.010	8394759
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	8394759
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	8394759
Dissolved Copper (Cu)	ug/L	0.23	0.20	8394759
Dissolved Iron (Fe)	ug/L	<5.0	5.0	8394759
Dissolved Lead (Pb)	ug/L	<0.20	0.20	8394759
Dissolved Lithium (Li)	ug/L	<5.0	5.0	8394759
Dissolved Manganese (Mn)	ug/L	<1.0	1.0	8394759
Dissolved Molybdenum (Mo)	ug/L	<1.0	1.0	8394759
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	8394759
Dissolved Selenium (Se)	ug/L	<0.10	0.10	8394759
Dissolved Silicon (Si)	ug/L	1060	100	8394759
Dissolved Silver (Ag)	ug/L	<0.020	0.020	8394759
Dissolved Strontium (Sr)	ug/L	109	1.0	8394759
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	8394759
Dissolved Tin (Sn)	ug/L	<5.0	5.0	8394759
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	8394759
Dissolved Uranium (U)	ug/L	0.32	0.10	8394759
Dissolved Vanadium (V)	ug/L	<5.0	5.0	8394759
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	8395535
RDL = Reportable Detection Limit				

Maxxam Job #: B676754
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: SAWMILL BAY
Sampler Initials: DAP, DSK

CSR/CCME DISS. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL3653		
Sampling Date		2016/09/01 15:00		
COC Number		503995-02-01		
	UNITS	DUP 4	RDL	QC Batch
Dissolved Zirconium (Zr)	ug/L	<0.50	0.50	8394759
Dissolved Calcium (Ca)	mg/L	16.7	0.050	8389932
Dissolved Magnesium (Mg)	mg/L	7.14	0.050	8389932
Dissolved Potassium (K)	mg/L	0.698	0.050	8389932
Dissolved Sodium (Na)	mg/L	4.00	0.050	8389932
Dissolved Sulphur (S)	mg/L	5.7	3.0	8389932
RDL = Reportable Detection Limit				

Maxxam Job #: B676754
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: SAWMILL BAY
Sampler Initials: DAP, DSK

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL3632	PL3633	PL3634	PL3635	PL3636		
Sampling Date		2016/09/01 15:20	2016/09/01 12:24	2016/09/01 13:35	2016/09/01 10:17	2016/09/01 09:35		
COC Number		503995-01-01	503995-01-01	503995-01-01	503995-01-01	503995-01-01		
	UNITS	SW-B-2	SW07-3	BG-SW08-01-2	BG-SW08-05	BG-SW08-03	RDL	QC Batch
Calculated Parameters								
Total Hardness (CaCO ₃)	mg/L	72.0	96.1	70.6	204	81.0	0.50	8389856
Elements								
Total Mercury (Hg)	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	8394860
Total Metals by ICPMS								
Total Aluminum (Al)	ug/L	6.0	5.3	5.9	5.9	7.9	3.0	8395100
Total Antimony (Sb)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8395100
Total Arsenic (As)	ug/L	0.19	0.14	0.18	0.39	0.20	0.10	8395100
Total Barium (Ba)	ug/L	23.0	24.3	22.5	106	24.5	1.0	8395100
Total Beryllium (Be)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	8395100
Total Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	8395100
Total Boron (B)	ug/L	<50	<50	<50	<50	<50	50	8395100
Total Cadmium (Cd)	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	8395100
Total Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	8395100
Total Cobalt (Co)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8395100
Total Copper (Cu)	ug/L	<0.50	<0.50	<0.50	1.07	<0.50	0.50	8395100
Total Iron (Fe)	ug/L	<10	10	<10	<10	<10	10	8395100
Total Lead (Pb)	ug/L	<0.20	<0.20	<0.20	0.30	<0.20	0.20	8395100
Total Lithium (Li)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8395100
Total Manganese (Mn)	ug/L	<1.0	3.2	<1.0	<1.0	1.6	1.0	8395100
Total Molybdenum (Mo)	ug/L	<1.0	<1.0	<1.0	2.2	<1.0	1.0	8395100
Total Nickel (Ni)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	8395100
Total Selenium (Se)	ug/L	0.24	0.27	0.21	0.70	0.20	0.10	8395100
Total Silicon (Si)	ug/L	1120	1330	1170	3050	1300	100	8395100
Total Silver (Ag)	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	8395100
Total Strontium (Sr)	ug/L	102	171	102	41.0	105	1.0	8395100
Total Thallium (Tl)	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8395100
Total Tin (Sn)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8395100
Total Titanium (Ti)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8395100
Total Uranium (U)	ug/L	0.32	0.42	0.30	1.15	0.39	0.10	8395100
Total Vanadium (V)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8395100
Total Zinc (Zn)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8395100
RDL = Reportable Detection Limit								

Maxxam Job #: B676754
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: SAWMILL BAY
Sampler Initials: DAP, DSK

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL3632	PL3633	PL3634	PL3635	PL3636		
Sampling Date		2016/09/01 15:20	2016/09/01 12:24	2016/09/01 13:35	2016/09/01 10:17	2016/09/01 09:35		
COC Number		503995-01-01	503995-01-01	503995-01-01	503995-01-01	503995-01-01		
	UNITS	SW-B-2	SW07-3	BG-SW08-01-2	BG-SW08-05	BG-SW08-03	RDL	QC Batch
Total Zirconium (Zr)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8395100
Total Calcium (Ca)	mg/L	16.7	23.7	16.4	39.1	18.7	0.050	8389905
Total Magnesium (Mg)	mg/L	7.39	8.92	7.18	25.9	8.32	0.050	8389905
Total Potassium (K)	mg/L	0.666	0.739	0.662	0.890	0.703	0.050	8389905
Total Sodium (Na)	mg/L	4.05	3.91	4.08	1.02	4.08	0.050	8389905
Total Sulphur (S)	mg/L	5.3	10.0	6.3	5.0	8.1	3.0	8389905
RDL = Reportable Detection Limit								

Maxxam Job #: B676754
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: SAWMILL BAY
Sampler Initials: DAP, DSK

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL3637	PL3638		PL3639	PL3649	PL3650		
Sampling Date		2016/09/01 11:06	2016/09/01 16:50		2016/09/01 16:59	2016/09/01 16:11	2016/09/01 16:26		
COC Number		503995-01-01	503995-01-01		503995-01-01	503995-02-01	503995-02-01		
	UNITS	BG-SW08-04	A3-SW08-05-2	QC Batch	A3-SW08-01	SW16-01-2	SW16-01-6	RDL	QC Batch
Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L	165	77.9	8389856	86.0	71.1	70.6	0.50	8389856
Elements									
Total Mercury (Hg)	ug/L	<0.010	<0.010	8394860	<0.010	<0.010	<0.010	0.010	8394860
Total Metals by ICPMS									
Total Aluminum (Al)	ug/L	21.9	43.1	8394906	13.5	7.3	6.4	3.0	8395100
Total Antimony (Sb)	ug/L	<0.50	<0.50	8394906	<0.50	<0.50	<0.50	0.50	8395100
Total Arsenic (As)	ug/L	0.12	0.26	8394906	0.31	0.22	0.12	0.10	8395100
Total Barium (Ba)	ug/L	85.8	24.0	8394906	38.4	22.9	22.7	1.0	8395100
Total Beryllium (Be)	ug/L	<0.10	<0.10	8394906	<0.10	<0.10	<0.10	0.10	8395100
Total Bismuth (Bi)	ug/L	<1.0	<1.0	8394906	<1.0	<1.0	<1.0	1.0	8395100
Total Boron (B)	ug/L	78	<50	8394906	<50	<50	<50	50	8395100
Total Cadmium (Cd)	ug/L	0.014	<0.010	8394906	<0.010	<0.010	<0.010	0.010	8395100
Total Chromium (Cr)	ug/L	<1.0	<1.0	8394906	<1.0	<1.0	<1.0	1.0	8395100
Total Cobalt (Co)	ug/L	<0.50	<0.50	8394906	<0.50	<0.50	<0.50	0.50	8395100
Total Copper (Cu)	ug/L	0.95	0.76	8394906	<0.50	<0.50	<0.50	0.50	8395100
Total Iron (Fe)	ug/L	28	1090	8394906	2490	<10	<10	10	8395100
Total Lead (Pb)	ug/L	<0.20	<0.20	8394906	<0.20	<0.20	<0.20	0.20	8395100
Total Lithium (Li)	ug/L	<5.0	<5.0	8394906	<5.0	<5.0	<5.0	5.0	8395100
Total Manganese (Mn)	ug/L	11.2	46.4	8394906	178	<1.0	<1.0	1.0	8395100
Total Molybdenum (Mo)	ug/L	<1.0	<1.0	8394906	<1.0	<1.0	<1.0	1.0	8395100
Total Nickel (Ni)	ug/L	<1.0	<1.0	8394906	<1.0	<1.0	<1.0	1.0	8395100
Total Selenium (Se)	ug/L	<0.10	<0.10	8394906	0.19	0.22	0.14	0.10	8395100
Total Silicon (Si)	ug/L	932	1550	8394906	2490	1120	1190	100	8395100
Total Silver (Ag)	ug/L	<0.020	<0.020	8394906	<0.020	<0.020	<0.020	0.020	8395100
Total Strontium (Sr)	ug/L	60.8	106	8394906	107	104	104	1.0	8395100
Total Thallium (Tl)	ug/L	<0.050	<0.050	8394906	<0.050	<0.050	<0.050	0.050	8395100
Total Tin (Sn)	ug/L	<5.0	<5.0	8394906	<5.0	<5.0	<5.0	5.0	8395100
Total Titanium (Ti)	ug/L	<5.0	<5.0	8394906	<5.0	<5.0	<5.0	5.0	8395100
Total Uranium (U)	ug/L	0.25	0.26	8394906	0.20	0.29	0.30	0.10	8395100
Total Vanadium (V)	ug/L	<5.0	<5.0	8394906	<5.0	<5.0	<5.0	5.0	8395100
Total Zinc (Zn)	ug/L	<5.0	<5.0	8394906	<5.0	<5.0	<5.0	5.0	8395100
RDL = Reportable Detection Limit									

Maxxam Job #: B676754
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: SAWMILL BAY
Sampler Initials: DAP, DSK

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL3637	PL3638		PL3639	PL3649	PL3650		
Sampling Date		2016/09/01 11:06	2016/09/01 16:50		2016/09/01 16:59	2016/09/01 16:11	2016/09/01 16:26		
COC Number		503995-01-01	503995-01-01		503995-01-01	503995-02-01	503995-02-01		
	UNITS	BG-SW08-04	A3-SW08-05-2	QC Batch	A3-SW08-01	SW16-01-2	SW16-01-6	RDL	QC Batch
Total Zirconium (Zr)	ug/L	<0.50	<0.50	8394906	<0.50	<0.50	<0.50	0.50	8395100
Total Calcium (Ca)	mg/L	25.1	17.8	8389905	19.0	16.4	16.4	0.050	8389905
Total Magnesium (Mg)	mg/L	24.9	8.15	8389905	9.35	7.30	7.19	0.050	8389905
Total Potassium (K)	mg/L	1.83	0.820	8389905	0.833	0.672	0.655	0.050	8389905
Total Sodium (Na)	mg/L	1.14	4.38	8389905	3.85	4.17	4.10	0.050	8389905
Total Sulphur (S)	mg/L	<3.0	6.2	8389905	3.7	5.8	4.6	3.0	8389905
RDL = Reportable Detection Limit									

Maxxam Job #: B676754
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: SAWMILL BAY
Sampler Initials: DAP, DSK

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL3651	PL3652	PL3653	PL3654	PL3655	PL3656		
Sampling Date		2016/09/01 14:03	2016/09/01 14:20	2016/09/01 15:00	2016/09/01 17:10	2016/09/01 18:00			
COC Number		503995-02-01	503995-02-01	503995-02-01	503995-02-01	503995-02-01	503995-02-01		
	UNITS	SW16-02-2	SW16-02-6	DUP 4	DUP 5	DUP C	TRIP BLANK	RDL	QC Batch

Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L	71.6	82.6	74.0	82.6	<0.50	<0.50	0.50	8389856
Elements									
Total Mercury (Hg)	ug/L	<0.010	0.014	<0.010	<0.010	<0.010	<0.010	0.010	8394860
Total Metals by ICPMS									
Total Aluminum (Al)	ug/L	5.8	5.9	7.7	9.4	6.0	<3.0	3.0	8395100
Total Antimony (Sb)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8395100
Total Arsenic (As)	ug/L	0.24	0.17	0.16	0.38	<0.10	<0.10	0.10	8395100
Total Barium (Ba)	ug/L	22.8	24.4	23.5	37.7	<1.0	<1.0	1.0	8395100
Total Beryllium (Be)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	8395100
Total Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	8395100
Total Boron (B)	ug/L	<50	<50	<50	<50	<50	<50	50	8395100
Total Cadmium (Cd)	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	8395100
Total Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	8395100
Total Cobalt (Co)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8395100
Total Copper (Cu)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8395100
Total Iron (Fe)	ug/L	<10	<10	<10	2180	<10	<10	10	8395100
Total Lead (Pb)	ug/L	0.75	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	8395100
Total Lithium (Li)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8395100
Total Manganese (Mn)	ug/L	<1.0	<1.0	<1.0	154	<1.0	<1.0	1.0	8395100
Total Molybdenum (Mo)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	8395100
Total Nickel (Ni)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	8395100
Total Selenium (Se)	ug/L	0.17	0.14	0.14	0.20	0.11	<0.10	0.10	8395100
Total Silicon (Si)	ug/L	1170	1210	1150	2420	<100	<100	100	8395100
Total Silver (Ag)	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	8395100
Total Strontium (Sr)	ug/L	99.5	127	105	109	<1.0	<1.0	1.0	8395100
Total Thallium (Tl)	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8395100
Total Tin (Sn)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8395100
Total Titanium (Ti)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8395100
Total Uranium (U)	ug/L	0.30	0.33	0.30	0.20	<0.10	<0.10	0.10	8395100
Total Vanadium (V)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8395100
Total Zinc (Zn)	ug/L	<5.0	<5.0	<5.0	7.9	<5.0	<5.0	5.0	8395100
RDL = Reportable Detection Limit									

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CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL3651	PL3652	PL3653	PL3654	PL3655	PL3656		
Sampling Date		2016/09/01 14:03	2016/09/01 14:20	2016/09/01 15:00	2016/09/01 17:10	2016/09/01 18:00			
COC Number		503995-02-01	503995-02-01	503995-02-01	503995-02-01	503995-02-01	503995-02-01		
	UNITS	SW16-02-2	SW16-02-6	DUP 4	DUP 5	DUP C	TRIP BLANK	RDL	QC Batch
Total Zirconium (Zr)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8395100
Total Calcium (Ca)	mg/L	16.8	19.4	17.2	18.4	0.094	<0.050	0.050	8389905
Total Magnesium (Mg)	mg/L	7.18	8.28	7.54	8.88	<0.050	<0.050	0.050	8389905
Total Potassium (K)	mg/L	0.676	0.716	0.685	0.800	<0.050	<0.050	0.050	8389905
Total Sodium (Na)	mg/L	4.06	4.06	4.18	3.82	<0.050	<0.050	0.050	8389905
Total Sulphur (S)	mg/L	5.9	7.6	5.7	4.4	<3.0	<3.0	3.0	8389905
RDL = Reportable Detection Limit									

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GENERAL COMMENTS

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

Package 1	4.0°C
Package 2	5.0°C
Package 3	4.7°C

Gross Alpha and Gross Beta Analysis results are attached to this report. The reference number for these results from Maxxam Campobello is B6j2778.

Report revised to include updated detection limits for Ammonia, per client request 2017/04/10

Sample PL3632 [SW-B-2] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL3633 [SW07-3] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL3634 [BG-SW08-01-2] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL3635 [BG-SW08-05] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL3636 [BG-SW08-03] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL3637 [BG-SW08-04] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL3638 [A3-SW08-05-2] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL3639 [A3-SW08-01] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL3649 [SW16-01-2] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL3650 [SW16-01-6] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL3651 [SW16-02-2] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

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Sample PL3652 [SW16-02-6] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL3653 [DUP 4] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL3654 [DUP 5] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL3655 [DUP C] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL3633, Elements by CRC ICPMS (dissolved): Test repeated.

Sample PL3637, Elements by CRC ICPMS (dissolved): Test repeated.

Sample PL3653, Elements by CRC ICPMS (dissolved): Test repeated.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

SLR CONSULTING (CANADA) LTD
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Sampler Initials: DAP, DSK

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8391316	O-TERPHENYL (sur.)	2016/09/09	86	60 - 130	100	60 - 130	97	%				
8392696	1,4-Difluorobenzene (sur.)	2016/09/09	100	70 - 130	100	70 - 130	101	%				
8392696	4-Bromofluorobenzene (sur.)	2016/09/09	99	70 - 130	98	70 - 130	100	%				
8392696	D4-1,2-Dichloroethane (sur.)	2016/09/09	107	70 - 130	106	70 - 130	109	%				
8390600	Total Suspended Solids	2016/09/09	97	80 - 120	92	80 - 120	<1.0	mg/L	15	20		
8391003	pH	2016/09/08			100	97 - 103			0.64	N/A		
8391005	Alkalinity (PP as CaCO ₃)	2016/09/08					<0.50	mg/L	NC	20		
8391005	Alkalinity (Total as CaCO ₃)	2016/09/08			97	80 - 120	<0.50	mg/L	2.4	20		
8391005	Bicarbonate (HCO ₃)	2016/09/08					<0.50	mg/L	2.4	20		
8391005	Carbonate (CO ₃)	2016/09/08					<0.50	mg/L	NC	20		
8391005	Hydroxide (OH)	2016/09/08					<0.50	mg/L	NC	20		
8391007	Conductivity	2016/09/08			99	90 - 110	<1.0	uS/cm	0.78	10		
8391010	Dissolved Chloride (Cl)	2016/09/08	107	80 - 120	102	80 - 120	<1.0	mg/L	0.72	20		
8391020	Dissolved Sulphate (SO ₄)	2016/09/08	NC	80 - 120	105	80 - 120	<1.0	mg/L	1.8	20		
8391032	Total Dissolved Solids	2016/09/09	NC	80 - 120	101	80 - 120	<10	mg/L	0.98	20		
8391091	Dissolved Phosphorus (P)	2016/09/09	95	80 - 120	106	80 - 120	<0.0030	mg/L	NC	20	90	80 - 120
8391112	Dissolved Phosphorus (P)	2016/09/09	99	80 - 120	100	80 - 120	<0.0030	mg/L	NC	20	89	80 - 120
8391125	Total Phosphorus (P)	2016/09/09	89	80 - 120	94	80 - 120	<0.0030	mg/L	NC	20	83	80 - 120
8391135	Total Phosphorus (P)	2016/09/09	95	80 - 120	92	80 - 120	<0.0030	mg/L	NC	20	83	80 - 120
8391316	F2 (C10-C16 Hydrocarbons)	2016/09/09	94	60 - 130	110	70 - 130	<0.10	mg/L	NC	30		
8391316	F3 (C16-C34 Hydrocarbons)	2016/09/09	93	60 - 130	110	70 - 130	<0.20	mg/L	NC	30		
8391316	F4 (C34-C50 Hydrocarbons)	2016/09/09	83	60 - 130	97	70 - 130	<0.20	mg/L	NC	30		
8391331	Dissolved Nitrate (N)	2016/09/08	105	80 - 120	102	80 - 120	<0.010	mg/L	2.8	20		
8391331	Dissolved Nitrite (N)	2016/09/08	102	80 - 120	99	80 - 120	<0.010	mg/L	NC	20		
8391444	Orthophosphate (P)	2016/09/08	104	80 - 120	102	80 - 120	<0.0030	mg/L	NC	20		
8391483	Total Ammonia (N)	2016/09/08	98	80 - 120	96	80 - 120	<0.050	mg/L	NC	20		
8391485	Total Ammonia (N)	2016/09/08	87	80 - 120	100	80 - 120	<0.050	mg/L	NC	20		
8391639	Turbidity	2016/09/08			100	80 - 120	<0.10	NTU	1.4	20		
8392201	Total Dissolved Solids	2016/09/09	102	80 - 120	100	80 - 120	<10	mg/L	1.8	20		
8392696	Benzene	2016/09/09	98	70 - 130	86	70 - 130	<0.40	ug/L	NC	30		
8392696	Ethylbenzene	2016/09/09	98	70 - 130	87	70 - 130	<0.40	ug/L	NC	30		

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Sampler Initials: DAP, DSK

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8392696	F1 (C6-C10) - BTEX	2016/09/09					<100	ug/L	NC	30		
8392696	F1 (C6-C10)	2016/09/09	86	70 - 130	101	70 - 130	<100	ug/L	NC	30		
8392696	m & p-Xylene	2016/09/09	98	70 - 130	87	70 - 130	<0.80	ug/L	NC	30		
8392696	o-Xylene	2016/09/09	97	70 - 130	87	70 - 130	<0.40	ug/L	NC	30		
8392696	Toluene	2016/09/09	93	70 - 130	82	70 - 130	<0.40	ug/L	NC	30		
8392696	Xylenes (Total)	2016/09/09					<0.80	ug/L	NC	30		
8394653	Dissolved Organic Carbon (C)	2016/09/12	110	80 - 120	100	80 - 120	<0.50	mg/L	NC	20		
8394656	Dissolved Organic Carbon (C)	2016/09/12	NC	80 - 120	102	80 - 120	<0.50	mg/L	5.0	20		
8394759	Dissolved Aluminum (Al)	2016/09/12	109	80 - 120	117	80 - 120	<3.0	ug/L	NC	20		
8394759	Dissolved Antimony (Sb)	2016/09/12	105	80 - 120	101	80 - 120	<0.50	ug/L	NC	20		
8394759	Dissolved Arsenic (As)	2016/09/12	103	80 - 120	104	80 - 120	<0.10	ug/L	NC	20		
8394759	Dissolved Barium (Ba)	2016/09/12	NC	80 - 120	105	80 - 120	<1.0	ug/L	1.7	20		
8394759	Dissolved Beryllium (Be)	2016/09/12	105	80 - 120	109	80 - 120	<0.10	ug/L	NC	20		
8394759	Dissolved Bismuth (Bi)	2016/09/12	104	80 - 120	105	80 - 120	<1.0	ug/L	NC	20		
8394759	Dissolved Boron (B)	2016/09/12	103	80 - 120	109	80 - 120	<50	ug/L	NC	20		
8394759	Dissolved Cadmium (Cd)	2016/09/12	97	80 - 120	103	80 - 120	<0.010	ug/L	NC	20		
8394759	Dissolved Chromium (Cr)	2016/09/12	102	80 - 120	105	80 - 120	<1.0	ug/L	NC	20		
8394759	Dissolved Cobalt (Co)	2016/09/12	96	80 - 120	104	80 - 120	<0.50	ug/L	NC	20		
8394759	Dissolved Copper (Cu)	2016/09/12	94	80 - 120	103	80 - 120	<0.20	ug/L	0.37	20		
8394759	Dissolved Iron (Fe)	2016/09/12	102	80 - 120	109	80 - 120	<5.0	ug/L	NC	20		
8394759	Dissolved Lead (Pb)	2016/09/12	104	80 - 120	105	80 - 120	<0.20	ug/L	NC	20		
8394759	Dissolved Lithium (Li)	2016/09/12	101	80 - 120	108	80 - 120	<5.0	ug/L	NC	20		
8394759	Dissolved Manganese (Mn)	2016/09/12	97	80 - 120	105	80 - 120	<1.0	ug/L	NC	20		
8394759	Dissolved Molybdenum (Mo)	2016/09/12	107	80 - 120	111	80 - 120	<1.0	ug/L	NC	20		
8394759	Dissolved Nickel (Ni)	2016/09/12	99	80 - 120	107	80 - 120	<1.0	ug/L	NC	20		
8394759	Dissolved Selenium (Se)	2016/09/12	107	80 - 120	110	80 - 120	<0.10	ug/L	NC	20		
8394759	Dissolved Silicon (Si)	2016/09/12					<100	ug/L	1.3	20		
8394759	Dissolved Silver (Ag)	2016/09/12	106	80 - 120	113	80 - 120	<0.020	ug/L	NC	20		
8394759	Dissolved Strontium (Sr)	2016/09/12	NC	80 - 120	99	80 - 120	<1.0	ug/L	2.4	20		
8394759	Dissolved Thallium (Tl)	2016/09/12	99	80 - 120	106	80 - 120	<0.050	ug/L	NC	20		
8394759	Dissolved Tin (Sn)	2016/09/12	104	80 - 120	103	80 - 120	<5.0	ug/L	NC	20		

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Sampler Initials: DAP, DSK

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8394759	Dissolved Titanium (Ti)	2016/09/12	102	80 - 120	113	80 - 120	<5.0	ug/L	NC	20		
8394759	Dissolved Uranium (U)	2016/09/12	105	80 - 120	105	80 - 120	<0.10	ug/L	0.66	20		
8394759	Dissolved Vanadium (V)	2016/09/12	104	80 - 120	105	80 - 120	<5.0	ug/L	NC	20		
8394759	Dissolved Zinc (Zn)	2016/09/12	102	80 - 120	108	80 - 120	<5.0	ug/L	NC	20		
8394759	Dissolved Zirconium (Zr)	2016/09/12					<0.50	ug/L	NC	20		
8394853	Dissolved Mercury (Hg)	2016/09/12	82	80 - 120	97	80 - 120	<0.010	ug/L	NC	20		
8394860	Total Mercury (Hg)	2016/09/12	93	80 - 120	97	80 - 120	<0.010	ug/L	NC	20		
8394906	Total Aluminum (Al)	2016/09/12	NC	80 - 120	115	80 - 120	<3.0	ug/L	4.7	20		
8394906	Total Antimony (Sb)	2016/09/12	NC	80 - 120	104	80 - 120	<0.50	ug/L				
8394906	Total Arsenic (As)	2016/09/12	107	80 - 120	110	80 - 120	<0.10	ug/L	2.1	20		
8394906	Total Barium (Ba)	2016/09/12	NC	80 - 120	97	80 - 120	<1.0	ug/L				
8394906	Total Beryllium (Be)	2016/09/12	108	80 - 120	103	80 - 120	<0.10	ug/L				
8394906	Total Bismuth (Bi)	2016/09/12	111	80 - 120	98	80 - 120	<1.0	ug/L				
8394906	Total Boron (B)	2016/09/12	NC	80 - 120	116	80 - 120	<50	ug/L	4.5	20		
8394906	Total Cadmium (Cd)	2016/09/12	109	80 - 120	107	80 - 120	<0.010	ug/L	2.6	20		
8394906	Total Chromium (Cr)	2016/09/12	104	80 - 120	102	80 - 120	<1.0	ug/L	NC	20		
8394906	Total Cobalt (Co)	2016/09/12	103	80 - 120	105	80 - 120	<0.50	ug/L	6.7	20		
8394906	Total Copper (Cu)	2016/09/12	NC	80 - 120	106	80 - 120	<0.50	ug/L	3.2	20		
8394906	Total Iron (Fe)	2016/09/12	NC	80 - 120	107	80 - 120	<10	ug/L	2.7	20		
8394906	Total Lead (Pb)	2016/09/12	NC	80 - 120	103	80 - 120	<0.20	ug/L	7.2	20		
8394906	Total Lithium (Li)	2016/09/12	NC	80 - 120	104	80 - 120	<5.0	ug/L				
8394906	Total Manganese (Mn)	2016/09/12	NC	80 - 120	103	80 - 120	<1.0	ug/L	2.6	20		
8394906	Total Molybdenum (Mo)	2016/09/12	NC	80 - 120	100	80 - 120	<1.0	ug/L	5.4	20		
8394906	Total Nickel (Ni)	2016/09/12	NC	80 - 120	104	80 - 120	<1.0	ug/L	2.7	20		
8394906	Total Selenium (Se)	2016/09/12	120	80 - 120	116	80 - 120	<0.10	ug/L	NC	20		
8394906	Total Silicon (Si)	2016/09/12					<100	ug/L				
8394906	Total Silver (Ag)	2016/09/12	106	80 - 120	105	80 - 120	<0.020	ug/L	NC	20		
8394906	Total Strontium (Sr)	2016/09/12	NC	80 - 120	102	80 - 120	<1.0	ug/L				
8394906	Total Thallium (Tl)	2016/09/12	108	80 - 120	102	80 - 120	<0.050	ug/L				
8394906	Total Tin (Sn)	2016/09/12	105	80 - 120	99	80 - 120	<5.0	ug/L				
8394906	Total Titanium (Ti)	2016/09/12	106	80 - 120	97	80 - 120	<5.0	ug/L				

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QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8394906	Total Uranium (U)	2016/09/12	110	80 - 120	101	80 - 120	<0.10	ug/L				
8394906	Total Vanadium (V)	2016/09/12	102	80 - 120	105	80 - 120	<5.0	ug/L				
8394906	Total Zinc (Zn)	2016/09/12	NC	80 - 120	117	80 - 120	<5.0	ug/L	4.2	20		
8394906	Total Zirconium (Zr)	2016/09/12					<0.50	ug/L				
8395100	Total Aluminum (Al)	2016/09/12	107	80 - 120	116	80 - 120	<3.0	ug/L	14	20		
8395100	Total Antimony (Sb)	2016/09/12	100	80 - 120	103	80 - 120	<0.50	ug/L	NC	20		
8395100	Total Arsenic (As)	2016/09/12	102	80 - 120	104	80 - 120	<0.10	ug/L	6.8	20		
8395100	Total Barium (Ba)	2016/09/12	NC	80 - 120	106	80 - 120	<1.0	ug/L	0.89	20		
8395100	Total Beryllium (Be)	2016/09/12	104	80 - 120	108	80 - 120	<0.10	ug/L	NC	20		
8395100	Total Bismuth (Bi)	2016/09/12	103	80 - 120	107	80 - 120	<1.0	ug/L	NC	20		
8395100	Total Boron (B)	2016/09/12	103	80 - 120	105	80 - 120	<50	ug/L	NC	20		
8395100	Total Cadmium (Cd)	2016/09/12	96	80 - 120	104	80 - 120	<0.010	ug/L	8.0	20		
8395100	Total Chromium (Cr)	2016/09/12	100	80 - 120	107	80 - 120	<1.0	ug/L	NC	20		
8395100	Total Cobalt (Co)	2016/09/12	97	80 - 120	106	80 - 120	<0.50	ug/L	NC	20		
8395100	Total Copper (Cu)	2016/09/12	96	80 - 120	106	80 - 120	<0.50	ug/L	NC	20		
8395100	Total Iron (Fe)	2016/09/12	NC	80 - 120	107	80 - 120	<10	ug/L	3.0	20		
8395100	Total Lead (Pb)	2016/09/12	101	80 - 120	108	80 - 120	<0.20	ug/L	NC	20		
8395100	Total Lithium (Li)	2016/09/12	103	80 - 120	110	80 - 120	<5.0	ug/L	NC	20		
8395100	Total Manganese (Mn)	2016/09/12	NC	80 - 120	107	80 - 120	<1.0	ug/L	1.8	20		
8395100	Total Molybdenum (Mo)	2016/09/12	108	80 - 120	112	80 - 120	<1.0	ug/L	NC	20		
8395100	Total Nickel (Ni)	2016/09/12	101	80 - 120	108	80 - 120	<1.0	ug/L	NC	20		
8395100	Total Selenium (Se)	2016/09/12	103	80 - 120	109	80 - 120	<0.10	ug/L	NC	20		
8395100	Total Silicon (Si)	2016/09/12					<100	ug/L	0.33	20		
8395100	Total Silver (Ag)	2016/09/12	97	80 - 120	102	80 - 120	<0.020	ug/L	NC	20		
8395100	Total Strontium (Sr)	2016/09/12	NC	80 - 120	101	80 - 120	<1.0	ug/L	0.58	20		
8395100	Total Thallium (Tl)	2016/09/12	97	80 - 120	102	80 - 120	<0.050	ug/L	NC	20		
8395100	Total Tin (Sn)	2016/09/12	100	80 - 120	102	80 - 120	<5.0	ug/L	NC	20		
8395100	Total Titanium (Ti)	2016/09/12	96	80 - 120	109	80 - 120	<5.0	ug/L	NC	20		
8395100	Total Uranium (U)	2016/09/12	103	80 - 120	108	80 - 120	<0.10	ug/L	NC	20		
8395100	Total Vanadium (V)	2016/09/12	98	80 - 120	106	80 - 120	<5.0	ug/L	NC	20		
8395100	Total Zinc (Zn)	2016/09/12	NC	80 - 120	110	80 - 120	<5.0	ug/L	2.8	20		

Maxxam Job #: B676754
Report Date: 2017/04/10

QUALITY ASSURANCE REPORT(CONT'D)

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: SAWMILL BAY
Sampler Initials: DAP, DSK

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8395100	Total Zirconium (Zr)	2016/09/12					<0.50	ug/L	NC	20		
8395535	Dissolved Aluminum (Al)	2016/09/13			101	80 - 120	<3.0	ug/L				
8395535	Dissolved Barium (Ba)	2016/09/13			100	80 - 120	<1.0	ug/L				
8395535	Dissolved Uranium (U)	2016/09/13			106	80 - 120	<0.10	ug/L				
8395535	Dissolved Zinc (Zn)	2016/09/13			104	80 - 120	<5.0	ug/L				

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

Maxxam Job #: B676754
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: SAWMILL BAY
Sampler Initials: DAP, DSK

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Anna Koksharova, M.Sc., Organics Senior Analyst



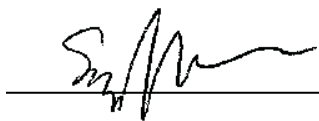
Andy Lu, Ph.D., P.Chem., Scientific Specialist



Justin Geisel, B.Sc., Organics Supervisor



Maria Magdalena Florescu, Ph.D., P.Chem., QP, Inorganics Senior Analyst



Sandy Yuan, M.Sc., Scientific Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



Maxxam Analytics International Corporation o/a Maxxam Analytics
Unit 105 - 349 Old Airport Road, Yellowknife, North West Territories Canada X1A 3X6 Tel: (867) 445-2448 Toll-free: 800-563-6266 Fax: (905) 817-5779 www.maxxam.ca

Chain Of Custody Record

Page 1 of 2

INVOICE TO:		Report Information		Project Information		Laboratory Use Only										
Company Name	#1776 SLR CONSULTING (CANADA) LTD	Company Name		Quotation #	B51186	Maxxam Job #	Bottle Order #:									
Contact Name	Joy Cherian KATRINA NOKLEBY	Contact Name	← SAME	P.O. #												
Address	#44-5022 49th St YELLOWKNIFE, NT X1A 3R8	Address	←	Project #	234.D1016.00000	Chain Of Custody Record	Project Manager									
Phone	867-765-5695	Phone		Project Name	GREAT BEAR LAKE											
Fax		Fax		Site #	Sawmill Bay											
Report	cherian@slrconsulting.com; analytical@slrconsulting.c	Invoice	knokleby@slr...	Sampled By	DAP/DSK		Letitia Prefontaine									
Regulatory Criteria: knokleby@slr...		Special Instructions		ANALYSIS REQUESTED (PLEASE BE SPECIFIC)												
<input type="checkbox"/> CSR		★ pb 210, Ra 226 on hold ★														
<input type="checkbox"/> CCME																
<input type="checkbox"/> BC Water Quality																
<input type="checkbox"/> Other																
SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM																
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered ? (Y/N)	Alkalinity, Conductivity, pH, Turbidity, TSS, TDS	Chloride, Sulphate	Ammonia, Orthophosph, Dissolved phosphate, Total phosphate, Nitrate, Nitrite, DOC	Total Metals in Water w/ CV Hg & Total Hardness	Dissolved Metals in Water w/ CV Hg & Dissolved Hardness	COME BTEX/F1 in Water	COME F2-F4 in Water	Gross Alpha & Beta	Lead-210 & Radium-226 (Hold)	# of Bottles	Comments
1	SW-B-2	09/01/2016	15:20	SW	Y	X	X	X	X	X	X	X	X	X	16	
2	SW07-3	09/01/2016	12:24	SW	Y	X	X	X	X	X	X	X	X	X	16	
3	BG-SW08-01 -2	09/01/2016	13:35	SW	/	X	X	X	X						7	
4	BG-SW08-01 -05	09/01/2016	10:17	SW	/	X	X	X	X						7	
5	BG-SW08-03	09/01/2016	9:35	SW	X	X	X	X	X						9	
6	BG-SW08-04	09/01/2016	11:06	SW	Y	X	X	X	X	X					9	
7	A3-SW08-05-2	09/01/2016	16:50	SW	/	X	X	X	X						7	
8	SW07-3															
9	A3-SW08-01	09/01/2016	16:59	SW		X	X	X	X		X	X	X	X	14	
10	A2-SW08-03															
RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	# Jars used and not submitted		Time Sensitive		Temperature (°C) on Receipt		Custody Seal intact on Cooler?		
Joy Cherian KATRINA NOKLEBY		16/09/02	10:50	KATRINA NOKLEBY		16/09/02	12:30	1		<input type="checkbox"/>		see ACTR		<input type="checkbox"/> Yes <input type="checkbox"/> No		
KATRINA NOKLEBY		16/09/02	15:10	DE JI WU		2016/09/04	15:28									

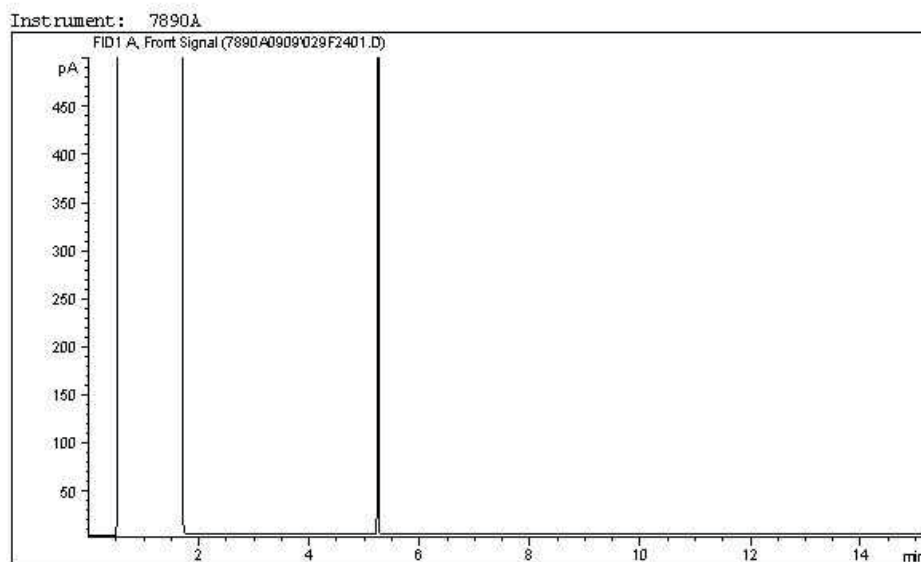
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD, AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

Maxxam Analytics International Corporation o/a Maxxam Analytics

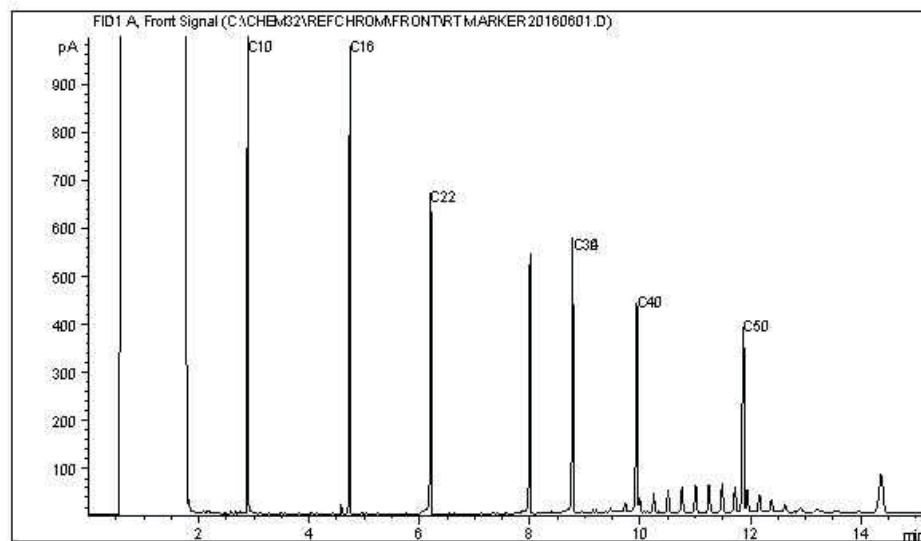
White: Maxxam Yellow: Client

INVOICE TO:		Report Information		Project Information		Laboratory Use Only	
Company Name	#1776 SLR CONSULTING (CANADA) LTD	Company Name		Quotation #	B51186	Maxxam Job #	B676754 D-T
Contact Name	Joy Chorian KARRINA NOKLEBY	Contact Name	SAME	P.O. #		Bottle Order #	503995
Address	#44-5022 49th ST YELLOWKNIFE NT X1A 3R8	Address		Project #	234.01016.0000	Chain Of Custody Record	Project Manager
Phone	867-765-5695	Phone		Project Name	GREAT BEAR LAKE	Chain Of Custody Record	Project Manager
Fax		Fax		Site #	Sawmill Bay	Chain Of Custody Record	Project Manager
Regulatory Criteria	knokleby@slr	Special Instructions	VOICE knokleby@slrconsulting.com	Sampled By	DAVID	Chain Of Custody Record	Project Manager
Regulatory Criteria	<input type="checkbox"/> CSR <input type="checkbox"/> CCME <input type="checkbox"/> BC Water Quality <input type="checkbox"/> Other	Special Instructions	* Hold - pb 210 + Ra226	Analysis Requested (Please Be Specific)		Turnaround Time (TAT) Required	
SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM				Regular (Standard) TAT: (will be applied if Rush TAT is not specified): Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.			
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered ? (Y/N)	Alkalinity, Conductivity, pH, Turbidity, TSS, TDS	Chloride, Sulphate
1	SW16-01-2	09/01/2016	16:11	SW	X	X	X
2	SW16-01-6	09/01/2016	16:26	SW	X	X	X
3	SW16-02-2	09/01/2016	14:03	SW	X	X	X
4	SW16-02-6	09/01/2016	14:20	SW	X	X	X
5	SW16-03-1						
6	SW16-03-4						
7	DUP 4	09/01/2016	15:00	SW	X	X	X
8	DUP 5	09/01/2016	17:10	SW	X	X	X
9	DUP 6	09/01/2016	18:00	SW	X	X	X
10	Trip Blank				X	X	X
RELINQUISHED BY: (Signature/Print)				RECEIVED BY: (Signature/Print)			
Date: (YY/MM/DD)				Date: (YY/MM/DD)			
Time				Time			
16/09/02 10:50				16/09/02 12:30			
16/09/02 15:10				2016/09/04 15:28			
# Jars used and not submitted				Lab Use Only			
Time Sensitive				Temperature (°C) on Receipt			
Custody Seal Intact on Cooler?				Custody Seal Intact on Cooler?			
Yes No				Yes No			
White: Maxxam Yellow: Client				White: Maxxam Yellow: Client			

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram

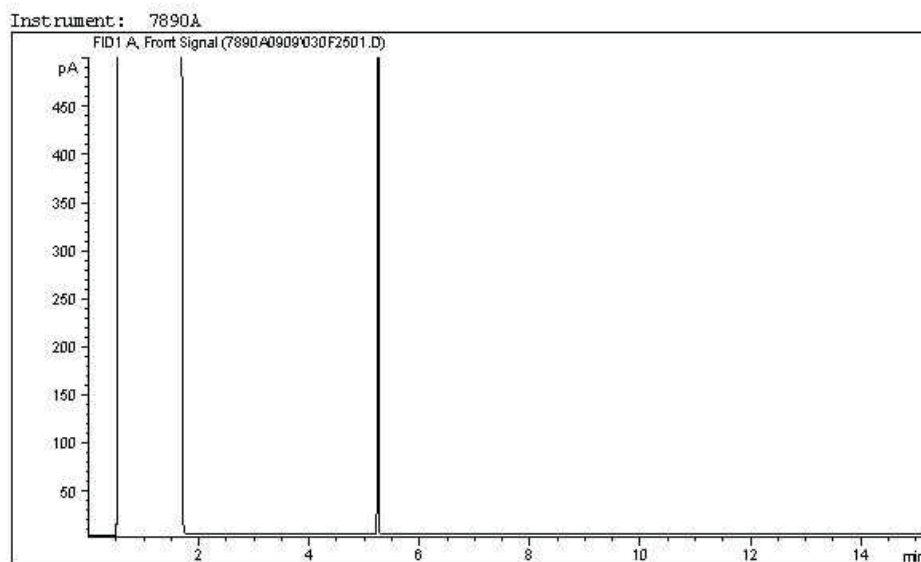


TYPICAL PRODUCT CARBON NUMBER RANGES

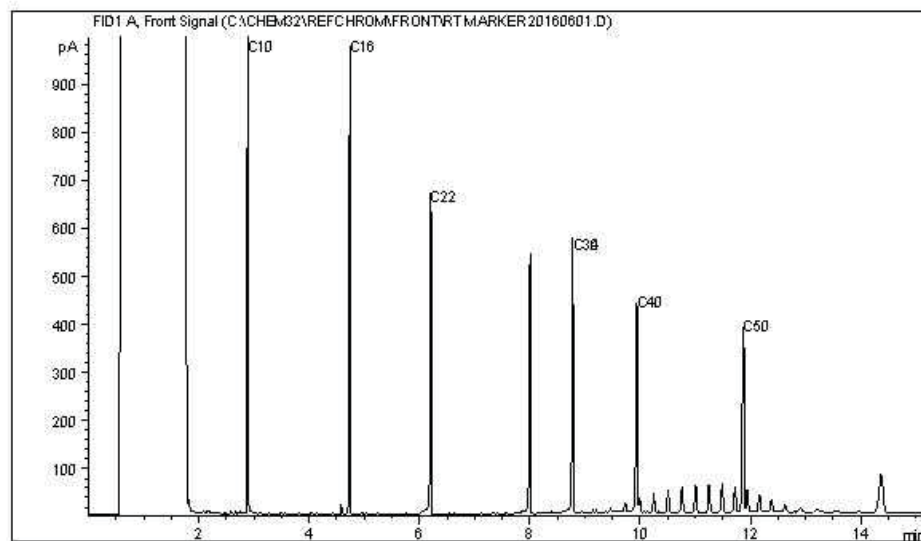
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram

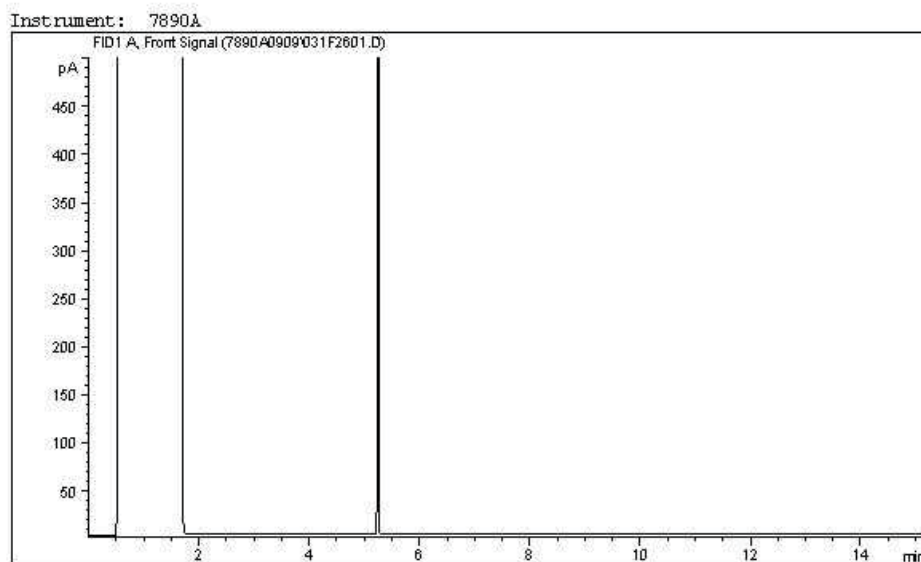


TYPICAL PRODUCT CARBON NUMBER RANGES

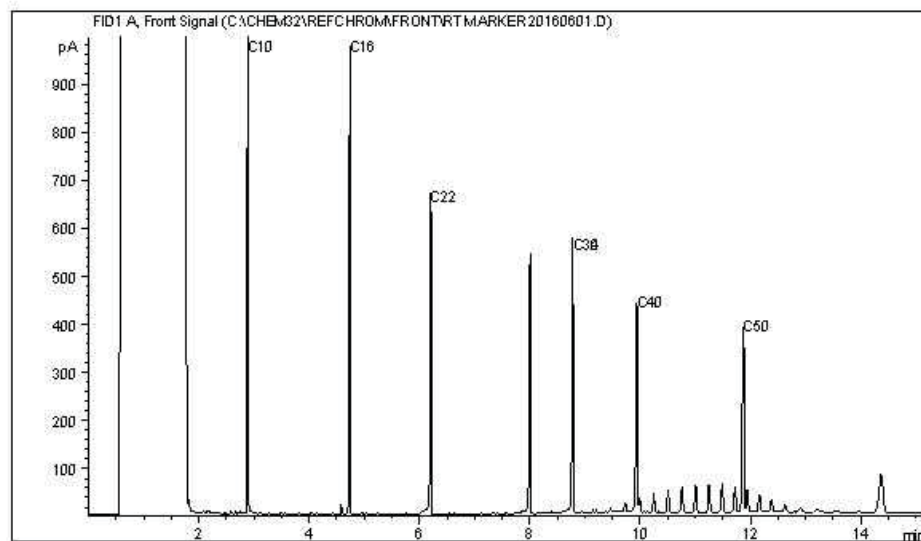
Gasoline:	C4 - C12	Diesel:	C8 - C22
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CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram

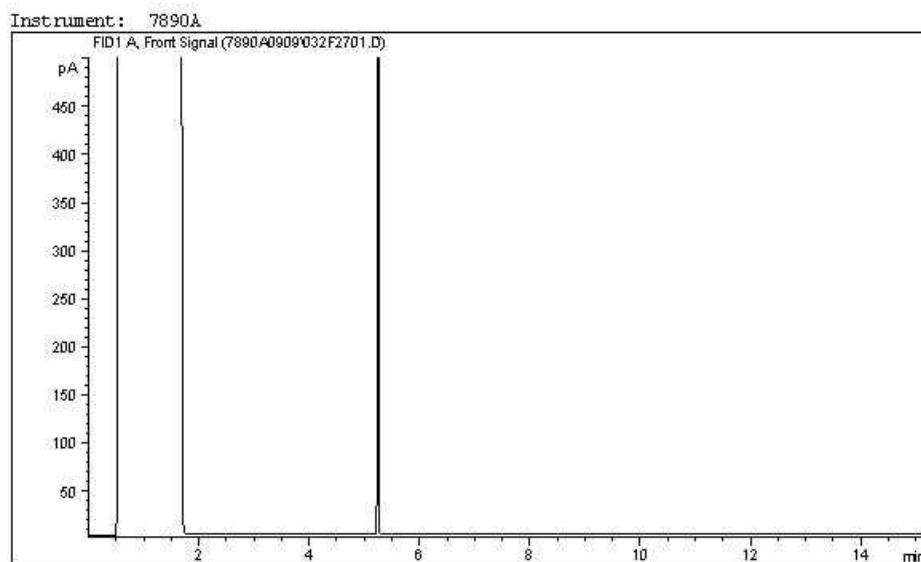


TYPICAL PRODUCT CARBON NUMBER RANGES

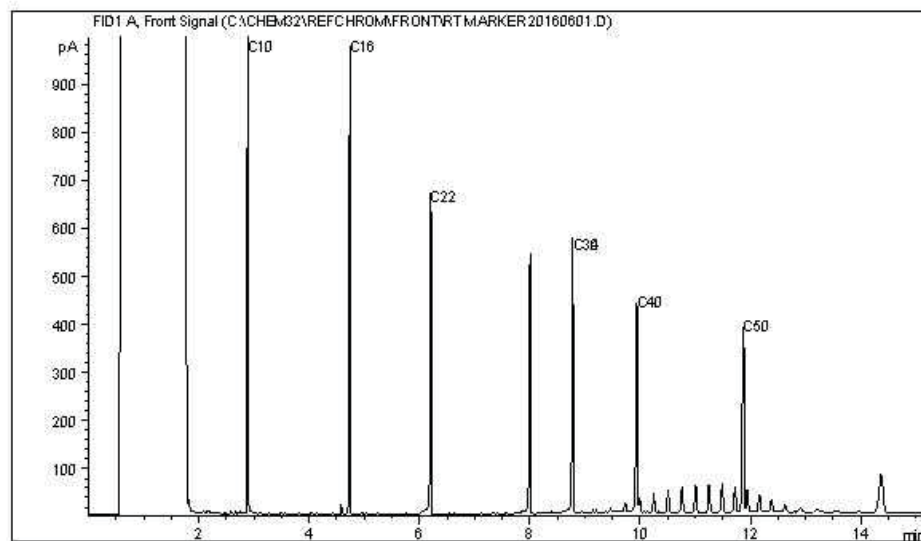
Gasoline:	C4 - C12	Diesel:	C8 - C22
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CCME Hydrocarbons (F2-F4 in water) Chromatogram



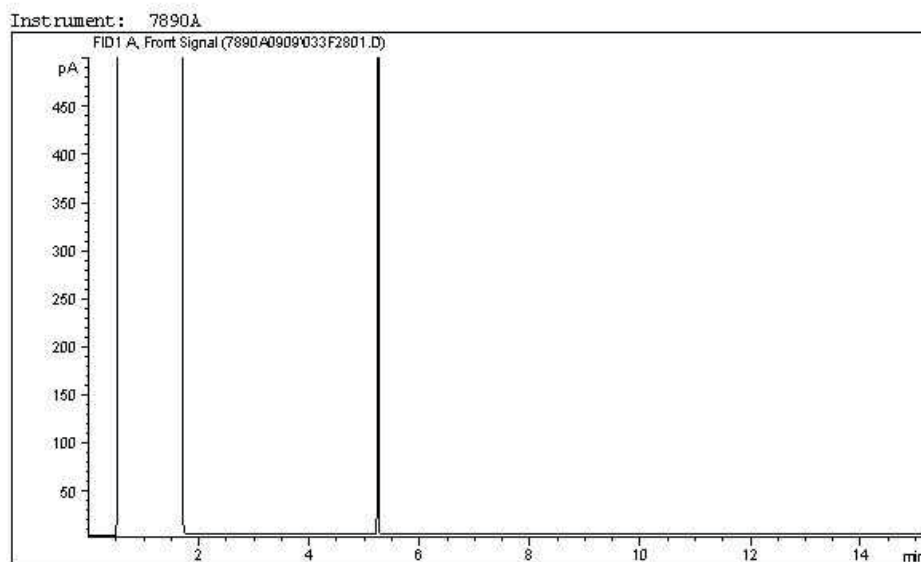
Carbon Range Distribution - Reference Chromatogram



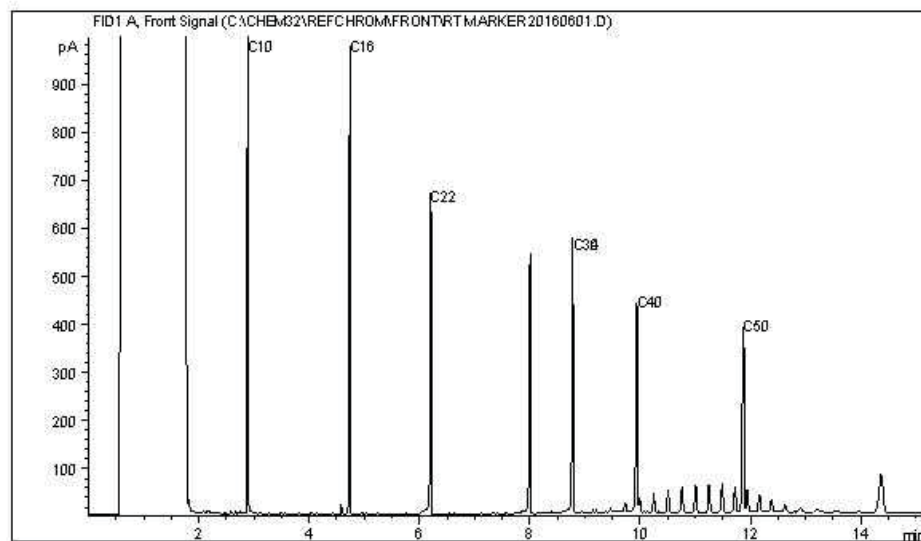
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
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CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram

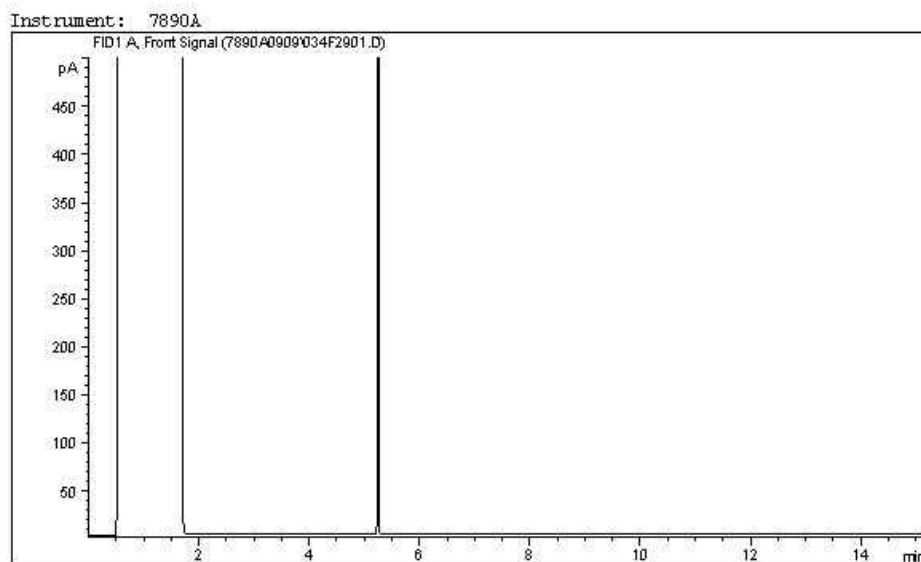


TYPICAL PRODUCT CARBON NUMBER RANGES

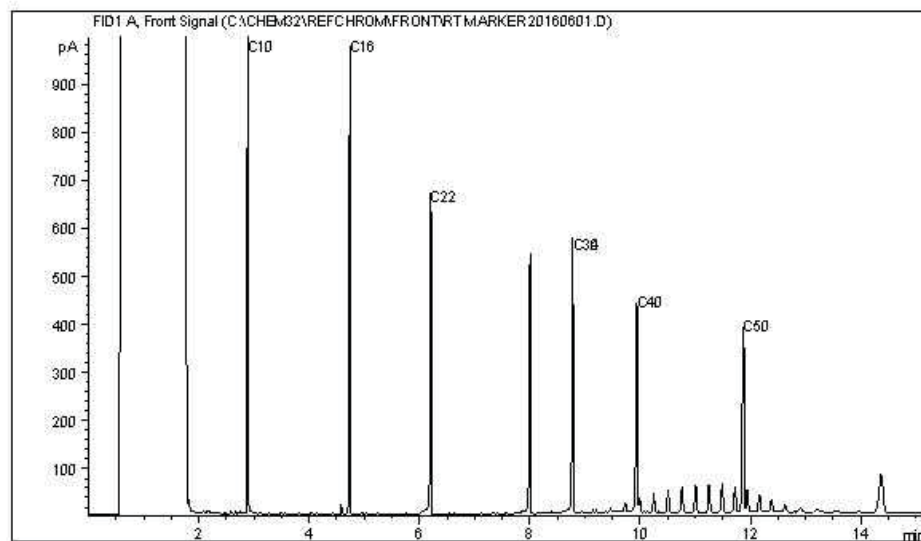
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CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram

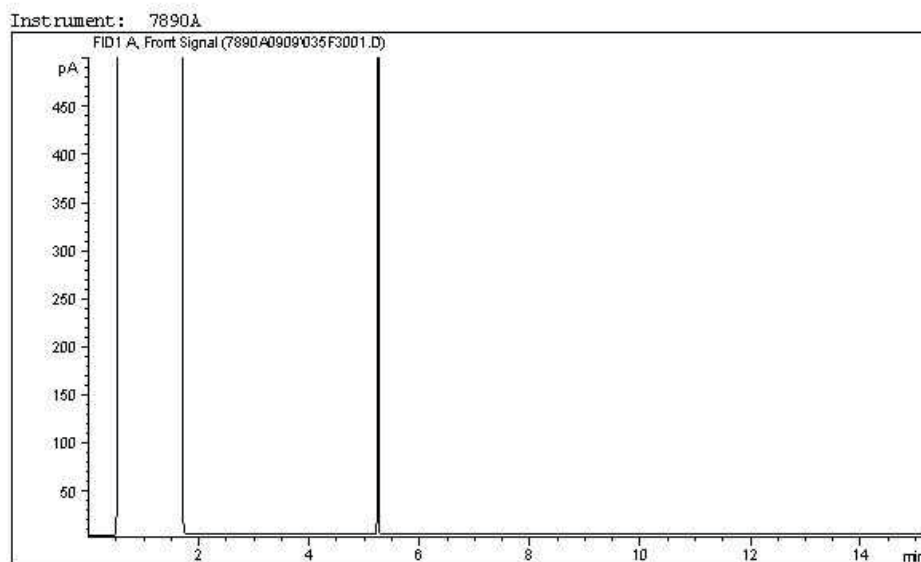


TYPICAL PRODUCT CARBON NUMBER RANGES

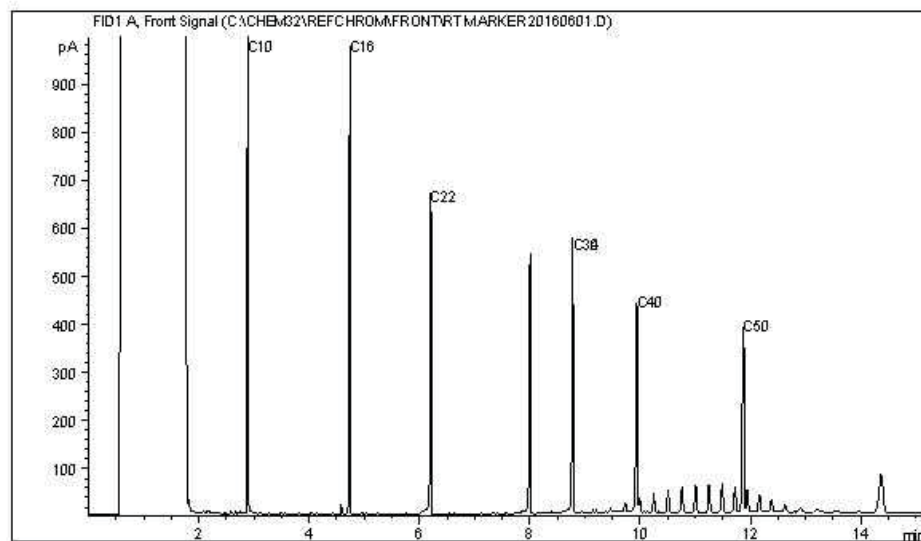
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CCME Hydrocarbons (F2-F4 in water) Chromatogram



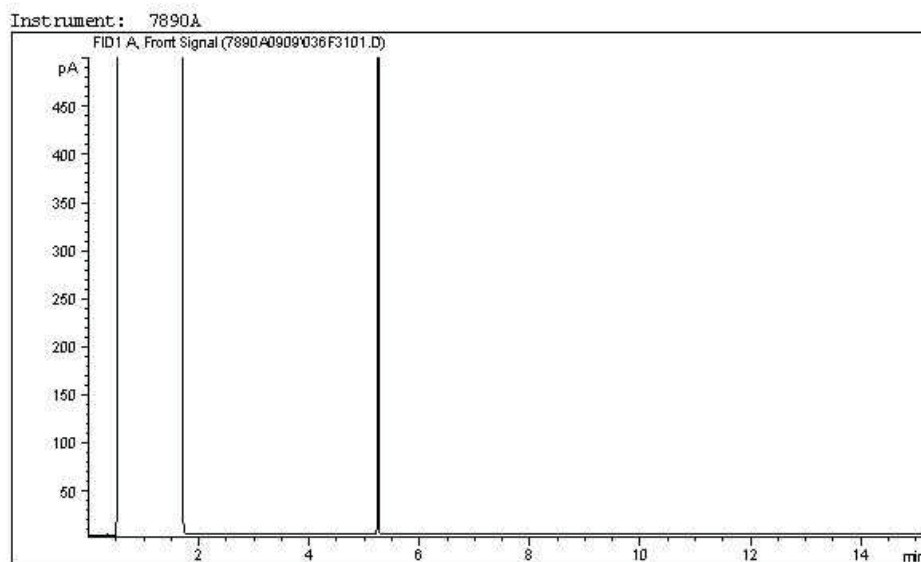
Carbon Range Distribution - Reference Chromatogram



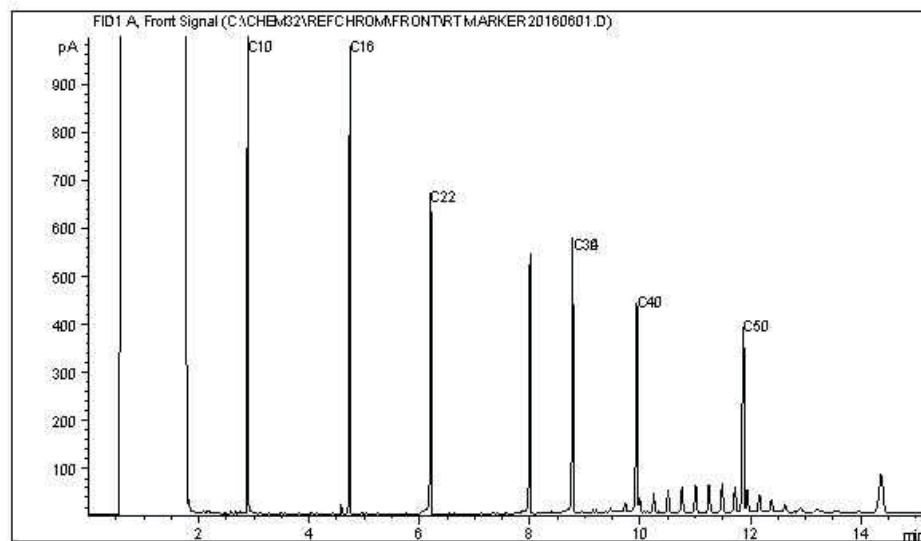
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
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Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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

Your Project #: B676754

Attention: Carmen McKay

Maxxam Analytics Edmonton
9331 48 St NW
Edmonton, AB
Canada T6B 2R4

Report Date: 2016/09/26

Report #: R4180461

Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B6J2778

Received: 2016/09/09, 09:50

Sample Matrix: Water
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Gross Alpha and Gross Beta	8	N/A	2016/09/19	BQL SOP-00008	GFPC

Remarks:

Maxxam Analytics is an ISO 17025 accredited laboratory for certain tests listed within the scope of accreditation. This test report shall not be reproduced, except in full, without written approval of Maxxam Analytics.

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

Encryption Key



Simona Vatamanescu
Project Manager
26 Sep 2016 15:11:53 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Simona Vatamanescu, Project Manager

Email: SVatamanescu@maxxam.ca

Phone# (905)826-3080

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

RESULTS OF ANALYSES OF WATER

Maxxam ID		DAQ652	DAQ653	DAQ654	DAQ655	DAQ656	DAQ657		
Sampling Date		2016/09/01 15:20	2016/09/01 12:24	2016/09/01 16:59	2016/09/01 16:26	2016/09/01 15:00	2016/09/01 17:10		
	UNITS	SW-B-2	SW07-3	A3-SW08-01	SW16-01-6	DUP 4	DUP 5	RDL	QC Batch
Gross Alpha	Bq/L	<0.10	0.14	0.13	<0.10	<0.10	<0.10	0.10	4650148
Gross Beta	Bq/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	4650148
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									

Maxxam ID		DAQ658	DAQ659		
Sampling Date		2016/09/01 18:30			
	UNITS	DUP C	TRIP BLANK	RDL	QC Batch
Gross Alpha	Bq/L	<0.10	<0.10	0.10	4654524
Gross Beta	Bq/L	<0.10	<0.10	0.10	4654524
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					

GENERAL COMMENTS

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
4650148	JK2	Spiked Blank	Gross Alpha	2016/09/16		85	%	60 - 140
			Gross Beta	2016/09/16		96	%	70 - 130
4650148	JK2	Method Blank	Gross Alpha	2016/09/16	<0.10		Bq/L	
			Gross Beta	2016/09/16	<0.10		Bq/L	
4650148	JK2	RPD	Gross Alpha	2016/09/16	NC		%	N/A
			Gross Beta	2016/09/16	NC		%	N/A
4654524	JK2	Spiked Blank	Gross Alpha	2016/09/19		85	%	60 - 140
			Gross Beta	2016/09/19		105	%	70 - 130
4654524	JK2	Method Blank	Gross Alpha	2016/09/19	<0.10		Bq/L	
			Gross Beta	2016/09/19	<0.10		Bq/L	
4654524	JK2	RPD [DAQ658-01]	Gross Alpha	2016/09/19	NC		%	N/A
			Gross Beta	2016/09/19	NC		%	N/A

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

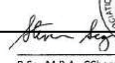
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Steven Simpson, Lab Director



Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

El Bonanza/Bonanza

Your Project #: 234.01016.00000
Site#: El Bonanza / Bonanza
Site Location: El Bonanza / Bonanza
Your C.O.C. #: 504158-04-01, 504158-03-01

Attention:Katrina Nokleby

SLR CONSULTING (CANADA) LTD
#200 - 1620 WEST 8TH AVENUE
VANCOUVER, BC
Canada V6J 1V4

Report Date: 2017/04/10
Report #: R2367571
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B676083

Received: 2016/09/02, 15:28

Sample Matrix: Water
Samples Received: 16

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO ₃ ,HCO ₃ ,OH	16	N/A	2016/09/06	AB SOP-00005	SM 22 2320 B m
BTEX/F1 in Water by HS GC/MS/FID	6	N/A	2016/09/09	AB SOP-00039	CCME CWS/EPA 8260c m
Chloride by Automated Colourimetry	16	N/A	2016/09/07	AB SOP-00020	SM 22 4500-Cl G m
Total Hexavalent Chromium	1	N/A	2016/09/06	AB SOP-00063	SM 22 3500-Cr B m
Carbon (DOC) (2)	16	N/A	2016/09/09	EENVSOP-00060	MMCW 119 1996 m
Conductivity @25C	16	N/A	2016/09/06	AB SOP-00005	SM 22 2510 B m
CCME Hydrocarbons (F2-F4 in water) (3)	6	2016/09/08	2016/09/09	AB SOP-00037 / AB SOP-00040	CCME PHC-CWS m
Hardness Total (calculated as CaCO ₃) (1)	16	N/A	2016/09/12	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO ₃) (1)	2	N/A	2016/09/12	BBY WI-00033	Auto Calc
Mercury (Dissolved) by CVAf (1)	2	N/A	2016/09/09	BBY7SOP-00015	BCMOE BCLM Oct2013 m
Mercury (Total) by CVAf (1)	16	2016/09/09	2016/09/09	BBY7SOP-00015	BCMOE BCLM Oct2013 m
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (1)	2	N/A	2016/09/12	BBY7SOP-00002	EPA 6020A R1 m
Elements by CRC ICPMS (dissolved) (1)	2	N/A	2016/09/10	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (1)	16	2016/09/05	2016/09/12	BBY7SOP-00002	EPA 6020A R1 m
Elements by CRC ICPMS (total) (1)	1	2016/09/08	2016/09/12	BBY7SOP-00003,	BCLM2005,EPA6020bR2m
Elements by CRC ICPMS (total) (1)	15	2016/09/09	2016/09/12	BBY7SOP-00003,	BCLM2005,EPA6020bR2m
Ammonia-N (Total)	16	N/A	2016/09/07	AB SOP-00007	EPA 350.1 R2.0 m
Nitrate and Nitrite	16	N/A	2016/09/07	AB WI-00065	Auto Calc
Nitrate + Nitrite-N (calculated)	16	N/A	2016/09/07	AB WI-00065	Auto Calc
Nitrogen, (Nitrite, Nitrate) by IC (4)	1	N/A	2016/09/06	AB SOP-00023	SM 22 4110 B m
Nitrogen, (Nitrite, Nitrate) by IC (4)	15	N/A	2016/09/07	AB SOP-00023	SM 22 4110 B m
Filter and HNO ₃ Preserve for Metals (1)	2	N/A	2016/09/12	BBY7 WI-00004	BCMOE Reqs 08/14
pH @25°C (5)	16	N/A	2016/09/06	AB SOP-00005	SM 22 4500 H+ B m
Orthophosphate by Konelab (4)	16	N/A	2016/09/06	AB SOP-00025	SM 22 4500-P A,B m
Sulphate by Automated Colourimetry	16	N/A	2016/09/07	AB SOP-00018	SM 22 4500-SO ₄ E m
Total Dissolved Solids (Filt. Residue)	16	2016/09/06	2016/09/08	AB SOP-00065	SM 22 2540 C m
Phosphorus -P (Total, Dissolved)	16	2016/09/06	2016/09/07	AB SOP-00024	SM 22 4500-P A,B,F m
Total Phosphorus	16	2016/09/06	2016/09/07	AB SOP-00024	SM 22 4500-P A,B,F m
Total Suspended Solids (NFR)	9	2016/09/06	2016/09/06	AB SOP-00061	SM 22 2540 D m

Your Project #: 234.01016.00000
Site#: El Bonanza / Bonanza
Site Location: El Bonanza / Bonanza
Your C.O.C. #: 504158-04-01, 504158-03-01

Attention:Katrina Nokleby

SLR CONSULTING (CANADA) LTD
#200 - 1620 WEST 8TH AVENUE
VANCOUVER, BC
Canada V6J 1V4

Report Date: 2017/04/10
Report #: R2367571
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B676083

Received: 2016/09/02, 15:28

Sample Matrix: Water
Samples Received: 16

Analyses	Date		Laboratory Method	Analytical Method
	Quantity	Extracted	Analyzed	
Total Suspended Solids (NFR)	7	2016/09/06	2016/09/07 AB SOP-00061	SM 22 2540 D m
Turbidity (4)	16	N/A	2016/09/06 EENV SOP-00066	SM 22 2130 B m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

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

Results relate to samples tested.

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

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

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

(1) This test was performed by Maxxam Vancouver

(2) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: Whenever applicable, Dissolved > Total for any parameter that falls within method uncertainty for duplicates is likely equivalent. If RPD is >20% samples were reanalyzed and confirmed.

(3) Silica gel clean up employed.

(4) Analysis completed within 48h after laboratory receipt to a maximum of five days from sampling is satisfactory for compliance purposes.

(5) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Maxxam endeavours to analyze samples as soon as possible after receipt.

Your Project #: 234.01016.00000
Site#: El Bonanza / Bonanza
Site Location: El Bonanza / Bonanza
Your C.O.C. #: 504158-04-01, 504158-03-01

Attention:Katrina Nokleby

SLR CONSULTING (CANADA) LTD
#200 - 1620 WEST 8TH AVENUE
VANCOUVER, BC
Canada V6J 1V4

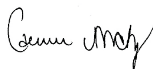
Report Date: 2017/04/10
Report #: R2367571
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B676083

Received: 2016/09/02, 15:28

Encryption Key



Carmen McKay
Project Manager
10 Apr 2017 11:26:55

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Carmen McKay, Project Manager

Email: CMcKay@maxxam.ca

Phone# (403)219-3683

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B676083
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: El Bonanza / Bonanza
Sampler Initials: DAP, DSK

AT1 BTEX AND F1-F4 IN WATER (WATER)

Maxxam ID		PL0462		PL0469	PL0471	PL0473	PL0474		
Sampling Date		2016/08/30 10:16		2016/08/30 13:31	2016/08/30 14:56	2016/08/30 16:21	2016/08/30 16:34		
COC Number		504158-04-01		504158-04-01	504158-04-01	504158-03-01	504158-03-01		
	UNITS	ELB-8-SL	QC Batch	ELB-4-ML	BON-SW-1	ELB-9-GBL-2	ELB-1-GBL	RDL	QC Batch
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	8391316	<0.10	<0.10	<0.10	<0.10	0.10	8391316
F3 (C16-C34 Hydrocarbons)	mg/L	<0.20	8391316	<0.20	<0.20	<0.20	<0.20	0.20	8391316
F4 (C34-C50 Hydrocarbons)	mg/L	<0.20	8391316	<0.20	<0.20	<0.20	<0.20	0.20	8391316
Reached Baseline at C50	mg/L	Yes	8391316	Yes	Yes	Yes	Yes		8391316
Volatiles									
Benzene	ug/L	<0.40	8392696	<0.40	<0.40	<0.40	<0.40	0.40	8392695
Toluene	ug/L	<0.40	8392696	<0.40	<0.40	<0.40	<0.40	0.40	8392695
Ethylbenzene	ug/L	<0.40	8392696	<0.40	<0.40	<0.40	<0.40	0.40	8392695
m & p-Xylene	ug/L	<0.80	8392696	<0.80	<0.80	<0.80	<0.80	0.80	8392695
o-Xylene	ug/L	<0.40	8392696	<0.40	<0.40	<0.40	<0.40	0.40	8392695
Xylenes (Total)	ug/L	<0.80	8392696	<0.80	<0.80	<0.80	<0.80	0.80	8392695
F1 (C6-C10) - BTEX	ug/L	<100	8392696	<100	<100	<100	<100	100	8392695
F1 (C6-C10)	ug/L	<100	8392696	<100	<100	<100	<100	100	8392695
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	104	8392696	100	102	102	103		8392695
4-Bromofluorobenzene (sur.)	%	99	8392696	99	99	100	99		8392695
D4-1,2-Dichloroethane (sur.)	%	107	8392696	109	106	107	108		8392695
O-TERPHENYL (sur.)	%	88	8391316	89	90	90	91		8391316
RDL = Reportable Detection Limit									

Maxxam Job #: B676083
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: El Bonanza / Bonanza
Sampler Initials: DAP, DSK

AT1 BTEX AND F1-F4 IN WATER (WATER)

Maxxam ID		PL0475		
Sampling Date		2016/08/30 16:34		
COC Number		504158-03-01		
	UNITS	DUP1	RDL	QC Batch
Ext. Pet. Hydrocarbon				
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	0.10	8391316
F3 (C16-C34 Hydrocarbons)	mg/L	<0.20	0.20	8391316
F4 (C34-C50 Hydrocarbons)	mg/L	<0.20	0.20	8391316
Reached Baseline at C50	mg/L	Yes		8391316
Volatiles				
Benzene	ug/L	<0.40	0.40	8392695
Toluene	ug/L	<0.40	0.40	8392695
Ethylbenzene	ug/L	<0.40	0.40	8392695
m & p-Xylene	ug/L	<0.80	0.80	8392695
o-Xylene	ug/L	<0.40	0.40	8392695
Xylenes (Total)	ug/L	<0.80	0.80	8392695
F1 (C6-C10) - BTEX	ug/L	<100	100	8392695
F1 (C6-C10)	ug/L	<100	100	8392695
Surrogate Recovery (%)				
1,4-Difluorobenzene (sur.)	%	104		8392695
4-Bromofluorobenzene (sur.)	%	97		8392695
D4-1,2-Dichloroethane (sur.)	%	105		8392695
O-TERPHENYL (sur.)	%	97		8391316
RDL = Reportable Detection Limit				

Maxxam Job #: B676083
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: El Bonanza / Bonanza
Sampler Initials: DAP, DSK

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		PL0462	PL0463	PL0464	PL0465	PL0466	PL0467		
Sampling Date		2016/08/30 10:16	2016/08/30 10:27	2016/08/30 11:38	2016/08/30 12:15	2016/08/30 12:30	2016/08/30 12:56		
COC Number		504158-04-01	504158-04-01	504158-04-01	504158-04-01	504158-04-01	504158-04-01		
	UNITS	ELB-8-SL	ELB-7-SL-2	ELB-7-SL	ELB-5-SL-2	ELB-5-SL-10	ELB-SW-2	RDL	QC Batch

Calculated Parameters

Filter and HNO ₃ Preservation	N/A		FIELD	FIELD					ONSITE
Dissolved Nitrate (NO ₃)	mg/L	<0.044	<0.044	<0.044	<0.044	<0.044	<0.044	0.044	8387896
Nitrate plus Nitrite (N)	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	8387897
Dissolved Nitrite (NO ₂)	mg/L	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	0.033	8387896

Misc. Inorganics

Conductivity	uS/cm	61	61	61	60	52	62	1.0	8388117
Dissolved Organic Carbon (C)	mg/L	4.9	3.7	3.6	5.3	4.0	4.6	0.50	8393003
pH	pH	7.58	7.59	7.56	7.56	7.16	7.28	N/A	8388113
Total Dissolved Solids	mg/L	36	56	44	36	20	40	10	8388645
Total Suspended Solids	mg/L	1.3	2.0	2.0	2.7	<1.0	<1.0	1.0	8388474

Anions

Alkalinity (PP as CaCO ₃)	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8388116
Alkalinity (Total as CaCO ₃)	mg/L	31	32	29	31	26	29	0.50	8388116
Bicarbonate (HCO ₃)	mg/L	37	39	35	38	32	35	0.50	8388116
Carbonate (CO ₃)	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8388116
Hydroxide (OH)	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8388116
Dissolved Sulphate (SO ₄)	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	8388007
Dissolved Chloride (Cl)	mg/L	<1.0	<1.0	<1.0	1.2	<1.0	<1.0	1.0	8388006

Metals

Total Hex. Chromium (Cr 6+)	mg/L		<0.0010					0.0010	8388282
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Nutrients

Total Ammonia (N)	mg/L	<0.0067 (1)	<0.0067 (1)	<0.0067 (1)	0.010 (1)	<0.0067 (1)	<0.0067 (1)	0.0067	8390051
Orthophosphate (P)	mg/L	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0030	8388115
Dissolved Phosphorus (P)	mg/L	0.0030	0.0030	0.0050	0.0030	0.0050	0.0040	0.0030	8388577
Total Phosphorus (P)	mg/L	0.0050	0.0030	0.016	0.0060	0.0070	0.0040	0.0030	8388607
Dissolved Nitrite (N)	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	8388553
Dissolved Nitrate (N)	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	8388553

Physical Properties

Turbidity	NTU	0.38	0.29	0.35	0.33	0.56	0.34	0.10	8388489
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RDL = Reportable Detection Limit

N/A = Not Applicable

(1) Detection limit for ammonia calculated based on method detection limits (MDL) by client request.

Maxxam Job #: B676083
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: El Bonanza / Bonanza
Sampler Initials: DAP, DSK

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		PL0468	PL0469		PL0470	PL0471	PL0472		
Sampling Date		2016/08/30 13:17	2016/08/30 13:31		2016/08/30 14:03	2016/08/30 14:56	2016/08/30 14:10		
COC Number		504158-04-01	504158-04-01		504158-04-01	504158-04-01	504158-03-01		
	UNITS	ELB-6-SL	ELB-4-ML	QC Batch	ELB-3-ML-2	BON-SW-1	ELB-3-ML-10	RDL	QC Batch
Calculated Parameters									
Dissolved Nitrate (NO ₃)	mg/L	0.18	0.20	8387896	0.44	0.14	0.60	0.044	8387896
Nitrate plus Nitrite (N)	mg/L	0.041	0.045	8387897	0.099	0.032	0.14	0.020	8387897
Dissolved Nitrite (NO ₂)	mg/L	<0.033	<0.033	8387896	<0.033	<0.033	<0.033	0.033	8387896
Misc. Inorganics									
Conductivity	uS/cm	61	61	8388117	61	88	60	1.0	8388117
Dissolved Organic Carbon (C)	mg/L	5.7	5.4	8393003	5.3	5.5	3.8	0.50	8393003
pH	pH	7.53	7.57	8388113	7.58	7.76	7.53	N/A	8388113
Total Dissolved Solids	mg/L	56	56	8388645	44	72	48	10	8388645
Total Suspended Solids	mg/L	7.3	<1.0	8388474	<1.0	3.3	<1.0	1.0	8388666
Anions									
Alkalinity (PP as CaCO ₃)	mg/L	<0.50	<0.50	8388116	<0.50	<0.50	<0.50	0.50	8388116
Alkalinity (Total as CaCO ₃)	mg/L	29	27	8388116	28	44	26	0.50	8388116
Bicarbonate (HCO ₃)	mg/L	36	33	8388116	34	54	32	0.50	8388116
Carbonate (CO ₃)	mg/L	<0.50	<0.50	8388116	<0.50	<0.50	<0.50	0.50	8388116
Hydroxide (OH)	mg/L	<0.50	<0.50	8388116	<0.50	<0.50	<0.50	0.50	8388116
Dissolved Sulphate (SO ₄)	mg/L	<1.0	<1.0	8388007	<1.0	<1.0	<1.0	1.0	8388007
Dissolved Chloride (Cl)	mg/L	<1.0	<1.0	8388006	<1.0	<1.0	<1.0	1.0	8388006
Nutrients									
Total Ammonia (N)	mg/L	<0.0067 (1)	<0.0067 (1)	8390051	<0.0067 (1)	<0.0067 (1)	<0.0067 (1)	0.0067	8390056
Orthophosphate (P)	mg/L	<0.0030	<0.0030	8388115	<0.0030	<0.0030	<0.0030	0.0030	8388115
Dissolved Phosphorus (P)	mg/L	0.0040	0.0030	8388577	0.0040	0.0050	0.0040	0.0030	8388577
Total Phosphorus (P)	mg/L	0.0070	0.0040	8388607	0.0050	0.0090	0.0040	0.0030	8388607
Dissolved Nitrite (N)	mg/L	<0.010	<0.010	8388553	<0.010	<0.010	<0.010	0.010	8388553
Dissolved Nitrate (N)	mg/L	0.041	0.045	8388553	0.099	0.032	0.14	0.010	8388553
Physical Properties									
Turbidity	NTU	0.31	0.37	8388489	0.19	0.20	0.21	0.10	8388489
RDL = Reportable Detection Limit									
N/A = Not Applicable									
(1) Detection limit for ammonia calculated based on method detection limits (MDL) by client request.									

Maxxam Job #: B676083
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: El Bonanza / Bonanza
Sampler Initials: DAP, DSK

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		PL0473	PL0474	PL0475	PL0476		PL0477		
Sampling Date		2016/08/30 16:21	2016/08/30 16:34	2016/08/30 16:34	2016/08/30 16:45				
COC Number		504158-03-01	504158-03-01	504158-03-01	504158-03-01		504158-03-01		
	UNITS	ELB-9-GBL-2	ELB-1-GBL	DUP1	DUPA	QC Batch	TRIP BLANK	RDL	QC Batch
Calculated Parameters									
Dissolved Nitrate (NO3)	mg/L	0.60	0.67	0.66	<0.044	8387896	<0.044	0.044	8387896
Nitrate plus Nitrite (N)	mg/L	0.14	0.15	0.15	<0.020	8387897	<0.020	0.020	8387897
Dissolved Nitrite (NO2)	mg/L	<0.033	<0.033	<0.033	<0.033	8387896	<0.033	0.033	8387896
Misc. Inorganics									
Conductivity	uS/cm	160	160	160	<1.0	8388117	<1.0	1.0	8388117
Dissolved Organic Carbon (C)	mg/L	2.9	3.0	1.6	1.2	8393003	<0.50	0.50	8393003
pH	pH	7.87	7.88	7.89	4.89	8388113	4.71	N/A	8388113
Total Dissolved Solids	mg/L	92	92	100	<10	8388645	<10	10	8388645
Total Suspended Solids	mg/L	<1.0	2.7	3.3	<1.0	8388666	<1.0	1.0	8388474
Anions									
Alkalinity (PP as CaCO3)	mg/L	<0.50	<0.50	<0.50	<0.50	8388116	<0.50	0.50	8388116
Alkalinity (Total as CaCO3)	mg/L	59	57	58	<0.50	8388116	<0.50	0.50	8388116
Bicarbonate (HCO3)	mg/L	72	69	71	<0.50	8388116	<0.50	0.50	8388116
Carbonate (CO3)	mg/L	<0.50	<0.50	<0.50	<0.50	8388116	<0.50	0.50	8388116
Hydroxide (OH)	mg/L	<0.50	<0.50	<0.50	<0.50	8388116	<0.50	0.50	8388116
Dissolved Sulphate (SO4)	mg/L	17	17	17	<1.0	8388007	<1.0	1.0	8388007
Dissolved Chloride (Cl)	mg/L	4.4	4.6	4.8	<1.0	8388006	<1.0	1.0	8388006
Nutrients									
Total Ammonia (N)	mg/L	<0.0067 (1)	<0.0067 (1)	0.098 (1)	<0.0067 (1)	8390056	<0.0067 (1)	0.0067	8390056
Orthophosphate (P)	mg/L	<0.0030	<0.0030	<0.0030	<0.0030	8388115	<0.0030	0.0030	8388115
Dissolved Phosphorus (P)	mg/L	0.0030	0.0030	0.0030	0.0030	8388577	0.0030	0.0030	8388577
Total Phosphorus (P)	mg/L	<0.0030	0.0040	0.0070	0.0030	8388607	<0.0030	0.0030	8388607
Dissolved Nitrite (N)	mg/L	<0.010	<0.010	<0.010	<0.010	8388553	<0.010	0.010	8388553
Dissolved Nitrate (N)	mg/L	0.14	0.15	0.15	<0.010	8388553	<0.010	0.010	8388553
Physical Properties									
Turbidity	NTU	0.12	0.85	0.89	<0.10	8388489	<0.10	0.10	8388489
RDL = Reportable Detection Limit									
N/A = Not Applicable									
(1) Detection limit for ammonia calculated based on method detection limits (MDL) by client request.									

Maxxam Job #: B676083
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: El Bonanza / Bonanza
Sampler Initials: DAP, DSK

CSR/CCME DISS. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL0463	PL0464		
Sampling Date		2016/08/30 10:27	2016/08/30 11:38		
COC Number		504158-04-01	504158-04-01		
	UNITS	ELB-7-SL-2	ELB-7-SL	RDL	QC Batch
Misc. Inorganics					
Dissolved Hardness (CaCO ₃)	mg/L	29.0	29.3	0.50	8387921
Elements					
Dissolved Mercury (Hg)	ug/L	0.018	<0.010	0.010	8392334
Dissolved Metals by ICPMS					
Dissolved Aluminum (Al)	ug/L	5.1	5.6	3.0	8391655
Dissolved Antimony (Sb)	ug/L	<0.50	<0.50	0.50	8391655
Dissolved Arsenic (As)	ug/L	0.18	0.20	0.10	8391655
Dissolved Barium (Ba)	ug/L	6.9	6.8	1.0	8391655
Dissolved Beryllium (Be)	ug/L	<0.10	<0.10	0.10	8391655
Dissolved Bismuth (Bi)	ug/L	<1.0	<1.0	1.0	8391655
Dissolved Boron (B)	ug/L	<50	<50	50	8391655
Dissolved Cadmium (Cd)	ug/L	<0.010	0.012	0.010	8391655
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	1.0	8391655
Dissolved Cobalt (Co)	ug/L	<0.50	<0.50	0.50	8391655
Dissolved Copper (Cu)	ug/L	1.44	1.59	0.20	8391655
Dissolved Iron (Fe)	ug/L	31.4	32.5	5.0	8391655
Dissolved Lead (Pb)	ug/L	<0.20	<0.20	0.20	8391655
Dissolved Lithium (Li)	ug/L	<5.0	<5.0	5.0	8391655
Dissolved Manganese (Mn)	ug/L	1.3	1.1	1.0	8391655
Dissolved Molybdenum (Mo)	ug/L	<1.0	<1.0	1.0	8391655
Dissolved Nickel (Ni)	ug/L	<1.0	<1.0	1.0	8391655
Dissolved Selenium (Se)	ug/L	<0.10	<0.10	0.10	8391655
Dissolved Silicon (Si)	ug/L	629	592	100	8391655
Dissolved Silver (Ag)	ug/L	<0.020	<0.020	0.020	8391655
Dissolved Strontium (Sr)	ug/L	12.5	12.9	1.0	8391655
Dissolved Thallium (Tl)	ug/L	<0.050	<0.050	0.050	8391655
Dissolved Tin (Sn)	ug/L	<5.0	<5.0	5.0	8391655
Dissolved Titanium (Ti)	ug/L	<5.0	<5.0	5.0	8391655
Dissolved Uranium (U)	ug/L	0.12	0.12	0.10	8391655
Dissolved Vanadium (V)	ug/L	<5.0	<5.0	5.0	8391655
Dissolved Zinc (Zn)	ug/L	<5.0	7.3	5.0	8391655
RDL = Reportable Detection Limit					

Maxxam Job #: B676083
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: El Bonanza / Bonanza
Sampler Initials: DAP, DSK

CSR/CCME DISS. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL0463	PL0464		
Sampling Date		2016/08/30 10:27	2016/08/30 11:38		
COC Number		504158-04-01	504158-04-01		
	UNITS	ELB-7-SL-2	ELB-7-SL	RDL	QC Batch
Dissolved Zirconium (Zr)	ug/L	<0.50	<0.50	0.50	8391655
Dissolved Calcium (Ca)	mg/L	8.01	8.07	0.050	8387922
Dissolved Magnesium (Mg)	mg/L	2.19	2.22	0.050	8387922
Dissolved Potassium (K)	mg/L	0.418	0.427	0.050	8387922
Dissolved Sodium (Na)	mg/L	0.875	0.918	0.050	8387922
Dissolved Sulphur (S)	mg/L	<3.0	<3.0	3.0	8387922
RDL = Reportable Detection Limit					

Maxxam Job #: B676083
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: El Bonanza / Bonanza
Sampler Initials: DAP, DSK

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL0462	PL0463	PL0464	PL0465	PL0466	PL0467		
Sampling Date		2016/08/30 10:16	2016/08/30 10:27	2016/08/30 11:38	2016/08/30 12:15	2016/08/30 12:30	2016/08/30 12:56		
COC Number		504158-04-01	504158-04-01	504158-04-01	504158-04-01	504158-04-01	504158-04-01		
	UNITS	ELB-8-SL	ELB-7-SL-2	ELB-7-SL	ELB-5-SL-2	ELB-5-SL-10	ELB-SW-2	RDL	QC Batch
Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L	29.7	29.9	29.2	29.4	25.2	29.6	0.50	8387920
Elements									
Total Mercury (Hg)	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	8392777
Total Metals by ICPMS									
Total Aluminum (Al)	ug/L	13.3	6.7	11.9	10.6	10.2	10.3	3.0	8392668
Total Antimony (Sb)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8392668
Total Arsenic (As)	ug/L	0.20	0.22	0.23	0.18	<0.10	0.22	0.10	8392668
Total Barium (Ba)	ug/L	6.5	6.5	6.4	6.2	6.4	7.1	1.0	8392668
Total Beryllium (Be)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	8392668
Total Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	8392668
Total Boron (B)	ug/L	<50	<50	<50	<50	<50	<50	50	8392668
Total Cadmium (Cd)	ug/L	<0.010	<0.010	0.011	<0.010	<0.010	<0.010	0.010	8392668
Total Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	8392668
Total Cobalt (Co)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8392668
Total Copper (Cu)	ug/L	1.23	1.17	1.71	1.19	0.91	1.02	0.50	8392668
Total Iron (Fe)	ug/L	76	64	68	64	35	139	10	8392668
Total Lead (Pb)	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	8392668
Total Lithium (Li)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8392668
Total Manganese (Mn)	ug/L	10.6	7.8	9.2	8.8	12.2	29.9	1.0	8392668
Total Molybdenum (Mo)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	8392668
Total Nickel (Ni)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	8392668
Total Selenium (Se)	ug/L	<0.10	<0.10	0.14	0.14	<0.10	0.12	0.10	8392668
Total Silicon (Si)	ug/L	563	609	587	554	1260	665	100	8392668
Total Silver (Ag)	ug/L	0.036	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	8392668
Total Strontium (Sr)	ug/L	12.1	12.3	11.8	11.4	11.2	12.3	1.0	8392668
Total Thallium (Tl)	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8392668
Total Tin (Sn)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8392668
Total Titanium (Ti)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8392668
Total Uranium (U)	ug/L	0.26	0.14	0.15	0.14	<0.10	0.10	0.10	8392668
Total Vanadium (V)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8392668
Total Zinc (Zn)	ug/L	<5.0	<5.0	12.1	<5.0	<5.0	<5.0	5.0	8392668
RDL = Reportable Detection Limit									

Maxxam Job #: B676083
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: El Bonanza / Bonanza
Sampler Initials: DAP, DSK

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL0462	PL0463	PL0464	PL0465	PL0466	PL0467		
Sampling Date		2016/08/30 10:16	2016/08/30 10:27	2016/08/30 11:38	2016/08/30 12:15	2016/08/30 12:30	2016/08/30 12:56		
COC Number		504158-04-01	504158-04-01	504158-04-01	504158-04-01	504158-04-01	504158-04-01		
	UNITS	ELB-8-SL	ELB-7-SL-2	ELB-7-SL	ELB-5-SL-2	ELB-5-SL-10	ELB-SW-2	RDL	QC Batch
Total Zirconium (Zr)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8392668
Total Calcium (Ca)	mg/L	7.88	8.01	7.86	7.85	6.83	7.92	0.050	8387923
Total Magnesium (Mg)	mg/L	2.43	2.41	2.34	2.38	1.96	2.38	0.050	8387923
Total Potassium (K)	mg/L	0.362	0.396	0.369	0.363	0.355	0.353	0.050	8387923
Total Sodium (Na)	mg/L	0.920	0.897	0.950	0.908	0.739	0.907	0.050	8387923
Total Sulphur (S)	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	3.0	8387923
RDL = Reportable Detection Limit									

Maxxam Job #: B676083
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: El Bonanza / Bonanza
Sampler Initials: DAP, DSK

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL0468	PL0469	PL0470	PL0471	PL0472	PL0473		
Sampling Date		2016/08/30 13:17	2016/08/30 13:31	2016/08/30 14:03	2016/08/30 14:56	2016/08/30 14:10	2016/08/30 16:21		
COC Number		504158-04-01	504158-04-01	504158-04-01	504158-04-01	504158-03-01	504158-03-01		
	UNITS	ELB-6-SL	ELB-4-ML	ELB-3-ML-2	BON-SW-1	ELB-3-ML-10	ELB-9-GBL-2	RDL	QC Batch

Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L	28.7	29.1	29.1	42.6	27.9	70.0	0.50	8387920
Elements									
Total Mercury (Hg)	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	8392777
Total Metals by ICPMS									
Total Aluminum (Al)	ug/L	21.9	114	11.4	9.8	9.8	6.2	3.0	8392668
Total Antimony (Sb)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8392668
Total Arsenic (As)	ug/L	0.19	0.16	0.12	0.14	0.17	0.15	0.10	8392668
Total Barium (Ba)	ug/L	5.6	5.1	5.0	5.1	5.1	22.4	1.0	8392668
Total Beryllium (Be)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	8392668
Total Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	8392668
Total Boron (B)	ug/L	<50	<50	<50	<50	<50	<50	50	8392668
Total Cadmium (Cd)	ug/L	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	8392668
Total Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	8392668
Total Cobalt (Co)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8392668
Total Copper (Cu)	ug/L	1.41	1.25	1.48	0.84	1.20	<0.50	0.50	8392668
Total Iron (Fe)	ug/L	61	16	<10	<10	<10	<10	10	8392668
Total Lead (Pb)	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	8392668
Total Lithium (Li)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8392668
Total Manganese (Mn)	ug/L	8.7	2.6	<1.0	<1.0	<1.0	<1.0	1.0	8392668
Total Molybdenum (Mo)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	8392668
Total Nickel (Ni)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	8392668
Total Selenium (Se)	ug/L	0.11	0.12	0.15	<0.10	0.16	<0.10	0.10	8392668
Total Silicon (Si)	ug/L	454	443	427	2470	469	1280	100	8392668
Total Silver (Ag)	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	8392668
Total Strontium (Sr)	ug/L	11.5	12.7	11.3	12.1	10.9	98.4	1.0	8392668
Total Thallium (Tl)	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8392668
Total Tin (Sn)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8392668
Total Titanium (Ti)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8392668
Total Uranium (U)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.30	0.10	8392668
Total Vanadium (V)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8392668
Total Zinc (Zn)	ug/L	<5.0	5.8	6.5	<5.0	<5.0	<5.0	5.0	8392668
RDL = Reportable Detection Limit									

Maxxam Job #: B676083
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: El Bonanza / Bonanza
Sampler Initials: DAP, DSK

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL0468	PL0469	PL0470	PL0471	PL0472	PL0473		
Sampling Date		2016/08/30 13:17	2016/08/30 13:31	2016/08/30 14:03	2016/08/30 14:56	2016/08/30 14:10	2016/08/30 16:21		
COC Number		504158-04-01	504158-04-01	504158-04-01	504158-04-01	504158-03-01	504158-03-01		
	UNITS	ELB-6-SL	ELB-4-ML	ELB-3-ML-2	BON-SW-1	ELB-3-ML-10	ELB-9-GBL-2	RDL	QC Batch
Total Zirconium (Zr)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8392668
Total Calcium (Ca)	mg/L	7.57	7.78	7.70	10.9	7.38	16.2	0.050	8387923
Total Magnesium (Mg)	mg/L	2.37	2.35	2.40	3.72	2.31	7.15	0.050	8387923
Total Potassium (K)	mg/L	0.363	0.364	0.382	0.715	0.373	0.662	0.050	8387923
Total Sodium (Na)	mg/L	0.851	0.851	0.870	0.990	0.840	4.07	0.050	8387923
Total Sulphur (S)	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	6.0	3.0	8387923
RDL = Reportable Detection Limit									

Maxxam Job #: B676083
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: El Bonanza / Bonanza
Sampler Initials: DAP, DSK

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL0474	PL0475	PL0476	PL0477		
Sampling Date		2016/08/30 16:34	2016/08/30 16:34	2016/08/30 16:45			
COC Number		504158-03-01	504158-03-01	504158-03-01	504158-03-01		
	UNITS	ELB-1-GBL	DUP1	DUPA	TRIP BLANK	RDL	QC Batch
Calculated Parameters							
Total Hardness (CaCO ₃)	mg/L	70.0	69.3	<0.50	<0.50	0.50	8387920
Elements							
Total Mercury (Hg)	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	8392777
Total Metals by ICPMS							
Total Aluminum (Al)	ug/L	25.6	23.5	4.6	<3.0	3.0	8392668
Total Antimony (Sb)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	8392668
Total Arsenic (As)	ug/L	0.21	0.19	<0.10	<0.10	0.10	8392668
Total Barium (Ba)	ug/L	22.4	23.1	<1.0	<1.0	1.0	8392668
Total Beryllium (Be)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	8392668
Total Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	8392668
Total Boron (B)	ug/L	<50	<50	<50	<50	50	8392668
Total Cadmium (Cd)	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	8392668
Total Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	8392668
Total Cobalt (Co)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	8392668
Total Copper (Cu)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	8392668
Total Iron (Fe)	ug/L	26	23	<10	<10	10	8392668
Total Lead (Pb)	ug/L	<0.20	<0.20	<0.20	<0.20	0.20	8392668
Total Lithium (Li)	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	8392668
Total Manganese (Mn)	ug/L	2.9	2.6	<1.0	<1.0	1.0	8392668
Total Molybdenum (Mo)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	8392668
Total Nickel (Ni)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	8392668
Total Selenium (Se)	ug/L	0.11	<0.10	<0.10	<0.10	0.10	8392668
Total Silicon (Si)	ug/L	1240	1160	<100	<100	100	8392668
Total Silver (Ag)	ug/L	<0.020	<0.020	<0.020	<0.020	0.020	8392668
Total Strontium (Sr)	ug/L	97.0	98.8	<1.0	<1.0	1.0	8392668
Total Thallium (Tl)	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	8392668
Total Tin (Sn)	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	8392668
Total Titanium (Ti)	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	8392668
Total Uranium (U)	ug/L	0.35	0.35	<0.10	<0.10	0.10	8392668
Total Vanadium (V)	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	8392668
Total Zinc (Zn)	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	8392668
RDL = Reportable Detection Limit							

Maxxam Job #: B676083
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: El Bonanza / Bonanza
Sampler Initials: DAP, DSK

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL0474	PL0475	PL0476	PL0477		
Sampling Date		2016/08/30 16:34	2016/08/30 16:34	2016/08/30 16:45			
COC Number		504158-03-01	504158-03-01	504158-03-01	504158-03-01		
	UNITS	ELB-1-GBL	DUP1	DUPA	TRIP BLANK	RDL	QC Batch
Total Zirconium (Zr)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	8392668
Total Calcium (Ca)	mg/L	16.2	16.0	0.082	<0.050	0.050	8387923
Total Magnesium (Mg)	mg/L	7.20	7.11	<0.050	<0.050	0.050	8387923
Total Potassium (K)	mg/L	0.675	0.668	<0.050	<0.050	0.050	8387923
Total Sodium (Na)	mg/L	4.08	4.03	<0.050	<0.050	0.050	8387923
Total Sulphur (S)	mg/L	5.9	4.9	<3.0	<3.0	3.0	8387923
RDL = Reportable Detection Limit							

Maxxam Job #: B676083
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: El Bonanza / Bonanza
Sampler Initials: DAP, DSK

GENERAL COMMENTS

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

Package 1	5.3°C
Package 2	4.0°C
Package 3	5.0°C
Package 4	4.0°C
Package 5	5.3°C

Report revised to include updated detection limits for Ammonia, per client request 2017/04/10

Sample PL0462 [ELB-8-SL] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0463 [ELB-7-SL-2] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0464 [ELB-7-SL] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0465 [ELB-5-SL-2] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0466 [ELB-5-SL-10] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0467 [ELB-SW-2] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0468 [ELB-6-SL] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0469 [ELB-4-ML] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0470 [ELB-3-ML-2] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0471 [BON-SW-1] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0472 [ELB-3-ML-10] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

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Sample PL0473 [ELB-9-GBL-2] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0474 [ELB-1-GBL] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0475 [DUP1] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0476 [DUPA] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

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Client Project #: 234.01016.00000
Site Location: El Bonanza / Bonanza
Sampler Initials: DAP, DSK

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8391316	O-TERPHENYL (sur.)	2016/09/09	86	60 - 130	100	60 - 130	97	%				
8392695	1,4-Difluorobenzene (sur.)	2016/09/09	101	70 - 130	100	70 - 130	103	%				
8392695	4-Bromofluorobenzene (sur.)	2016/09/09	99	70 - 130	99	70 - 130	99	%				
8392695	D4-1,2-Dichloroethane (sur.)	2016/09/09	109	70 - 130	110	70 - 130	108	%				
8392696	1,4-Difluorobenzene (sur.)	2016/09/09	100	70 - 130	100	70 - 130	101	%				
8392696	4-Bromofluorobenzene (sur.)	2016/09/09	99	70 - 130	98	70 - 130	100	%				
8392696	D4-1,2-Dichloroethane (sur.)	2016/09/09	107	70 - 130	106	70 - 130	109	%				
8388006	Dissolved Chloride (Cl)	2016/09/07	101	80 - 120	106	80 - 120	<1.0	mg/L	5.6	20		
8388007	Dissolved Sulphate (SO4)	2016/09/07	118	80 - 120	109	80 - 120	<1.0	mg/L	NC	20		
8388113	pH	2016/09/06			100	97 - 103			0.11	N/A		
8388115	Orthophosphate (P)	2016/09/06	101	80 - 120	101	80 - 120	<0.0030	mg/L	NC	20		
8388116	Alkalinity (PP as CaCO3)	2016/09/06					<0.50	mg/L	NC	20		
8388116	Alkalinity (Total as CaCO3)	2016/09/06			98	80 - 120	<0.50	mg/L	2.2	20		
8388116	Bicarbonate (HCO3)	2016/09/06					<0.50	mg/L	2.2	20		
8388116	Carbonate (CO3)	2016/09/06					<0.50	mg/L	NC	20		
8388116	Hydroxide (OH)	2016/09/06					<0.50	mg/L	NC	20		
8388117	Conductivity	2016/09/06			101	90 - 110	<1.0	uS/cm	0.16	10		
8388282	Total Hex. Chromium (Cr 6+)	2016/09/06	100	80 - 120	102	80 - 120	0.0010, RDL=0.0010	mg/L	NC	20		
8388474	Total Suspended Solids	2016/09/06	93	80 - 120	92	80 - 120	<1.0	mg/L	0	20		
8388489	Turbidity	2016/09/06			100	80 - 120	<0.10	NTU	1.0	20		
8388553	Dissolved Nitrate (N)	2016/09/06	99	80 - 120	100	80 - 120	<0.010	mg/L	NC	20		
8388553	Dissolved Nitrite (N)	2016/09/06	97	80 - 120	98	80 - 120	<0.010	mg/L	NC	20		
8388577	Dissolved Phosphorus (P)	2016/09/07	97	80 - 120	97	80 - 120	<0.0030	mg/L	NC	20	88	80 - 120
8388607	Total Phosphorus (P)	2016/09/07	NC	80 - 120	100	80 - 120	<0.0030	mg/L	11	20	92	80 - 120
8388645	Total Dissolved Solids	2016/09/08	NC	80 - 120	102	80 - 120	12, RDL=10	mg/L	1.2	20		
8388666	Total Suspended Solids	2016/09/07	89	80 - 120	95	80 - 120	<1.0	mg/L	NC	20		
8390051	Total Ammonia (N)	2016/09/07	99	80 - 120	100	80 - 120	<0.050	mg/L	NC	20		
8390056	Total Ammonia (N)	2016/09/07	110	80 - 120	104	80 - 120	<0.050	mg/L	1.9	20		
8391316	F2 (C10-C16 Hydrocarbons)	2016/09/09	94	60 - 130	110	70 - 130	<0.10	mg/L	NC	30		
8391316	F3 (C16-C34 Hydrocarbons)	2016/09/09	93	60 - 130	110	70 - 130	<0.20	mg/L	NC	30		

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SLR CONSULTING (CANADA) LTD
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Sampler Initials: DAP, DSK

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8391316	F4 (C34-C50 Hydrocarbons)	2016/09/09	83	60 - 130	97	70 - 130	<0.20	mg/L	NC	30		
8391655	Dissolved Aluminum (Al)	2016/09/10	107	80 - 120	109	80 - 120	<3.0	ug/L	NC	20		
8391655	Dissolved Antimony (Sb)	2016/09/10	102	80 - 120	100	80 - 120	<0.50	ug/L	NC	20		
8391655	Dissolved Arsenic (As)	2016/09/10	98	80 - 120	96	80 - 120	<0.10	ug/L	NC	20		
8391655	Dissolved Barium (Ba)	2016/09/10	101	80 - 120	103	80 - 120	<1.0	ug/L	NC	20		
8391655	Dissolved Beryllium (Be)	2016/09/10	100	80 - 120	99	80 - 120	<0.10	ug/L	NC	20		
8391655	Dissolved Bismuth (Bi)	2016/09/10	101	80 - 120	102	80 - 120	<1.0	ug/L	NC	20		
8391655	Dissolved Boron (B)	2016/09/10	97	80 - 120	100	80 - 120	<50	ug/L	NC	20		
8391655	Dissolved Cadmium (Cd)	2016/09/10	102	80 - 120	100	80 - 120	<0.010	ug/L	NC	20		
8391655	Dissolved Chromium (Cr)	2016/09/10	99	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		
8391655	Dissolved Cobalt (Co)	2016/09/10	100	80 - 120	99	80 - 120	<0.50	ug/L	NC	20		
8391655	Dissolved Copper (Cu)	2016/09/10	100	80 - 120	100	80 - 120	<0.20	ug/L	NC	20		
8391655	Dissolved Iron (Fe)	2016/09/10	106	80 - 120	110	80 - 120	<5.0	ug/L	NC	20		
8391655	Dissolved Lead (Pb)	2016/09/10	101	80 - 120	102	80 - 120	<0.20	ug/L	NC	20		
8391655	Dissolved Lithium (Li)	2016/09/10	98	80 - 120	99	80 - 120	<5.0	ug/L	NC	20		
8391655	Dissolved Manganese (Mn)	2016/09/10	99	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		
8391655	Dissolved Molybdenum (Mo)	2016/09/10	99	80 - 120	102	80 - 120	<1.0	ug/L	NC	20		
8391655	Dissolved Nickel (Ni)	2016/09/10	100	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		
8391655	Dissolved Selenium (Se)	2016/09/10	104	80 - 120	101	80 - 120	<0.10	ug/L	NC	20		
8391655	Dissolved Silicon (Si)	2016/09/10					<100	ug/L	NC	20		
8391655	Dissolved Silver (Ag)	2016/09/10	92	80 - 120	99	80 - 120	<0.020	ug/L	NC	20		
8391655	Dissolved Strontium (Sr)	2016/09/10	96	80 - 120	98	80 - 120	<1.0	ug/L	NC	20		
8391655	Dissolved Thallium (Tl)	2016/09/10	96	80 - 120	99	80 - 120	<0.050	ug/L	NC	20		
8391655	Dissolved Tin (Sn)	2016/09/10	100	80 - 120	101	80 - 120	<5.0	ug/L	NC	20		
8391655	Dissolved Titanium (Ti)	2016/09/10	83	80 - 120	87	80 - 120	<5.0	ug/L	NC	20		
8391655	Dissolved Uranium (U)	2016/09/10	100	80 - 120	101	80 - 120	<0.10	ug/L	NC	20		
8391655	Dissolved Vanadium (V)	2016/09/10	98	80 - 120	100	80 - 120	<5.0	ug/L	NC	20		
8391655	Dissolved Zinc (Zn)	2016/09/10	111	80 - 120	103	80 - 120	<5.0	ug/L	NC	20		
8391655	Dissolved Zirconium (Zr)	2016/09/10					<0.50	ug/L	NC	20		
8392334	Dissolved Mercury (Hg)	2016/09/09	91	80 - 120	96	80 - 120	<0.010	ug/L	NC	20		
8392668	Total Aluminum (Al)	2016/09/12	109	80 - 120	111	80 - 120	<3.0	ug/L	0.12	20		

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SLR CONSULTING (CANADA) LTD
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Sampler Initials: DAP, DSK

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8392668	Total Antimony (Sb)	2016/09/12	104	80 - 120	100	80 - 120	<0.50	ug/L	NC	20		
8392668	Total Arsenic (As)	2016/09/12	101	80 - 120	99	80 - 120	<0.10	ug/L	9.2	20		
8392668	Total Barium (Ba)	2016/09/12	NC	80 - 120	103	80 - 120	<1.0	ug/L	0.031	20		
8392668	Total Beryllium (Be)	2016/09/12	107	80 - 120	106	80 - 120	<0.10	ug/L	NC	20		
8392668	Total Bismuth (Bi)	2016/09/12	104	80 - 120	104	80 - 120	<1.0	ug/L	NC	20		
8392668	Total Boron (B)	2016/09/12	108	80 - 120	106	80 - 120	<50	ug/L	NC	20		
8392668	Total Cadmium (Cd)	2016/09/12	101	80 - 120	99	80 - 120	<0.010	ug/L	NC	20		
8392668	Total Chromium (Cr)	2016/09/12	102	80 - 120	105	80 - 120	<1.0	ug/L	NC	20		
8392668	Total Cobalt (Co)	2016/09/12	100	80 - 120	103	80 - 120	<0.50	ug/L	NC	20		
8392668	Total Copper (Cu)	2016/09/12	99	80 - 120	102	80 - 120	<0.50	ug/L	1.7	20		
8392668	Total Iron (Fe)	2016/09/12	NC	80 - 120	104	80 - 120	<10	ug/L	3.7	20		
8392668	Total Lead (Pb)	2016/09/12	106	80 - 120	102	80 - 120	<0.20	ug/L	NC	20		
8392668	Total Lithium (Li)	2016/09/12	105	80 - 120	106	80 - 120	<5.0	ug/L	NC	20		
8392668	Total Manganese (Mn)	2016/09/12	NC	80 - 120	101	80 - 120	<1.0	ug/L	1.3	20		
8392668	Total Molybdenum (Mo)	2016/09/12	106	80 - 120	104	80 - 120	<1.0	ug/L	NC	20		
8392668	Total Nickel (Ni)	2016/09/12	102	80 - 120	106	80 - 120	<1.0	ug/L	NC	20		
8392668	Total Selenium (Se)	2016/09/12	105	80 - 120	104	80 - 120	<0.10	ug/L	NC	20		
8392668	Total Silicon (Si)	2016/09/12					<100	ug/L	2.7	20		
8392668	Total Silver (Ag)	2016/09/12	110	80 - 120	97	80 - 120	<0.020	ug/L	NC	20		
8392668	Total Strontium (Sr)	2016/09/12	NC	80 - 120	93	80 - 120	<1.0	ug/L	1.7	20		
8392668	Total Thallium (Tl)	2016/09/12	94	80 - 120	99	80 - 120	<0.050	ug/L	NC	20		
8392668	Total Tin (Sn)	2016/09/12	103	80 - 120	102	80 - 120	<5.0	ug/L	NC	20		
8392668	Total Titanium (Ti)	2016/09/12	104	80 - 120	104	80 - 120	<5.0	ug/L	NC	20		
8392668	Total Uranium (U)	2016/09/12	108	80 - 120	104	80 - 120	<0.10	ug/L	4.3	20		
8392668	Total Vanadium (V)	2016/09/12	103	80 - 120	102	80 - 120	<5.0	ug/L	NC	20		
8392668	Total Zinc (Zn)	2016/09/12	102	80 - 120	108	80 - 120	<5.0	ug/L	NC	20		
8392668	Total Zirconium (Zr)	2016/09/12					<0.50	ug/L	NC	20		
8392695	Benzene	2016/09/09	99	70 - 130	93	70 - 130	<0.40	ug/L	NC	30		
8392695	Ethylbenzene	2016/09/09	101	70 - 130	93	70 - 130	<0.40	ug/L	NC	30		
8392695	F1 (C6-C10) - BTEX	2016/09/09					<100	ug/L	NC	30		
8392695	F1 (C6-C10)	2016/09/09	86	70 - 130	100	70 - 130	<100	ug/L	NC	30		

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QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8392695	m & p-Xylene	2016/09/09	102	70 - 130	93	70 - 130	<0.80	ug/L	NC	30		
8392695	o-Xylene	2016/09/09	101	70 - 130	93	70 - 130	<0.40	ug/L	NC	30		
8392695	Toluene	2016/09/09	97	70 - 130	89	70 - 130	<0.40	ug/L	NC	30		
8392695	Xylenes (Total)	2016/09/09					<0.80	ug/L	NC	30		
8392696	Benzene	2016/09/09	98	70 - 130	86	70 - 130	<0.40	ug/L	NC	30		
8392696	Ethylbenzene	2016/09/09	98	70 - 130	87	70 - 130	<0.40	ug/L	NC	30		
8392696	F1 (C6-C10) - BTEX	2016/09/09					<100	ug/L	NC	30		
8392696	F1 (C6-C10)	2016/09/09	86	70 - 130	101	70 - 130	<100	ug/L	NC	30		
8392696	m & p-Xylene	2016/09/09	98	70 - 130	87	70 - 130	<0.80	ug/L	NC	30		
8392696	o-Xylene	2016/09/09	97	70 - 130	87	70 - 130	<0.40	ug/L	NC	30		
8392696	Toluene	2016/09/09	93	70 - 130	82	70 - 130	<0.40	ug/L	NC	30		
8392696	Xylenes (Total)	2016/09/09					<0.80	ug/L	NC	30		
8392777	Total Mercury (Hg)	2016/09/09	92	80 - 120	98	80 - 120	<0.010	ug/L	NC	20		
8393003	Dissolved Organic Carbon (C)	2016/09/09	120	80 - 120	105	80 - 120	<0.50	mg/L	1.4	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

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SLR CONSULTING (CANADA) LTD
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Sampler Initials: DAP, DSK

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Anna Koksharova, M.Sc., Organics Senior Analyst



Andy Lu, Ph.D., P.Chem., Scientific Specialist



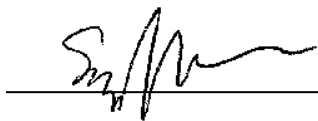
Justin Geisel, B.Sc., Organics Supervisor



Maria Magdalena Florescu, Ph.D., P.Chem., QP, Inorganics Senior Analyst



Suwan Fock, B.Sc., QP, Inorganics Senior Analyst



Sandy Yuan, M.Sc., Scientific Specialist

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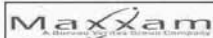
Maxxam Analytics International Corporation o/a Maxxam Analytics
Unit 105 - 349 Old Airport Road, Yellowknife, North West Territories Canada X1A 3X6 Tel: (867) 445-2448 Toll-free 800-563-6266 Fax: (905) 817-5779 www.maxxam.ca

Chain Of Custody Record

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INVOICE TO:		Report Information		Project Information		Laboratory Use Only									
Company Name	#1776 SLR CONSULTING (CANADA) LTD	Company Name		Quotation #	B51186	Maxxam Job #	Bottle Order #:								
Contact Name	Jay Cherian KATRINA NOKLEBY	Contact Name		P.O. #											
Address	#44-5022 49th ST. YELLOWKNIFE NT. X1A 3R8	Address	SALE	Project #	234.01016.00000										
Phone	867-765-5695	Phone		Project Name	GREAT BEAR LAKE	Chain Of Custody Record	Project Manager								
Fax		Fax		Site #	El Bonanza / Bonanza										
	jcherian@slrconsulting.com; analytical@slrconsulting.ca			Sampled By	DAP/DSK		Letitia Prefontaine								
Regulatory Criteria:		Special Instructions		ANALYSIS REQUESTED (PLEASE BE SPECIFIC)											
<input type="checkbox"/> CSR				Turnaround Time (TAT) Required:											
<input type="checkbox"/> CCME				Please provide advance notice for rush projects											
<input type="checkbox"/> BC Water Quality				Regular (Standard) TAT:											
<input type="checkbox"/> Other				(will be applied if Rush TAT is not specified):											
				Standard TAT = 5-7 Working days for most tests.											
				Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.											
				Job Specific Rush TAT (if applies to entire submission)											
				1 DAY <input type="checkbox"/> 2 Day <input type="checkbox"/> 3 Day <input type="checkbox"/> Date Required: <input type="checkbox"/>											
				Rush Confirmation Number: <input type="checkbox"/>											
				(call lab for #)											
				# of Bottles											
				Comments											
SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM															
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered ? (Y/N)	Alkalinity, Conductivity, pH, Turbidity, TSS, TDS	Chloride, Sulphate	Ammonia, Orthophosphorus, Dissolved phosphate, Total phosphate, Nitrate, Nitrite, DOC	Total Metals in Water w/ CV Hg & Total Hardness	Hexavalent Chromium (Total)	Dissolved Metals in Water w/ CV Hg & Dissolved Hardness	COMET BTX/F1 in Water	COMET F2-F4 in Water		
1	ELB-8-SL	16/08/30	10:16	SW	Y	X	X	X	X			X	X		11
2	ELB-7-SL-2		10:27			X	X	X	X	X	X				10
3	ELB-7-SL		11:38			X	X	X	X		X				9
4	ELB-5-SL-2		12:15			X	X	X	X						7
5	ELB-5-SL-10		12:30			X	X	X	X						7
6	ELB-SW-2		12:56			X	X	X	X						7
7	ELB-6-SL		13:17			X	X	X	X						7
8	ELB-4-ML		13:31			X	X	X	X			X	X		11
9	ELB-3-ML-2		14:03			X	X	X	X						7
10	BON-SW-1		14:56			X	X	X	X			X	X		11
RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	# jars used and not submitted		Lab Use Only					
Dale Peterson		16/09/01	10:36	Katrina Nokleby		16/09/02	12:30	0		Time Sensitive		Temperature (°C) on Receipt		Custody Seal Intact on Cooler?	
Katrina Nokleby		16/09/02	15:10	Dale Peterson		2016/09/04	15:28			<input type="checkbox"/>		see ACTR		<input type="checkbox"/> Yes <input type="checkbox"/> No	
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.															

Maxxam Analytics International Corporation o/a Maxxam Analytics



Maxxam Analytics International Corporation o/a Maxxam Analytics
Unit 105 - 349 Old Airport Road, Yellowknife, North West Territories Canada X1A 3X6 Tel: (867) 445-2448 Toll-free 800-563-6286 Fax: (905) 817-5779 www.maxxam.ca

Chain Of Custody Record

Page 2 of 2

INVOICE TO:		Report Information		Project Information		Laboratory Use Only	
Company Name	#1776 SLR CONSULTING (CANADA) LTD	Company Name		Quotation #	B51186	Maxxam Job #	Bottle Order #:
Contact Name	Jay Cherian KATRINA NOKLEBY	Contact Name		P.O. #			
Address	#44-5022 49th St YELLOWKNIFE NT X1A 3R8	Address	← SAME	Project #	234.01016.00000		504158
Phone	867-765-5695	Phone		Project Name	GREAT BEAR LAKE	Chain Of Custody Record	Project Manager
Fax		Fax		Site #	El Bonanza / Bonanza		
Email	jcherian@slrconsulting.com; analytical@slrconsulting.com	Email	INVOICE knokleby@slrconsulting.com	Sampled By	DAP/DSK		Letitia Prefontaine

Regulatory Criteria:		Special Instructions		ANALYSIS REQUESTED (PLEASE BE SPECIFIC)										Turnaround Time (TAT) Required:		
<input type="checkbox"/> CSR															Please provide advance notice for rush projects	
<input type="checkbox"/> CCME															Regular (Standard) TAT:	
<input type="checkbox"/> BC Water Quality															(will be applied if Rush TAT is not specified):	
<input type="checkbox"/> Other															Standard TAT = 5-7 Working days for most tests.	
															Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.	
															Job Specific Rush TAT (if applies to entire submission)	
															1 DAY <input type="checkbox"/> 2 Day <input type="checkbox"/> 3 Day <input type="checkbox"/> Date Required: <input type="checkbox"/>	
															Rush Confirmation Number: <input type="checkbox"/> (call lab for #)	
SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM																
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered ? (Y/N)	Alkalinity, Conductivity, pH, Turbidity, TSS, TDS	Chloride, Sulphate	Ammonia, Orthophosphorus, Total phosphate, Nitrate, Nitrite, DOC	Total Metals in Water w/ CV Hg & Total Hardness	Hexavalent Chromium (Total)	Dissolved Metals in Water w/ CV Hg & Dissolved Hardness	CCME BTEX/F1 in Water	CCME F2-F4 in Water	# of Bottles	Comments	
1	ELB-3-ML-10	16/08/30	14:10	SW	Y	X	X	X	X					7		
2	ELB-9-GBL-2	16/08/30	16:21	↓	↓	X	X	X	X			X	X	11		
3	ELB-1-GBL	16/08/30	16:34	↓	↓	X	X	X	X			X	X	11		
4	DUP1	16/08/30	16:34	↓	↓	X	X	X	X			X	X	11		
5	DUPA	16/08/30	16:45	↓	↓	X	X	X	X					7		
6	TRIP BLANK	16/08/30				X	X	X	X					7	RECEIVED IN YELLOWKNIFE By: <u>[Signature]</u> 2016-09-02 3,4,5 Temp: 5.1, 5.6	
7																
8																
9																
10																

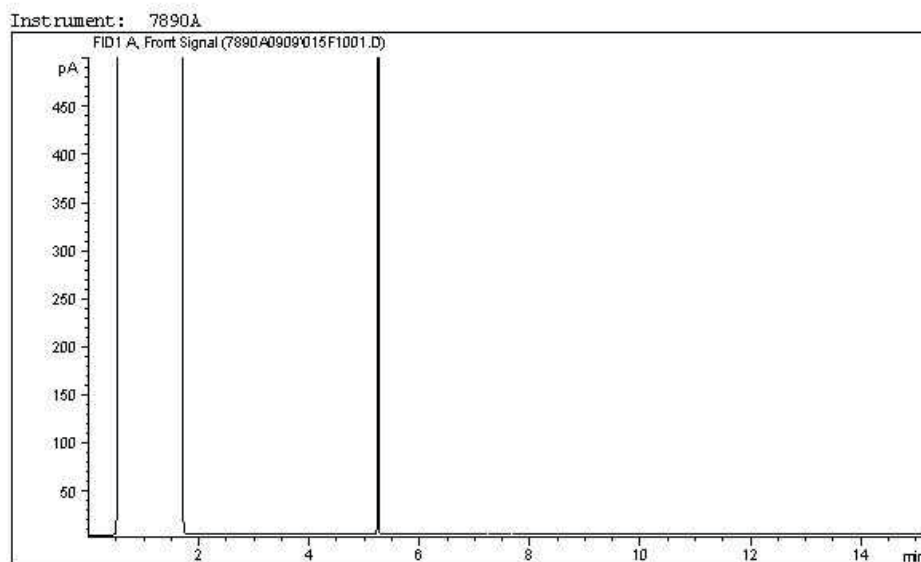
RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	# Jars used and not submitted	Lab Use Only		
[Signature] DAVEN PETERSON		16/09/01	20:36	[Signature] KATRINA NOKLEBY		16/09/02	12:30	0	Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
[Signature] KATRINA NOKLEBY		16/09/02	15:10	[Signature] DAP		2016/09/04	15:28		<input type="checkbox"/>	See ACTR	<input type="checkbox"/> Yes <input type="checkbox"/> No

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

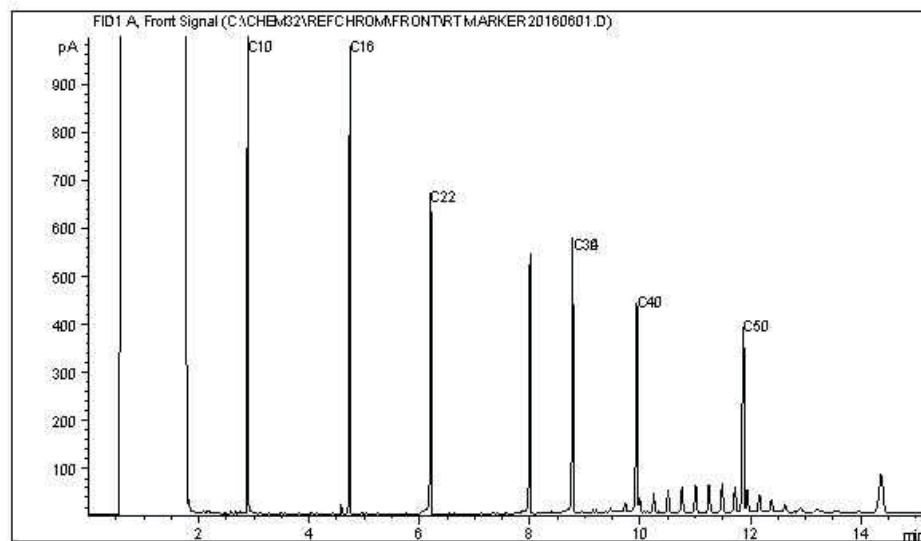
White: Maxxam Yellow: Client

Maxxam Analytics International Corporation o/a Maxxam Analytics

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram

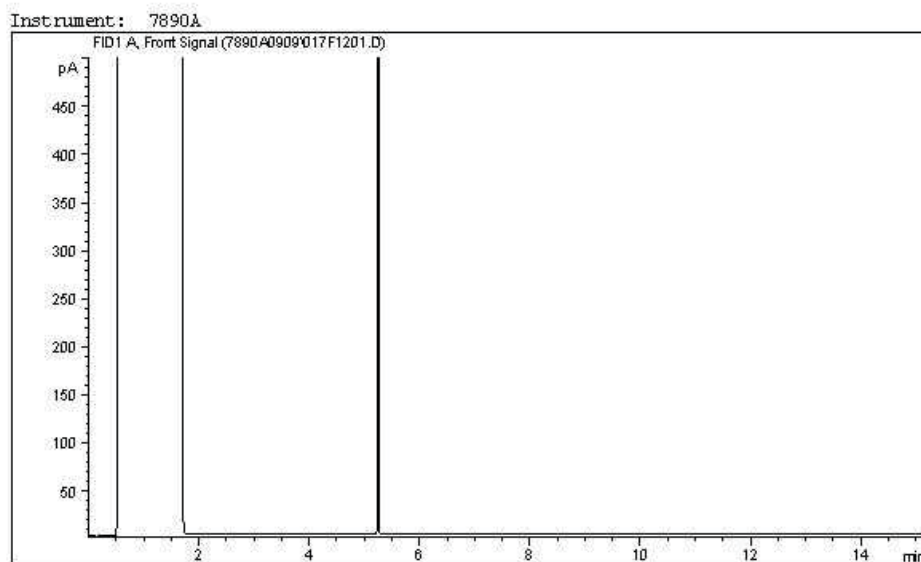


TYPICAL PRODUCT CARBON NUMBER RANGES

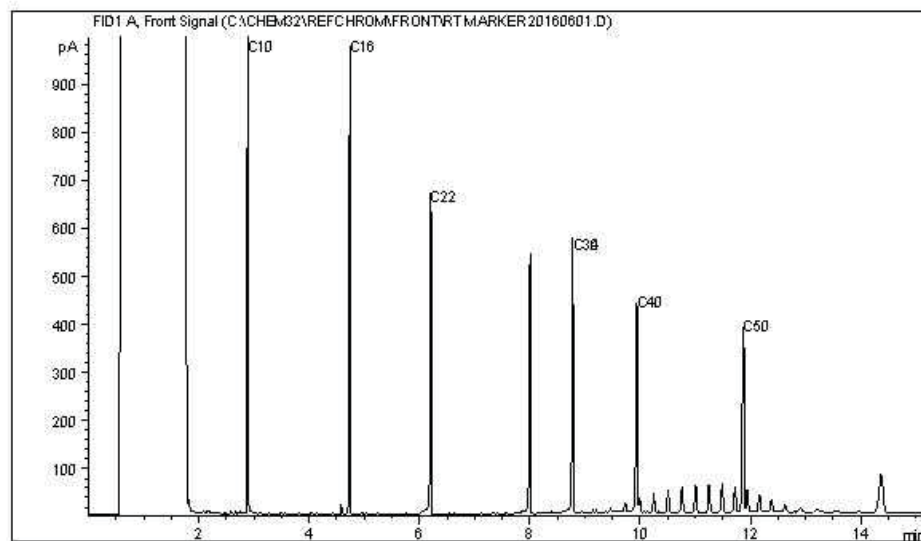
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram

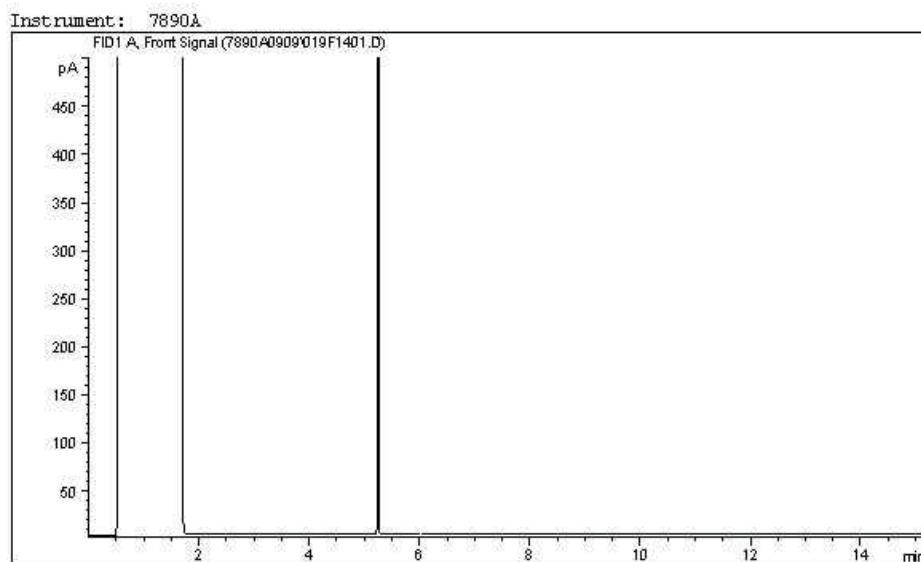


TYPICAL PRODUCT CARBON NUMBER RANGES

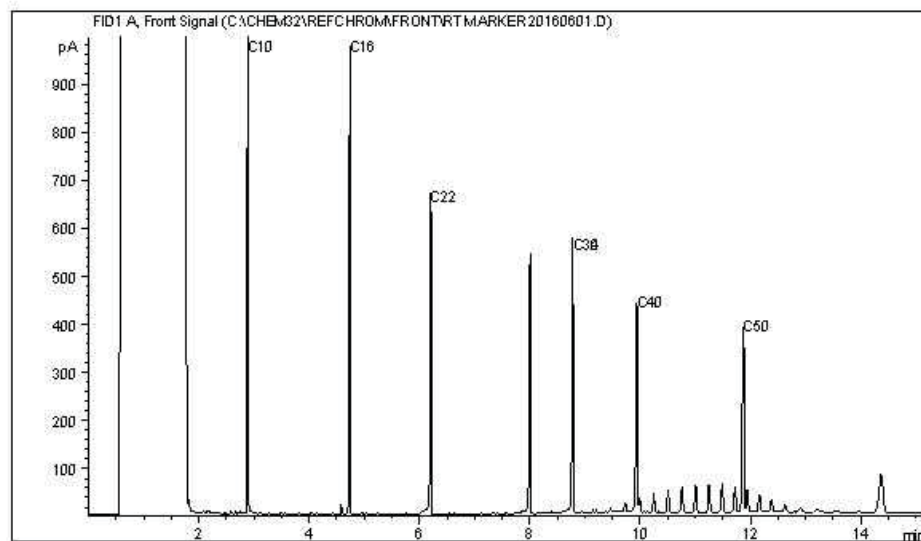
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram

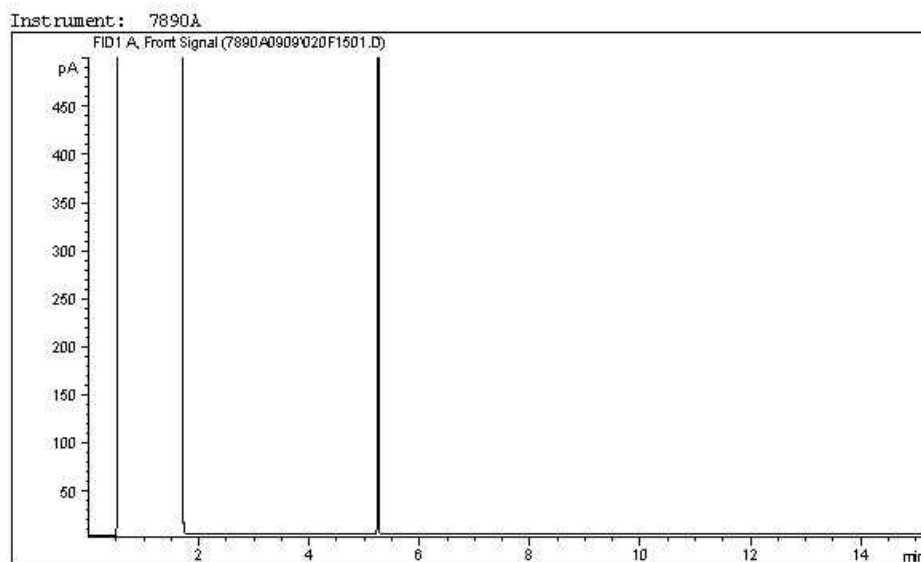


TYPICAL PRODUCT CARBON NUMBER RANGES

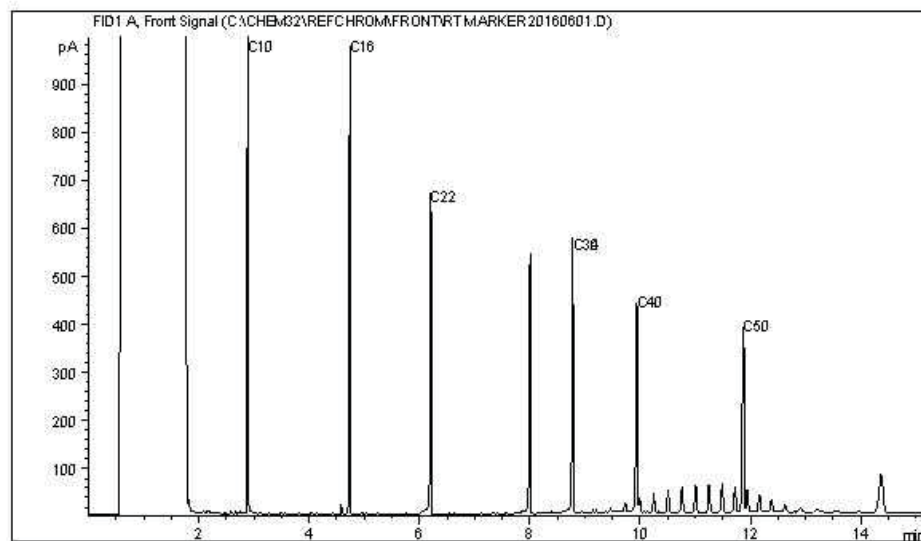
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram

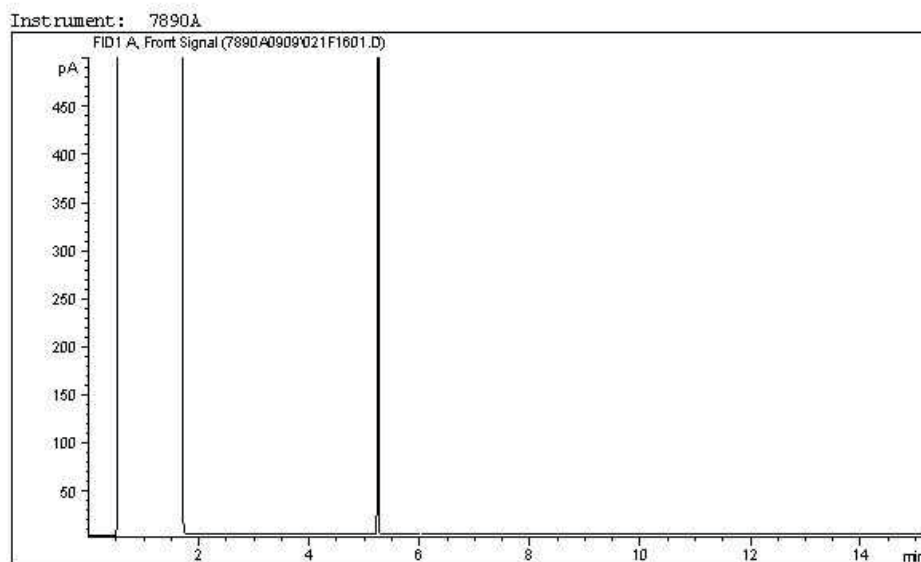


TYPICAL PRODUCT CARBON NUMBER RANGES

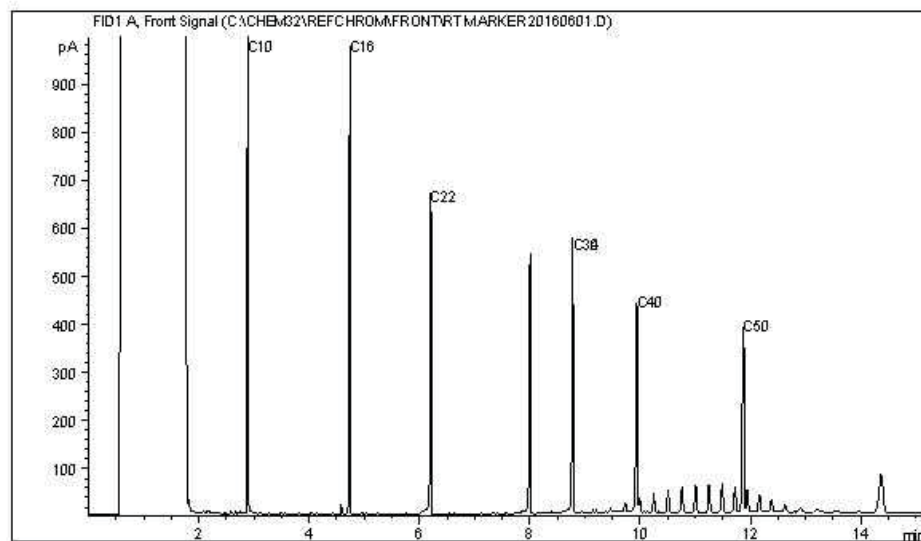
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram

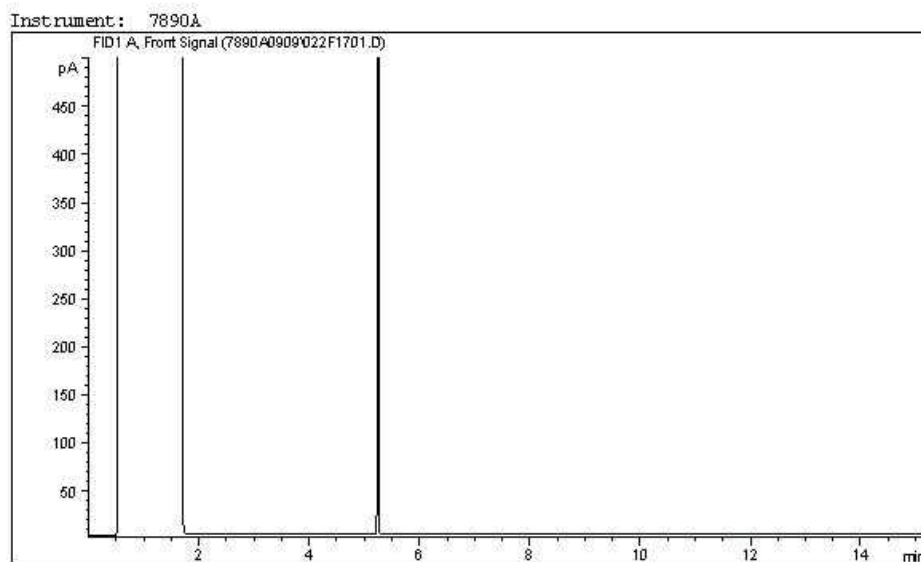


TYPICAL PRODUCT CARBON NUMBER RANGES

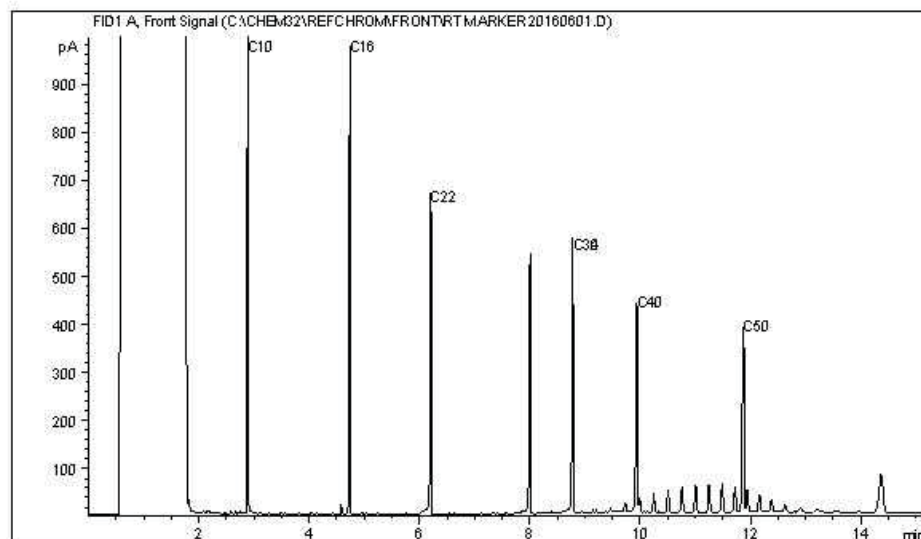
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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

Contact Lake

Your Project #: 234.10106.00000
Site#: Contact Lake
Site Location: Contact Lake
Your C.O.C. #: 504001-04-01, 504001-05-01

Attention:Katrina Nokleby

SLR CONSULTING (CANADA) LTD
#200 - 1620 WEST 8TH AVENUE
VANCOUVER, BC
Canada V6J 1V4

Report Date: 2017/04/10

Report #: R2367580

Version: 3 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B676084

Received: 2016/09/02, 15:25

Sample Matrix: Water
Samples Received: 18

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO ₃ ,HCO ₃ ,OH	18	N/A	2016/09/06	AB SOP-00005	SM 22 2320 B m
BTEX/F1 in Water by HS GC/MS/FID	3	N/A	2016/09/09	AB SOP-00039	CCME CWS/EPA 8260c m
BTEX/F1 in Water by HS GC/MS/FID	1	N/A	2016/09/10	AB SOP-00039	CCME CWS/EPA 8260c m
Chloride by Automated Colourimetry	18	N/A	2016/09/07	AB SOP-00020	SM 22 4500-Cl G m
Carbon (DOC) (3)	4	N/A	2016/09/09	EENVSOP-00060	MMCW 119 1996 m
Carbon (DOC) (3)	14	N/A	2016/09/12	EENVSOP-00060	MMCW 119 1996 m
Conductivity @25C	18	N/A	2016/09/06	AB SOP-00005	SM 22 2510 B m
Isotopes - Subcontract (1)	4	N/A	2016/10/26		
CCME Hydrocarbons (F2-F4 in water) (4)	4	2016/09/08	2016/09/09	AB SOP-00037 / AB SOP-00040	CCME PHC-CWS m
Hardness Total (calculated as CaCO ₃) (2)	18	N/A	2016/09/12	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO ₃) (2)	7	N/A	2016/09/12	BBY WI-00033	Auto Calc
Mercury (Dissolved) by CVAf (2)	1	N/A	2016/09/09	BBY7SOP-00015	BCMOE BCLM Oct2013 m
Mercury (Dissolved) by CVAf (2)	6	N/A	2016/09/12	BBY7SOP-00015	BCMOE BCLM Oct2013 m
Mercury (Total) by CVAf (2)	18	2016/09/09	2016/09/09	BBY7SOP-00015	BCMOE BCLM Oct2013 m
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (2)	7	N/A	2016/09/12	BBY7SOP-00002	EPA 6020A R1 m
Elements by CRC ICPMS (dissolved) (2)	6	N/A	2016/09/10	BBY7SOP-00002	EPA 6020B R2 m
Elements by CRC ICPMS (dissolved) (2)	1	N/A	2016/09/12	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (2)	18	2016/09/06	2016/09/12	BBY7SOP-00002	EPA 6020A R1 m
Elements by CRC ICPMS (total) (2)	3	2016/09/08	2016/09/10	BBY7SOP-00003,	BCLM2005,EPA6020bR2m
Elements by CRC ICPMS (total) (2)	10	2016/09/09	2016/09/10	BBY7SOP-00003,	BCLM2005,EPA6020bR2m
Elements by CRC ICPMS (total) (2)	5	2016/09/09	2016/09/12	BBY7SOP-00003,	BCLM2005,EPA6020bR2m
Ammonia-N (Total)	18	N/A	2016/09/08	AB SOP-00007	EPA 350.1 R2.0 m
Nitrate and Nitrite	18	N/A	2016/09/09	AB WI-00065	Auto Calc
Nitrate + Nitrite-N (calculated)	18	N/A	2016/09/09	AB WI-00065	Auto Calc
Nitrogen, (Nitrite, Nitrate) by IC (5)	18	N/A	2016/09/08	AB SOP-00023	SM 22 4110 B m
Filter and HNO ₃ Preserve for Metals (2)	7	N/A	2016/09/09	BBY7 WI-00004	BCMOE Reqs 08/14
pH @25°C (6)	18	N/A	2016/09/06	AB SOP-00005	SM 22 4500 H+ B m
Orthophosphate by Konelab (5)	18	N/A	2016/09/06	AB SOP-00025	SM 22 4500-P A,F m
Sulphate by Automated Colourimetry	18	N/A	2016/09/07	AB SOP-00018	SM 22 4500-SO4 E m

Your Project #: 234.10106.00000
Site#: Contact Lake
Site Location: Contact Lake
Your C.O.C. #: 504001-04-01, 504001-05-01

Attention:Katrina Nokleby

SLR CONSULTING (CANADA) LTD
#200 - 1620 WEST 8TH AVENUE
VANCOUVER, BC
Canada V6J 1V4

Report Date: 2017/04/10
Report #: R2367580
Version: 3 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B676084

Received: 2016/09/02, 15:25

Sample Matrix: Water
Samples Received: 18

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Dissolved Solids (Filt. Residue)	2	2016/09/06	2016/09/08	AB SOP-00065	SM 22 2540 C m
Total Dissolved Solids (Filt. Residue)	16	2016/09/07	2016/09/08	AB SOP-00065	SM 22 2540 C m
Phosphorus -P (Total, Dissolved)	18	2016/09/08	2016/09/09	AB SOP-00024	SM 22 4500-P A,B,F m
Total Phosphorus	18	2016/09/08	2016/09/09	AB SOP-00024	SM 22 4500-P A,B,F m
Total Suspended Solids (NFR)	1	2016/09/06	2016/09/06	AB SOP-00061	SM 22 2540 D m
Total Suspended Solids (NFR)	2	2016/09/06	2016/09/07	AB SOP-00061	SM 22 2540 D m
Total Suspended Solids (NFR)	12	2016/09/07	2016/09/07	AB SOP-00061	SM 22 2540 D m
Total Suspended Solids (NFR)	3	2016/09/07	2016/09/09	AB SOP-00061	SM 22 2540 D m
Turbidity (5)	18	N/A	2016/09/07	EENVSOP-00066	SM 22 2130 B m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

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

Results relate to samples tested.

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

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

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

Your Project #: 234.10106.00000
Site#: Contact Lake
Site Location: Contact Lake
Your C.O.C. #: 504001-04-01, 504001-05-01

Attention:Katrina Nokleby

SLR CONSULTING (CANADA) LTD
#200 - 1620 WEST 8TH AVENUE
VANCOUVER, BC
Canada V6J 1V4

Report Date: 2017/04/10
Report #: R2367580
Version: 3 - Revision

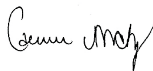
CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B676084

Received: 2016/09/02, 15:25

- (1) This test was performed by Maxxam Calgary Environmental
- (2) This test was performed by Maxxam Vancouver
- (3) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: Whenever applicable, Dissolved >Total for any parameter that falls within method uncertainty for duplicates is likely equivalent. If RPD is >20% samples were reanalyzed and confirmed.
- (4) Silica gel clean up employed.
- (5) Analysis completed within 48h after laboratory receipt to a maximum of five days from sampling is satisfactory for compliance purposes.
- (6) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Maxxam endeavours to analyze samples as soon as possible after receipt.

Encryption Key



Carmen McKay
Project Manager
10 Apr 2017 11:33:28

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Carmen McKay, Project Manager

Email: CMcKay@maxxam.ca

Phone# (403)219-3683

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B676084
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.10106.00000
Site Location: Contact Lake
Sampler Initials: DAP, DSK

AT1 BTEX AND F1-F4 IN WATER (WATER)

Maxxam ID		PL0478	PL0479		PL0486		PL0490		
Sampling Date		2016/08/31 10:13	2016/08/31 11:02		2016/08/31 14:10		2016/08/31 16:11		
COC Number		504001-04-01	504001-04-01		504001-04-01		504001-05-01		
	UNITS	CL-2	CL-15	QC Batch	CL-24	QC Batch	CL-7-EA-2M	RDL	QC Batch
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	8391316	<0.10	8391316	<0.10	0.10	8391316
F3 (C16-C34 Hydrocarbons)	mg/L	<0.20	<0.20	8391316	<0.20	8391316	<0.20	0.20	8391316
F4 (C34-C50 Hydrocarbons)	mg/L	<0.20	<0.20	8391316	<0.20	8391316	<0.20	0.20	8391316
Reached Baseline at C50	mg/L	Yes	Yes	8391316	Yes	8391316	Yes		8391316
Volatiles									
Benzene	ug/L	<0.40	<0.40	8392695	<0.40	8392696	<0.40	0.40	8392695
Toluene	ug/L	<0.40	<0.40	8392695	<0.40	8392696	<0.40	0.40	8392695
Ethylbenzene	ug/L	<0.40	<0.40	8392695	<0.40	8392696	<0.40	0.40	8392695
m & p-Xylene	ug/L	<0.80	<0.80	8392695	<0.80	8392696	<0.80	0.80	8392695
o-Xylene	ug/L	<0.40	<0.40	8392695	<0.40	8392696	<0.40	0.40	8392695
Xylenes (Total)	ug/L	<0.80	<0.80	8392695	<0.80	8392696	<0.80	0.80	8392695
F1 (C6-C10) - BTEX	ug/L	<100	<100	8392695	<100	8392696	<100	100	8392695
F1 (C6-C10)	ug/L	<100	<100	8392695	<100	8392696	<100	100	8392695
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	101	103	8392695	105	8392696	102		8392695
4-Bromofluorobenzene (sur.)	%	102	100	8392695	98	8392696	98		8392695
D4-1,2-Dichloroethane (sur.)	%	109	106	8392695	106	8392696	109		8392695
O-TERPHENYL (sur.)	%	106	92	8391316	92	8391316	96		8391316
RDL = Reportable Detection Limit									

Maxxam Job #: B676084
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.10106.00000
Site Location: Contact Lake
Sampler Initials: DAP, DSK

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		PL0478	PL0479		PL0480	PL0481		
Sampling Date		2016/08/31 10:13	2016/08/31 11:02		2016/08/31 12:37	2016/08/31 13:15		
COC Number		504001-04-01	504001-04-01		504001-04-01	504001-04-01		
	UNITS	CL-2	CL-15	QC Batch	CL-26-2M	CL-5	RDL	QC Batch
Parameter								
Subcontract Parameter	Bq/l	ATTACHED	ATTACHED	8448813		ATTACHED	N/A	8448813
Calculated Parameters								
Filter and HNO3 Preservation	N/A					FIELD		ONSITE
Dissolved Nitrate (NO3)	mg/L	0.21	<0.044	8388387	0.070	0.078	0.044	8388387
Nitrate plus Nitrite (N)	mg/L	0.048	<0.020	8388388	<0.020	<0.020	0.020	8388388
Dissolved Nitrite (NO2)	mg/L	<0.033	<0.033	8388387	<0.033	<0.033	0.033	8388387
Misc. Inorganics								
Conductivity	uS/cm	220	290	8388652	45	200	1.0	8388652
Dissolved Organic Carbon (C)	mg/L	7.8	7.0	8393003	4.3	8.2	0.50	8393003
pH	pH	7.94	7.81	8388649	7.50	7.94	N/A	8388649
Total Dissolved Solids	mg/L	150	180	8388645	32	120	10	8389537
Total Suspended Solids	mg/L	1.3	4.0	8388666	5.3	<1.0	1.0	8389956
Anions								
Alkalinity (PP as CaCO3)	mg/L	<0.50	<0.50	8388651	<0.50	<0.50	0.50	8388651
Alkalinity (Total as CaCO3)	mg/L	99	150	8388651	22	100	0.50	8388651
Bicarbonate (HCO3)	mg/L	120	180	8388651	26	120	0.50	8388651
Carbonate (CO3)	mg/L	<0.50	<0.50	8388651	<0.50	<0.50	0.50	8388651
Hydroxide (OH)	mg/L	<0.50	<0.50	8388651	<0.50	<0.50	0.50	8388651
Dissolved Sulphate (SO4)	mg/L	17	10	8388993	<1.0	6.3	1.0	8388993
Dissolved Chloride (Cl)	mg/L	<1.0	<1.0	8388990	<1.0	<1.0	1.0	8388990
Nutrients								
Total Ammonia (N)	mg/L	0.019 (1)	0.020 (1)	8391483	0.020 (1)	0.038 (1)	0.0067	8391483
Orthophosphate (P)	mg/L	0.019	0.0050	8388335	<0.0030	<0.0030	0.0030	8388335
Dissolved Phosphorus (P)	mg/L	0.0070	0.0080	8391091	0.0030	0.0030	0.0030	8391091
Total Phosphorus (P)	mg/L	0.0090	0.010	8391125	<0.0030	0.0030	0.0030	8391125
Dissolved Nitrite (N)	mg/L	<0.010	<0.010	8389737	<0.010	<0.010	0.010	8389737
Dissolved Nitrate (N)	mg/L	0.048	<0.010	8389737	0.016	0.018	0.010	8389737
Physical Properties								
Turbidity	NTU	1.1	0.65	8390078	0.18	0.35	0.10	8390078
RDL = Reportable Detection Limit								
N/A = Not Applicable								
(1) Detection limit for ammonia calculated based on method detection limits (MDL) by client request.								

Maxxam Job #: B676084
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.10106.00000
Site Location: Contact Lake
Sampler Initials: DAP, DSK

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		PL0482	PL0483	PL0484	PL0485	PL0486	PL0487		
Sampling Date		2016/08/31 13:15	2016/08/31 13:32	2016/08/31 13:46	2016/08/31 13:46	2016/08/31 14:10	2016/08/31 14:26		
COC Number		504001-04-01	504001-04-01	504001-04-01	504001-04-01	504001-04-01	504001-04-01		
	UNITS	DUP 3	CL-2B	CL-3	DUP 2	CL-24	CL-14	RDL	QC Batch

Parameter									
Subcontract Parameter	Bq/l			ATTACHED				N/A	8448813

Calculated Parameters									
Filter and HNO3 Preservation	N/A	FIELD		FIELD					ONSITE
Dissolved Nitrate (NO3)	mg/L	0.073	0.050	<0.044	<0.044	0.070	<0.044	0.044	8388387
Nitrate plus Nitrite (N)	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	8388388
Dissolved Nitrite (NO2)	mg/L	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	0.033	8388387

Misc. Inorganics									
Conductivity	uS/cm	200	200	210	210	45	49	1.0	8388652
Dissolved Organic Carbon (C)	mg/L	9.4	9.6	8.4	12	4.1	6.8	0.50	8394653
pH	pH	7.93	7.71	7.79	7.83	7.44	7.49	N/A	8388649
Total Dissolved Solids	mg/L	130	130	140	120	28	28	10	8389537
Total Suspended Solids	mg/L	1.3	<1.0	1.3	22	<1.0	2.0	1.0	8389956

Anions									
Alkalinity (PP as CaCO3)	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8388651
Alkalinity (Total as CaCO3)	mg/L	97	100	100	100	22	23	0.50	8388651
Bicarbonate (HCO3)	mg/L	120	120	130	120	26	28	0.50	8388651
Carbonate (CO3)	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8388651
Hydroxide (OH)	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8388651
Dissolved Sulphate (SO4)	mg/L	6.3	6.4	6.8	6.8	<1.0	<1.0	1.0	8388993
Dissolved Chloride (Cl)	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	8388990

Nutrients									
Total Ammonia (N)	mg/L	0.025 (1)	0.024 (1)	0.028 (1)	0.039 (1)	0.030 (1)	0.033 (1)	0.0067	8391483
Orthophosphate (P)	mg/L	<0.0030	0.0030	0.0030	0.0030	<0.0030	<0.0030	0.0030	8388335
Dissolved Phosphorus (P)	mg/L	0.0050	0.0060	0.0040	0.0040	<0.0030	0.0030	0.0030	8391091
Total Phosphorus (P)	mg/L	0.0030	0.0040	0.0050	<0.0030	0.0030	0.0040	0.0030	8391125
Dissolved Nitrite (N)	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	8389737
Dissolved Nitrate (N)	mg/L	0.016	0.011	<0.010	<0.010	0.016	<0.010	0.010	8389737

Physical Properties									
Turbidity	NTU	0.46	0.29	0.32	0.33	0.16	0.35	0.10	8390078

RDL = Reportable Detection Limit

N/A = Not Applicable

(1) Detection limit for ammonia calculated based on method detection limits (MDL) by client request.

Maxxam Job #: B676084
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.10106.00000
Site Location: Contact Lake
Sampler Initials: DAP, DSK

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		PL0488	PL0489		PL0490	PL0491		
Sampling Date		2016/08/31 15:20	2016/08/31 15:47		2016/08/31 16:11	2016/08/31 16:41		
COC Number					504001-05-01	504001-05-01		
	UNITS	CL-9	CL-8-2M	QC Batch	CL-7-EA-2M	CL-27-EA	RDL	QC Batch
Calculated Parameters								
Filter and HNO3 Preservation	N/A			ONSITE	FIELD	FIELD		ONSITE
Dissolved Nitrate (NO3)	mg/L	0.089	0.075	8388387	0.37	0.35	0.044	8388387
Nitrate plus Nitrite (N)	mg/L	0.020	<0.020	8388388	0.083	0.078	0.020	8388388
Dissolved Nitrite (NO2)	mg/L	<0.033	<0.033	8388387	<0.033	<0.033	0.033	8388387
Misc. Inorganics								
Conductivity	uS/cm	45	45	8388652	160	160	1.0	8388659
Dissolved Organic Carbon (C)	mg/L	4.8	5.0	8394653	5.2	2.7	0.50	8394653
pH	pH	7.46	7.46	8388649	7.87	7.95	N/A	8388653
Total Dissolved Solids	mg/L	40	28	8389537	84	88	10	8389537
Total Suspended Solids	mg/L	2.0	<1.0	8389956	<1.0	2.7	1.0	8389956
Anions								
Alkalinity (PP as CaCO3)	mg/L	<0.50	<0.50	8388651	<0.50	<0.50	0.50	8388658
Alkalinity (Total as CaCO3)	mg/L	18	21	8388651	54	57	0.50	8388658
Bicarbonate (HCO3)	mg/L	22	25	8388651	66	69	0.50	8388658
Carbonate (CO3)	mg/L	<0.50	<0.50	8388651	<0.50	<0.50	0.50	8388658
Hydroxide (OH)	mg/L	<0.50	<0.50	8388651	<0.50	<0.50	0.50	8388658
Dissolved Sulphate (SO4)	mg/L	<1.0	<1.0	8388993	17	17	1.0	8388993
Dissolved Chloride (Cl)	mg/L	<1.0	<1.0	8388990	4.8	4.9	1.0	8388990
Nutrients								
Total Ammonia (N)	mg/L	0.021 (1)	0.019 (1)	8391483	0.016 (1)	0.015 (1)	0.0067	8391483
Orthophosphate (P)	mg/L	<0.0030	<0.0030	8388335	<0.0030	<0.0030	0.0030	8388335
Dissolved Phosphorus (P)	mg/L	<0.0030	<0.0030	8391091	<0.0030	<0.0030	0.0030	8391091
Total Phosphorus (P)	mg/L	<0.0030	<0.0030	8391125	0.0030	0.0030	0.0030	8391125
Dissolved Nitrite (N)	mg/L	<0.010	<0.010	8389737	<0.010	<0.010	0.010	8389737
Dissolved Nitrate (N)	mg/L	0.020	0.017	8389737	0.083	0.078	0.010	8389737
Physical Properties								
Turbidity	NTU	0.25	0.19	8390078	0.26	0.36	0.10	8390078
RDL = Reportable Detection Limit								
N/A = Not Applicable								
(1) Detection limit for ammonia calculated based on method detection limits (MDL) by client request.								

Maxxam Job #: B676084
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.10106.00000
Site Location: Contact Lake
Sampler Initials: DAP, DSK

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		PL0492		PL0493		PL0494		PL0495		
Sampling Date		2016/08/31 17:40		2016/08/31 17:52		2016/08/31 18:00				
COC Number		504001-05-01		504001-05-01		504001-05-01		504001-05-01		
	UNITS	CL-16-EA-2M	QC Batch	CL-16-EA-10M	QC Batch	DUP B	QC Batch	TRIP BLANK	RDL	QC Batch

Calculated Parameters

Filter and HNO3 Preservation	N/A	FIELD	ONSITE	FIELD	ONSITE		ONSITE			ONSITE
Dissolved Nitrate (NO3)	mg/L	0.38	8388387	0.50	8388387	<0.044	8388387	<0.044	0.044	8388387
Nitrate plus Nitrite (N)	mg/L	0.086	8388388	0.11	8388388	<0.020	8388388	<0.020	0.020	8388388
Dissolved Nitrite (NO2)	mg/L	<0.033	8388387	<0.033	8388387	<0.033	8388387	<0.033	0.033	8388387

Misc. Inorganics

Conductivity	uS/cm	160	8388659	160	8388659	<1.0	8388652	<1.0	1.0	8388652
Dissolved Organic Carbon (C)	mg/L	5.0	8394653	4.2	8394653	1.6	8394653	0.76	0.50	8394653
pH	pH	7.88	8388653	7.90	8388653	4.73	8388649	4.72	N/A	8388649
Total Dissolved Solids	mg/L	84	8389537	64	8389541	<10	8389541	<10	10	8389541
Total Suspended Solids	mg/L	1.3	8390600	1.3	8390600	<1.0	8390600	<1.0	1.0	8388474

Anions

Alkalinity (PP as CaCO3)	mg/L	<0.50	8388658	<0.50	8388658	<0.50	8388651	<0.50	0.50	8388651
Alkalinity (Total as CaCO3)	mg/L	57	8388658	56	8388658	<0.50	8388651	<0.50	0.50	8388651
Bicarbonate (HCO3)	mg/L	69	8388658	69	8388658	<0.50	8388651	<0.50	0.50	8388651
Carbonate (CO3)	mg/L	<0.50	8388658	<0.50	8388658	<0.50	8388651	<0.50	0.50	8388651
Hydroxide (OH)	mg/L	<0.50	8388658	<0.50	8388658	<0.50	8388651	<0.50	0.50	8388651
Dissolved Sulphate (SO4)	mg/L	17	8388993	17	8388993	<1.0	8388993	<1.0	1.0	8388993
Dissolved Chloride (Cl)	mg/L	4.9	8388990	4.9	8388990	<1.0	8388990	<1.0	1.0	8388990

Nutrients

Total Ammonia (N)	mg/L	0.028 (1)	8391483	0.018 (1)	8391483	0.013 (1)	8391483	0.020 (1)	0.0067	8391483
Orthophosphate (P)	mg/L	<0.0030	8388335	<0.0030	8388335	<0.0030	8388335	<0.0030	0.0030	8388335
Dissolved Phosphorus (P)	mg/L	0.0030	8391091	<0.0030	8391091	<0.0030	8391091	<0.0030	0.0030	8391091
Total Phosphorus (P)	mg/L	0.0030	8391125	<0.0030	8391125	<0.0030	8391125	<0.0030	0.0030	8391125
Dissolved Nitrite (N)	mg/L	<0.010	8389737	<0.010	8389737	<0.010	8389737	<0.010	0.010	8389737
Dissolved Nitrate (N)	mg/L	0.086	8389737	0.11	8389737	<0.010	8389737	<0.010	0.010	8389737

Physical Properties

Turbidity	NTU	0.24	8390078	0.32	8390078	<0.10	8390078	<0.10	0.10	8390078
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RDL = Reportable Detection Limit

N/A = Not Applicable

(1) Detection limit for ammonia calculated based on method detection limits (MDL) by client request.

Maxxam Job #: B676084
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.10106.00000
Site Location: Contact Lake
Sampler Initials: DAP, DSK

CSR/CCME DISS. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL0481		PL0482		PL0484	PL0490		
Sampling Date		2016/08/31 13:15		2016/08/31 13:15		2016/08/31 13:46	2016/08/31 16:11		
COC Number		504001-04-01		504001-04-01		504001-04-01	504001-05-01		
	UNITS	CL-5	QC Batch	DUP 3	QC Batch	CL-3	CL-7-EA-2M	RDL	QC Batch
Misc. Inorganics									
Dissolved Hardness (CaCO ₃)	mg/L	97.3	8388194	94.2	8388194	101	69.2	0.50	8388194
Elements									
Dissolved Mercury (Hg)	ug/L	<0.010	8392334	<0.010	8394853	<0.010	<0.010	0.010	8394853
Dissolved Metals by ICPMS									
Dissolved Aluminum (Al)	ug/L	6.4	8391655	10.0	8391655	4.7	<3.0	3.0	8391655
Dissolved Antimony (Sb)	ug/L	<0.50	8391655	<0.50	8391655	<0.50	<0.50	0.50	8391655
Dissolved Arsenic (As)	ug/L	8.10	8391655	7.95	8391655	10.1	0.24	0.10	8391655
Dissolved Barium (Ba)	ug/L	15.0	8391655	14.2	8391655	23.3	21.9	1.0	8391655
Dissolved Beryllium (Be)	ug/L	<0.10	8391655	<0.10	8391655	<0.10	<0.10	0.10	8391655
Dissolved Bismuth (Bi)	ug/L	<1.0	8391655	<1.0	8391655	<1.0	<1.0	1.0	8391655
Dissolved Boron (B)	ug/L	<50	8391655	<50	8391655	<50	<50	50	8391655
Dissolved Cadmium (Cd)	ug/L	<0.010	8391655	<0.010	8391655	<0.010	<0.010	0.010	8391655
Dissolved Chromium (Cr)	ug/L	<1.0	8391655	<1.0	8391655	<1.0	<1.0	1.0	8391655
Dissolved Cobalt (Co)	ug/L	<0.50	8391655	<0.50	8391655	<0.50	<0.50	0.50	8391655
Dissolved Copper (Cu)	ug/L	6.95	8391655	7.50	8391655	6.55	0.54	0.20	8391655
Dissolved Iron (Fe)	ug/L	7.1	8391655	15.7	8391655	24.3	<5.0	5.0	8391655
Dissolved Lead (Pb)	ug/L	<0.20	8391655	<0.20	8391655	<0.20	<0.20	0.20	8391655
Dissolved Lithium (Li)	ug/L	<5.0	8391655	<5.0	8391655	<5.0	<5.0	5.0	8391655
Dissolved Manganese (Mn)	ug/L	1.7	8391655	1.4	8391655	29.4	<1.0	1.0	8391655
Dissolved Molybdenum (Mo)	ug/L	<1.0	8391655	<1.0	8391655	<1.0	<1.0	1.0	8391655
Dissolved Nickel (Ni)	ug/L	<1.0	8391655	<1.0	8391655	1.0	<1.0	1.0	8391655
Dissolved Selenium (Se)	ug/L	<0.10	8391655	0.15	8391655	<0.10	<0.10	0.10	8391655
Dissolved Silicon (Si)	ug/L	2420	8391655	2280	8391655	2240	1190	100	8391655
Dissolved Silver (Ag)	ug/L	<0.020	8391655	<0.020	8391655	0.020	<0.020	0.020	8391655
Dissolved Strontium (Sr)	ug/L	58.7	8391655	57.8	8391655	65.9	101	1.0	8391655
Dissolved Thallium (Tl)	ug/L	<0.050	8391655	<0.050	8391655	<0.050	<0.050	0.050	8391655
Dissolved Tin (Sn)	ug/L	<5.0	8391655	<5.0	8391655	<5.0	<5.0	5.0	8391655
Dissolved Titanium (Ti)	ug/L	<5.0	8391655	<5.0	8391655	<5.0	<5.0	5.0	8391655
Dissolved Uranium (U)	ug/L	30.1	8391655	30.2	8391655	33.8	0.37	0.10	8391655
Dissolved Vanadium (V)	ug/L	<5.0	8391655	<5.0	8391655	<5.0	<5.0	5.0	8391655
Dissolved Zinc (Zn)	ug/L	<5.0	8391655	<5.0	8391655	<5.0	<5.0	5.0	8391655
RDL = Reportable Detection Limit									

Maxxam Job #: B676084
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.10106.00000
Site Location: Contact Lake
Sampler Initials: DAP, DSK

CSR/CCME DISS. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL0481		PL0482		PL0484	PL0490		
Sampling Date		2016/08/31 13:15		2016/08/31 13:15		2016/08/31 13:46	2016/08/31 16:11		
COC Number		504001-04-01		504001-04-01		504001-04-01	504001-05-01		
	UNITS	CL-5	QC Batch	DUP 3	QC Batch	CL-3	CL-7-EA-2M	RDL	QC Batch
Dissolved Zirconium (Zr)	ug/L	<0.50	8391655	<0.50	8391655	<0.50	<0.50	0.50	8391655
Dissolved Calcium (Ca)	mg/L	24.2	8388196	23.5	8395666	25.2	16.2	0.050	8388196
Dissolved Magnesium (Mg)	mg/L	8.99	8388196	8.63	8388196	9.15	6.98	0.050	8388196
Dissolved Potassium (K)	mg/L	0.880	8388196	0.855	8388196	1.06	0.721	0.050	8388196
Dissolved Sodium (Na)	mg/L	4.00	8388196	4.01	8388196	4.07	4.03	0.050	8388196
Dissolved Sulphur (S)	mg/L	<3.0	8388196	1790 (1)	8388196	<3.0	5.1	3.0	8388196

RDL = Reportable Detection Limit

(1) Dissolved greater than total. Reanalysis yields similar results.

Maxxam Job #: B676084
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.10106.00000
Site Location: Contact Lake
Sampler Initials: DAP, DSK

CSR/CCME DISS. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL0491	PL0492		PL0493		
Sampling Date		2016/08/31 16:41	2016/08/31 17:40		2016/08/31 17:52		
COC Number		504001-05-01	504001-05-01		504001-05-01		
	UNITS	CL-27-EA	CL-16-EA-2M	QC Batch	CL-16-EA-10M	RDL	QC Batch
Misc. Inorganics							
Dissolved Hardness (CaCO3)	mg/L	68.7	68.7	8388194	74.4	0.50	8388194
Elements							
Dissolved Mercury (Hg)	ug/L	0.027	<0.010	8394853	<0.010	0.010	8394853
Dissolved Metals by ICPMS							
Dissolved Aluminum (Al)	ug/L	3.6	<3.0	8391655	9.6	3.0	8392424
Dissolved Antimony (Sb)	ug/L	<0.50	<0.50	8391655	<0.50	0.50	8392424
Dissolved Arsenic (As)	ug/L	0.24	0.18	8391655	0.22	0.10	8392424
Dissolved Barium (Ba)	ug/L	21.8	21.7	8391655	21.7	1.0	8392424
Dissolved Beryllium (Be)	ug/L	<0.10	<0.10	8391655	<0.10	0.10	8392424
Dissolved Bismuth (Bi)	ug/L	<1.0	<1.0	8391655	<1.0	1.0	8392424
Dissolved Boron (B)	ug/L	<50	<50	8391655	<50	50	8392424
Dissolved Cadmium (Cd)	ug/L	<0.010	<0.010	8391655	<0.010	0.010	8392424
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	8391655	<1.0	1.0	8392424
Dissolved Cobalt (Co)	ug/L	<0.50	<0.50	8391655	<0.50	0.50	8392424
Dissolved Copper (Cu)	ug/L	0.77	0.46	8391655	0.43	0.20	8392424
Dissolved Iron (Fe)	ug/L	<5.0	<5.0	8391655	10.8	5.0	8392424
Dissolved Lead (Pb)	ug/L	<0.20	<0.20	8391655	<0.20	0.20	8392424
Dissolved Lithium (Li)	ug/L	<5.0	<5.0	8391655	<5.0	5.0	8392424
Dissolved Manganese (Mn)	ug/L	1.3	<1.0	8391655	<1.0	1.0	8392424
Dissolved Molybdenum (Mo)	ug/L	<1.0	<1.0	8391655	<1.0	1.0	8392424
Dissolved Nickel (Ni)	ug/L	<1.0	<1.0	8391655	<1.0	1.0	8392424
Dissolved Selenium (Se)	ug/L	<0.10	<0.10	8391655	<0.10	0.10	8392424
Dissolved Silicon (Si)	ug/L	1170	1210	8391655	1260	100	8392424
Dissolved Silver (Ag)	ug/L	<0.020	<0.020	8391655	<0.020	0.020	8392424
Dissolved Strontium (Sr)	ug/L	99.1	102	8391655	100	1.0	8392424
Dissolved Thallium (Tl)	ug/L	<0.050	<0.050	8391655	<0.050	0.050	8392424
Dissolved Tin (Sn)	ug/L	<5.0	<5.0	8391655	<5.0	5.0	8392424
Dissolved Titanium (Ti)	ug/L	<5.0	<5.0	8391655	<5.0	5.0	8392424
Dissolved Uranium (U)	ug/L	0.31	0.33	8391655	0.32	0.10	8392424
Dissolved Vanadium (V)	ug/L	<5.0	<5.0	8391655	<5.0	5.0	8392424
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	8391655	<5.0	5.0	8392424
RDL = Reportable Detection Limit							

Maxxam Job #: B676084
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.10106.00000
Site Location: Contact Lake
Sampler Initials: DAP, DSK

CSR/CCME DISS. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL0491	PL0492		PL0493		
Sampling Date		2016/08/31 16:41	2016/08/31 17:40		2016/08/31 17:52		
COC Number		504001-05-01	504001-05-01		504001-05-01		
	UNITS	CL-27-EA	CL-16-EA-2M	QC Batch	CL-16-EA-10M	RDL	QC Batch
Dissolved Zirconium (Zr)	ug/L	<0.50	<0.50	8391655	<0.50	0.50	8392424
Dissolved Calcium (Ca)	mg/L	16.1	15.9	8388196	17.1	0.050	8388196
Dissolved Magnesium (Mg)	mg/L	6.91	7.05	8388196	7.70	0.050	8388196
Dissolved Potassium (K)	mg/L	0.730	0.734	8388196	0.817	0.050	8388196
Dissolved Sodium (Na)	mg/L	4.01	4.07	8388196	4.51	0.050	8388196
Dissolved Sulphur (S)	mg/L	5.1	5.5	8388196	5.3	3.0	8388196
RDL = Reportable Detection Limit							

Maxxam Job #: B676084
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.10106.00000
Site Location: Contact Lake
Sampler Initials: DAP, DSK

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL0478			PL0479		PL0480		
Sampling Date		2016/08/31 10:13			2016/08/31 11:02		2016/08/31 12:37		
COC Number		504001-04-01			504001-04-01		504001-04-01		
	UNITS	CL-2	RDL	QC Batch	CL-15	QC Batch	CL-26-2M	RDL	QC Batch
Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L	103	0.50	8388392	150	8388392	20.5	0.50	8388392
Elements									
Total Mercury (Hg)	ug/L	0.276 (1)	0.020	8392777	0.011	8392777	<0.010	0.010	8392777
Total Metals by ICPMS									
Total Aluminum (Al)	ug/L	29.0	3.0	8392668	13.3	8391792	11.6	3.0	8392668
Total Antimony (Sb)	ug/L	2.43	0.50	8392668	1.13	8391792	<0.50	0.50	8392668
Total Arsenic (As)	ug/L	81.1	0.10	8392668	27.7	8391792	0.29	0.10	8392668
Total Barium (Ba)	ug/L	60.7	1.0	8392668	18.7	8391792	3.7	1.0	8392668
Total Beryllium (Be)	ug/L	<0.10	0.10	8392668	<0.10	8391792	<0.10	0.10	8392668
Total Bismuth (Bi)	ug/L	2.1	1.0	8392668	<1.0	8391792	<1.0	1.0	8392668
Total Boron (B)	ug/L	54	50	8392668	59	8391792	<50	50	8392668
Total Cadmium (Cd)	ug/L	0.011	0.010	8392668	<0.010	8391792	<0.010	0.010	8392668
Total Chromium (Cr)	ug/L	<1.0	1.0	8392668	<1.0	8391792	<1.0	1.0	8392668
Total Cobalt (Co)	ug/L	2.49	0.50	8392668	0.71	8391792	<0.50	0.50	8392668
Total Copper (Cu)	ug/L	131	0.50	8392668	39.3	8391792	0.80	0.50	8392668
Total Iron (Fe)	ug/L	274	10	8392668	177	8391792	<10	10	8392668
Total Lead (Pb)	ug/L	1.01	0.20	8392668	<0.20	8391792	<0.20	0.20	8392668
Total Lithium (Li)	ug/L	<5.0	5.0	8392668	<5.0	8391792	<5.0	5.0	8392668
Total Manganese (Mn)	ug/L	29.3	1.0	8392668	54.9	8391792	5.4	1.0	8392668
Total Molybdenum (Mo)	ug/L	2.9	1.0	8392668	1.1	8391792	<1.0	1.0	8392668
Total Nickel (Ni)	ug/L	11.5	1.0	8392668	1.9	8391792	<1.0	1.0	8392668
Total Selenium (Se)	ug/L	0.14	0.10	8392668	0.15	8391792	<0.10	0.10	8392668
Total Silicon (Si)	ug/L	3120	100	8392668	4310	8391792	347	100	8392668
Total Silver (Ag)	ug/L	1.90	0.020	8392668	0.436	8391792	0.206	0.020	8392668
Total Strontium (Sr)	ug/L	113	1.0	8392668	106	8391792	10.1	1.0	8392668
Total Thallium (Tl)	ug/L	<0.050	0.050	8392668	<0.050	8391792	<0.050	0.050	8392668
Total Tin (Sn)	ug/L	<5.0	5.0	8392668	<5.0	8391792	<5.0	5.0	8392668
Total Titanium (Ti)	ug/L	<5.0	5.0	8392668	<5.0	8391792	<5.0	5.0	8392668
Total Uranium (U)	ug/L	156	0.10	8392668	127	8391792	1.16	0.10	8392668
Total Vanadium (V)	ug/L	<5.0	5.0	8392668	<5.0	8391792	<5.0	5.0	8392668
RDL = Reportable Detection Limit									
(1) RDL raised to sample matrix interference, sample dilution required.									

Maxxam Job #: B676084
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.10106.00000
Site Location: Contact Lake
Sampler Initials: DAP, DSK

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL0478			PL0479		PL0480		
Sampling Date		2016/08/31 10:13			2016/08/31 11:02		2016/08/31 12:37		
COC Number		504001-04-01			504001-04-01		504001-04-01		
	UNITS	CL-2	RDL	QC Batch	CL-15	QC Batch	CL-26-2M	RDL	QC Batch
Total Zinc (Zn)	ug/L	6.3	5.0	8392668	<5.0	8391792	<5.0	5.0	8392668
Total Zirconium (Zr)	ug/L	<0.50	0.50	8392668	<0.50	8391792	<0.50	0.50	8392668
Total Calcium (Ca)	mg/L	28.2	0.050	8388393	40.0	8388393	4.85	0.050	8388393
Total Magnesium (Mg)	mg/L	8.00	0.050	8388393	12.2	8388393	2.04	0.050	8388393
Total Potassium (K)	mg/L	2.10	0.050	8388393	2.03	8388393	0.420	0.050	8388393
Total Sodium (Na)	mg/L	4.34	0.050	8388393	5.58	8388393	0.867	0.050	8388393
Total Sulphur (S)	mg/L	5.3	3.0	8388393	<3.0	8388393	<3.0	3.0	8388393
RDL = Reportable Detection Limit									

Maxxam Job #: B676084
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.10106.00000
Site Location: Contact Lake
Sampler Initials: DAP, DSK

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL0481		PL0482		PL0483		PL0484		
Sampling Date		2016/08/31 13:15		2016/08/31 13:15		2016/08/31 13:32		2016/08/31 13:46		
COC Number		504001-04-01		504001-04-01		504001-04-01		504001-04-01		
	UNITS	CL-5	QC Batch	DUP 3	QC Batch	CL-2B	QC Batch	CL-3	RDL	QC Batch

Calculated Parameters										
Total Hardness (CaCO ₃)	mg/L	97.2	8388392	97.5	8388392	108	8388392	102	0.50	8388392
Elements										
Total Mercury (Hg)	ug/L	<0.010	8392777	<0.010	8392781	<0.010	8392781	<0.010	0.010	8392781
Total Metals by ICPMS										
Total Aluminum (Al)	ug/L	42.6	8391792	19.7	8392668	60.1	8391792	10.7	3.0	8392668
Total Antimony (Sb)	ug/L	<0.50	8391792	<0.50	8392668	<0.50	8391792	<0.50	0.50	8392668
Total Arsenic (As)	ug/L	8.40	8391792	8.58	8392668	12.4	8391792	10.5	0.10	8392668
Total Barium (Ba)	ug/L	15.4	8391792	14.7	8392668	20.8	8391792	23.4	1.0	8392668
Total Beryllium (Be)	ug/L	<0.10	8391792	<0.10	8392668	<0.10	8391792	<0.10	0.10	8392668
Total Bismuth (Bi)	ug/L	<1.0	8391792	<1.0	8392668	<1.0	8391792	<1.0	1.0	8392668
Total Boron (B)	ug/L	<50	8391792	<50	8392668	<50	8391792	<50	50	8392668
Total Cadmium (Cd)	ug/L	<0.010	8391792	<0.010	8392668	<0.010	8391792	<0.010	0.010	8392668
Total Chromium (Cr)	ug/L	<1.0	8391792	<1.0	8392668	<1.0	8391792	<1.0	1.0	8392668
Total Cobalt (Co)	ug/L	<0.50	8391792	<0.50	8392668	0.78	8391792	<0.50	0.50	8392668
Total Copper (Cu)	ug/L	7.65	8391792	7.55	8392668	8.46	8391792	8.69	0.50	8392668
Total Iron (Fe)	ug/L	76	8391792	23	8392668	199	8391792	46	10	8392668
Total Lead (Pb)	ug/L	<0.20	8391792	<0.20	8392668	<0.20	8391792	<0.20	0.20	8392668
Total Lithium (Li)	ug/L	<5.0	8391792	<5.0	8392668	<5.0	8391792	<5.0	5.0	8392668
Total Manganese (Mn)	ug/L	26.9	8391792	8.5	8392668	195	8391792	40.8	1.0	8392668
Total Molybdenum (Mo)	ug/L	<1.0	8391792	<1.0	8392668	<1.0	8391792	<1.0	1.0	8392668
Total Nickel (Ni)	ug/L	<1.0	8391792	<1.0	8392668	1.5	8391792	1.3	1.0	8392668
Total Selenium (Se)	ug/L	0.12	8391792	<0.10	8392668	0.11	8391792	<0.10	0.10	8392668
Total Silicon (Si)	ug/L	2530	8391792	2330	8392668	2670	8391792	2110	100	8392668
Total Silver (Ag)	ug/L	0.087	8391792	0.126	8392668	0.165	8391792	0.102	0.020	8392668
Total Strontium (Sr)	ug/L	54.7	8391792	55.6	8392668	60.3	8391792	61.1	1.0	8392668
Total Thallium (Tl)	ug/L	<0.050	8391792	<0.050	8392668	<0.050	8391792	<0.050	0.050	8392668
Total Tin (Sn)	ug/L	<5.0	8391792	<5.0	8392668	<5.0	8391792	<5.0	5.0	8392668
Total Titanium (Ti)	ug/L	<5.0	8391792	<5.0	8392668	<5.0	8391792	<5.0	5.0	8392668
Total Uranium (U)	ug/L	28.0	8391792	31.6	8392668	32.8	8391792	35.8	0.10	8392668
Total Vanadium (V)	ug/L	<5.0	8391792	<5.0	8392668	<5.0	8391792	<5.0	5.0	8392668
Total Zinc (Zn)	ug/L	<5.0	8391792	<5.0	8392668	<5.0	8391792	<5.0	5.0	8392668
RDL = Reportable Detection Limit										

Maxxam Job #: B676084
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.10106.00000
Site Location: Contact Lake
Sampler Initials: DAP, DSK

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL0481		PL0482		PL0483		PL0484		
Sampling Date		2016/08/31 13:15		2016/08/31 13:15		2016/08/31 13:32		2016/08/31 13:46		
COC Number		504001-04-01		504001-04-01		504001-04-01		504001-04-01		
	UNITS	CL-5	QC Batch	DUP 3	QC Batch	CL-2B	QC Batch	CL-3	RDL	QC Batch
Total Zirconium (Zr)	ug/L	<0.50	8391792	<0.50	8392668	<0.50	8391792	<0.50	0.50	8392668
Total Calcium (Ca)	mg/L	25.2	8388393	24.3	8388393	27.4	8388393	25.4	0.050	8388393
Total Magnesium (Mg)	mg/L	8.31	8388393	8.96	8388393	9.55	8388393	9.34	0.050	8388393
Total Potassium (K)	mg/L	0.972	8388393	0.797	8388393	1.11	8388393	0.996	0.050	8388393
Total Sodium (Na)	mg/L	3.74	8388393	4.00	8388393	4.10	8388393	4.10	0.050	8388393
Total Sulphur (S)	mg/L	<3.0	8388393	<3.0	8388393	<3.0	8388393	3.4	3.0	8388393
RDL = Reportable Detection Limit										

Maxxam Job #: B676084
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.10106.00000
Site Location: Contact Lake
Sampler Initials: DAP, DSK

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL0485		PL0486	PL0487	PL0488	PL0489		
Sampling Date		2016/08/31 13:46		2016/08/31 14:10	2016/08/31 14:26	2016/08/31 15:20	2016/08/31 15:47		
COC Number		504001-04-01		504001-04-01	504001-04-01				
	UNITS	DUP 2	QC Batch	CL-24	CL-14	CL-9	CL-8-2M	RDL	QC Batch
Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L	104	8388392	20.5	22.0	20.5	20.3	0.50	8388392
Elements									
Total Mercury (Hg)	ug/L	<0.010	8392781	<0.010	<0.010	<0.010	<0.010	0.010	8392781
Total Metals by ICPMS									
Total Aluminum (Al)	ug/L	11.4	8392668	10.6	10.8	9.3	7.5	3.0	8393323
Total Antimony (Sb)	ug/L	<0.50	8392668	<0.50	<0.50	<0.50	<0.50	0.50	8393323
Total Arsenic (As)	ug/L	10.9	8392668	0.20	0.20	0.12	<0.10	0.10	8393323
Total Barium (Ba)	ug/L	23.7	8392668	3.5	3.7	3.6	3.5	1.0	8393323
Total Beryllium (Be)	ug/L	<0.10	8392668	<0.10	<0.10	<0.10	<0.10	0.10	8393323
Total Bismuth (Bi)	ug/L	<1.0	8392668	<1.0	<1.0	<1.0	<1.0	1.0	8393323
Total Boron (B)	ug/L	<50	8392668	<50	<50	<50	<50	50	8393323
Total Cadmium (Cd)	ug/L	<0.010	8392668	<0.010	<0.010	<0.010	<0.010	0.010	8393323
Total Chromium (Cr)	ug/L	<1.0	8392668	<1.0	<1.0	<1.0	<1.0	1.0	8393323
Total Cobalt (Co)	ug/L	<0.50	8392668	<0.50	<0.50	<0.50	<0.50	0.50	8393323
Total Copper (Cu)	ug/L	8.99	8392668	0.72	0.82	0.69	0.69	0.50	8393323
Total Iron (Fe)	ug/L	55	8392668	<10	<10	<10	<10	10	8393323
Total Lead (Pb)	ug/L	<0.20	8392668	<0.20	<0.20	<0.20	<0.20	0.20	8393323
Total Lithium (Li)	ug/L	<5.0	8392668	<5.0	<5.0	<5.0	<5.0	5.0	8393323
Total Manganese (Mn)	ug/L	52.8	8392668	1.1	3.0	1.4	1.1	1.0	8393323
Total Molybdenum (Mo)	ug/L	<1.0	8392668	<1.0	<1.0	<1.0	<1.0	1.0	8393323
Total Nickel (Ni)	ug/L	1.2	8392668	<1.0	<1.0	<1.0	<1.0	1.0	8393323
Total Selenium (Se)	ug/L	<0.10	8392668	<0.10	<0.10	<0.10	<0.10	0.10	8393323
Total Silicon (Si)	ug/L	2220	8392668	313	298	305	284	100	8393323
Total Silver (Ag)	ug/L	0.069	8392668	<0.020	<0.020	0.029	<0.020	0.020	8393323
Total Strontium (Sr)	ug/L	63.0	8392668	10.3	11.2	9.8	9.7	1.0	8393323
Total Thallium (Tl)	ug/L	<0.050	8392668	<0.050	<0.050	<0.050	<0.050	0.050	8393323
Total Tin (Sn)	ug/L	<5.0	8392668	<5.0	<5.0	<5.0	<5.0	5.0	8393323
Total Titanium (Ti)	ug/L	<5.0	8392668	<5.0	<5.0	<5.0	<5.0	5.0	8393323
Total Uranium (U)	ug/L	35.9	8392668	0.18	0.33	0.20	0.19	0.10	8393323
Total Vanadium (V)	ug/L	<5.0	8392668	<5.0	<5.0	<5.0	<5.0	5.0	8393323
Total Zinc (Zn)	ug/L	<5.0	8392668	<5.0	<5.0	<5.0	<5.0	5.0	8393323
RDL = Reportable Detection Limit									

Maxxam Job #: B676084
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.10106.00000
Site Location: Contact Lake
Sampler Initials: DAP, DSK

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL0485		PL0486	PL0487	PL0488	PL0489		
Sampling Date		2016/08/31 13:46		2016/08/31 14:10	2016/08/31 14:26	2016/08/31 15:20	2016/08/31 15:47		
COC Number		504001-04-01		504001-04-01	504001-04-01				
	UNITS	DUP 2	QC Batch	CL-24	CL-14	CL-9	CL-8-2M	RDL	QC Batch
Total Zirconium (Zr)	ug/L	<0.50	8392668	<0.50	<0.50	<0.50	<0.50	0.50	8393323
Total Calcium (Ca)	mg/L	26.1	8388393	5.01	5.40	5.01	4.98	0.050	8388393
Total Magnesium (Mg)	mg/L	9.56	8388393	1.94	2.06	1.93	1.91	0.050	8388393
Total Potassium (K)	mg/L	1.02	8388393	0.483	0.498	0.451	0.442	0.050	8388393
Total Sodium (Na)	mg/L	4.15	8388393	0.842	0.847	0.832	0.829	0.050	8388393
Total Sulphur (S)	mg/L	3.4	8388393	<3.0	<3.0	<3.0	<3.0	3.0	8388393
RDL = Reportable Detection Limit									

Maxxam Job #: B676084
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.10106.00000
Site Location: Contact Lake
Sampler Initials: DAP, DSK

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL0490	PL0491	PL0492	PL0493	PL0494	PL0495		
Sampling Date		2016/08/31 16:11	2016/08/31 16:41	2016/08/31 17:40	2016/08/31 17:52	2016/08/31 18:00			
COC Number		504001-05-01	504001-05-01	504001-05-01	504001-05-01	504001-05-01	504001-05-01		
	UNITS	CL-7-EA-2M	CL-27-EA	CL-16-EA-2M	CL-16-EA-10M	DUP B	TRIP BLANK	RDL	QC Batch
Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L	67.5	68.2	67.7	68.4	<0.50	<0.50	0.50	8388392
Elements									
Total Mercury (Hg)	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	8392781
Total Metals by ICPMS									
Total Aluminum (Al)	ug/L	13.4	17.2	11.5	12.6	6.3	<3.0	3.0	8393323
Total Antimony (Sb)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8393323
Total Arsenic (As)	ug/L	0.19	0.32	0.16	0.18	<0.10	<0.10	0.10	8393323
Total Barium (Ba)	ug/L	21.7	21.4	21.4	21.7	<1.0	<1.0	1.0	8393323
Total Beryllium (Be)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	8393323
Total Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	8393323
Total Boron (B)	ug/L	<50	<50	<50	<50	<50	<50	50	8393323
Total Cadmium (Cd)	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	8393323
Total Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	8393323
Total Cobalt (Co)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8393323
Total Copper (Cu)	ug/L	<0.50	0.58	<0.50	<0.50	<0.50	<0.50	0.50	8393323
Total Iron (Fe)	ug/L	12	20	<10	12	<10	<10	10	8393323
Total Lead (Pb)	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	8393323
Total Lithium (Li)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8393323
Total Manganese (Mn)	ug/L	1.3	2.9	<1.0	<1.0	<1.0	<1.0	1.0	8393323
Total Molybdenum (Mo)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	8393323
Total Nickel (Ni)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	8393323
Total Selenium (Se)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	8393323
Total Silicon (Si)	ug/L	1180	1130	1170	1240	<100	<100	100	8393323
Total Silver (Ag)	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	8393323
Total Strontium (Sr)	ug/L	99.9	94.0	96.3	96.6	<1.0	<1.0	1.0	8393323
Total Thallium (Tl)	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8393323
Total Tin (Sn)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8393323
Total Titanium (Ti)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8393323
Total Uranium (U)	ug/L	0.36	0.32	0.32	0.31	<0.10	<0.10	0.10	8393323
Total Vanadium (V)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8393323
Total Zinc (Zn)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8393323
RDL = Reportable Detection Limit									

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SLR CONSULTING (CANADA) LTD
Client Project #: 234.10106.00000
Site Location: Contact Lake
Sampler Initials: DAP, DSK

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL0490	PL0491	PL0492	PL0493	PL0494	PL0495		
Sampling Date		2016/08/31 16:11	2016/08/31 16:41	2016/08/31 17:40	2016/08/31 17:52	2016/08/31 18:00			
COC Number		504001-05-01	504001-05-01	504001-05-01	504001-05-01	504001-05-01	504001-05-01		
	UNITS	CL-7-EA-2M	CL-27-EA	CL-16-EA-2M	CL-16-EA-10M	DUP B	TRIP BLANK	RDL	QC Batch
Total Zirconium (Zr)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8393323
Total Calcium (Ca)	mg/L	16.0	16.1	16.1	16.3	0.092	<0.050	0.050	8388393
Total Magnesium (Mg)	mg/L	6.68	6.78	6.65	6.75	<0.050	<0.050	0.050	8388393
Total Potassium (K)	mg/L	0.693	0.705	0.697	0.705	<0.050	<0.050	0.050	8388393
Total Sodium (Na)	mg/L	3.71	3.79	3.71	3.73	<0.050	<0.050	0.050	8388393
Total Sulphur (S)	mg/L	3.5	4.5	<3.0	4.4	<3.0	<3.0	3.0	8388393
RDL = Reportable Detection Limit									

Maxxam Job #: B676084
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.10106.00000
Site Location: Contact Lake
Sampler Initials: DAP, DSK

GENERAL COMMENTS

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

Package 1	3.3°C
Package 2	4.3°C
Package 3	4.0°C
Package 4	4.3°C

Gross Alpha and Beta analysis results are attached to this report. The reference number for these results from Maxxam Mississauga is BJ0913.

Radium-226 and Lead-210 analysis results are attached to this report. The reference number for these results from Maxxam Mississauga is BJ0913.

Report revised to include updated detection limits for Ammonia, per client request 2017/04/10

Sample PL0478 [CL-2] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0479 [CL-15] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0480 [CL-26-2M] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0481 [CL-5] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0482 [DUP 3] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0483 [CL-2B] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0484 [CL-3] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0485 [DUP 2] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0486 [CL-24] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0487 [CL-14] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

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Sample PL0488 [CL-9] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0489 [CL-8-2M] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0490 [CL-7-EA-2M] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0491 [CL-27-EA] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0492 [CL-16-EA-2M] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0493 [CL-16-EA-10M] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0494 [DUP B] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL0482, Na, K, Ca, Mg, S by CRC ICPMS (diss.): Test repeated.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

SLR CONSULTING (CANADA) LTD
Client Project #: 234.10106.00000
Site Location: Contact Lake
Sampler Initials: DAP, DSK

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8391316	O-TERPHENYL (sur.)	2016/09/09	86	60 - 130	100	60 - 130	97	%				
8392695	1,4-Difluorobenzene (sur.)	2016/09/09	101	70 - 130	100	70 - 130	103	%				
8392695	4-Bromofluorobenzene (sur.)	2016/09/09	99	70 - 130	99	70 - 130	99	%				
8392695	D4-1,2-Dichloroethane (sur.)	2016/09/09	109	70 - 130	110	70 - 130	108	%				
8392696	1,4-Difluorobenzene (sur.)	2016/09/09	100	70 - 130	100	70 - 130	101	%				
8392696	4-Bromofluorobenzene (sur.)	2016/09/09	99	70 - 130	98	70 - 130	100	%				
8392696	D4-1,2-Dichloroethane (sur.)	2016/09/09	107	70 - 130	106	70 - 130	109	%				
8388335	Orthophosphate (P)	2016/09/06	NC	80 - 120	100	80 - 120	<0.0030	mg/L	1.3	20		
8388474	Total Suspended Solids	2016/09/06	93	80 - 120	92	80 - 120	<1.0	mg/L	0	20		
8388645	Total Dissolved Solids	2016/09/08	NC	80 - 120	102	80 - 120	12, RDL=10	mg/L	1.2	20		
8388649	pH	2016/09/06			100	97 - 103			0.37	N/A		
8388651	Alkalinity (PP as CaCO3)	2016/09/06					<0.50	mg/L	NC	20		
8388651	Alkalinity (Total as CaCO3)	2016/09/06			101	80 - 120	<0.50	mg/L	NC	20		
8388651	Bicarbonate (HCO3)	2016/09/06					<0.50	mg/L	NC	20		
8388651	Carbonate (CO3)	2016/09/06					<0.50	mg/L	NC	20		
8388651	Hydroxide (OH)	2016/09/06					<0.50	mg/L	NC	20		
8388652	Conductivity	2016/09/06			100	90 - 110	<1.0	uS/cm	NC	10		
8388653	pH	2016/09/06			100	97 - 103			0.49	N/A		
8388658	Alkalinity (PP as CaCO3)	2016/09/06					<0.50	mg/L	NC	20		
8388658	Alkalinity (Total as CaCO3)	2016/09/06			99	80 - 120	<0.50	mg/L	NC	20		
8388658	Bicarbonate (HCO3)	2016/09/06					<0.50	mg/L	NC	20		
8388658	Carbonate (CO3)	2016/09/06					<0.50	mg/L	NC	20		
8388658	Hydroxide (OH)	2016/09/06					<0.50	mg/L	NC	20		
8388659	Conductivity	2016/09/06			100	90 - 110	<1.0	uS/cm	2.1	10		
8388666	Total Suspended Solids	2016/09/07	89	80 - 120	95	80 - 120	<1.0	mg/L	NC	20		
8388990	Dissolved Chloride (Cl)	2016/09/07	107	80 - 120	104	80 - 120	<1.0	mg/L	NC	20		
8388993	Dissolved Sulphate (SO4)	2016/09/07	NC	80 - 120	111	80 - 120	<1.0	mg/L	0.24	20		
8389537	Total Dissolved Solids	2016/09/08	100	80 - 120	105	80 - 120	12, RDL=10	mg/L	3.9	20		
8389541	Total Dissolved Solids	2016/09/08	NC	80 - 120	100	80 - 120	<10	mg/L	0.28	20		
8389737	Dissolved Nitrate (N)	2016/09/08	103	80 - 120	99	80 - 120	<0.010	mg/L	0.56	20		
8389737	Dissolved Nitrite (N)	2016/09/08	102	80 - 120	98	80 - 120	<0.010	mg/L	NC	20		

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QUALITY ASSURANCE REPORT(CONT'D)

SLR CONSULTING (CANADA) LTD
Client Project #: 234.10106.00000
Site Location: Contact Lake
Sampler Initials: DAP, DSK

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8389956	Total Suspended Solids	2016/09/07	95	80 - 120	96	80 - 120	<1.0	mg/L	12	20		
8390078	Turbidity	2016/09/07			100	80 - 120	<0.10	NTU	0.88	20		
8390600	Total Suspended Solids	2016/09/09	97	80 - 120	92	80 - 120	<1.0	mg/L	15	20		
8391091	Dissolved Phosphorus (P)	2016/09/09	95	80 - 120	106	80 - 120	<0.0030	mg/L	NC	20	90	80 - 120
8391125	Total Phosphorus (P)	2016/09/09	89	80 - 120	94	80 - 120	<0.0030	mg/L	NC	20	83	80 - 120
8391316	F2 (C10-C16 Hydrocarbons)	2016/09/09	94	60 - 130	110	70 - 130	<0.10	mg/L	NC	30		
8391316	F3 (C16-C34 Hydrocarbons)	2016/09/09	93	60 - 130	110	70 - 130	<0.20	mg/L	NC	30		
8391316	F4 (C34-C50 Hydrocarbons)	2016/09/09	83	60 - 130	97	70 - 130	<0.20	mg/L	NC	30		
8391483	Total Ammonia (N)	2016/09/08	98	80 - 120	96	80 - 120	<0.050	mg/L	NC	20		
8391655	Dissolved Aluminum (Al)	2016/09/10	107	80 - 120	109	80 - 120	<3.0	ug/L	NC	20		
8391655	Dissolved Antimony (Sb)	2016/09/10	102	80 - 120	100	80 - 120	<0.50	ug/L	NC	20		
8391655	Dissolved Arsenic (As)	2016/09/10	98	80 - 120	96	80 - 120	<0.10	ug/L	NC	20		
8391655	Dissolved Barium (Ba)	2016/09/10	101	80 - 120	103	80 - 120	<1.0	ug/L	NC	20		
8391655	Dissolved Beryllium (Be)	2016/09/10	100	80 - 120	99	80 - 120	<0.10	ug/L	NC	20		
8391655	Dissolved Bismuth (Bi)	2016/09/10	101	80 - 120	102	80 - 120	<1.0	ug/L	NC	20		
8391655	Dissolved Boron (B)	2016/09/10	97	80 - 120	100	80 - 120	<50	ug/L	NC	20		
8391655	Dissolved Cadmium (Cd)	2016/09/10	102	80 - 120	100	80 - 120	<0.010	ug/L	NC	20		
8391655	Dissolved Chromium (Cr)	2016/09/10	99	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		
8391655	Dissolved Cobalt (Co)	2016/09/10	100	80 - 120	99	80 - 120	<0.50	ug/L	NC	20		
8391655	Dissolved Copper (Cu)	2016/09/10	100	80 - 120	100	80 - 120	<0.20	ug/L	NC	20		
8391655	Dissolved Iron (Fe)	2016/09/10	106	80 - 120	110	80 - 120	<5.0	ug/L	NC	20		
8391655	Dissolved Lead (Pb)	2016/09/10	101	80 - 120	102	80 - 120	<0.20	ug/L	NC	20		
8391655	Dissolved Lithium (Li)	2016/09/10	98	80 - 120	99	80 - 120	<5.0	ug/L	NC	20		
8391655	Dissolved Manganese (Mn)	2016/09/10	99	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		
8391655	Dissolved Molybdenum (Mo)	2016/09/10	99	80 - 120	102	80 - 120	<1.0	ug/L	NC	20		
8391655	Dissolved Nickel (Ni)	2016/09/10	100	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		
8391655	Dissolved Selenium (Se)	2016/09/10	104	80 - 120	101	80 - 120	<0.10	ug/L	NC	20		
8391655	Dissolved Silicon (Si)	2016/09/10					<100	ug/L	NC	20		
8391655	Dissolved Silver (Ag)	2016/09/10	92	80 - 120	99	80 - 120	<0.020	ug/L	NC	20		
8391655	Dissolved Strontium (Sr)	2016/09/10	96	80 - 120	98	80 - 120	<1.0	ug/L	NC	20		
8391655	Dissolved Thallium (Tl)	2016/09/10	96	80 - 120	99	80 - 120	<0.050	ug/L	NC	20		

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QUALITY ASSURANCE REPORT(CONT'D)

SLR CONSULTING (CANADA) LTD
Client Project #: 234.10106.00000
Site Location: Contact Lake
Sampler Initials: DAP, DSK

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8391655	Dissolved Tin (Sn)	2016/09/10	100	80 - 120	101	80 - 120	<5.0	ug/L	NC	20		
8391655	Dissolved Titanium (Ti)	2016/09/10	83	80 - 120	87	80 - 120	<5.0	ug/L	NC	20		
8391655	Dissolved Uranium (U)	2016/09/10	100	80 - 120	101	80 - 120	<0.10	ug/L	NC	20		
8391655	Dissolved Vanadium (V)	2016/09/10	98	80 - 120	100	80 - 120	<5.0	ug/L	NC	20		
8391655	Dissolved Zinc (Zn)	2016/09/10	111	80 - 120	103	80 - 120	<5.0	ug/L	NC	20		
8391655	Dissolved Zirconium (Zr)	2016/09/10					<0.50	ug/L	NC	20		
8391792	Total Aluminum (Al)	2016/09/09	106	80 - 120	113	80 - 120	<3.0	ug/L	5.7	20		
8391792	Total Antimony (Sb)	2016/09/09	NC	80 - 120	107	80 - 120	<0.50	ug/L	0.052	20		
8391792	Total Arsenic (As)	2016/09/09	104	80 - 120	105	80 - 120	<0.10	ug/L	11	20		
8391792	Total Barium (Ba)	2016/09/09	104	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		
8391792	Total Beryllium (Be)	2016/09/09	108	80 - 120	116	80 - 120	<0.10	ug/L	NC	20		
8391792	Total Bismuth (Bi)	2016/09/09	95	80 - 120	97	80 - 120	<1.0	ug/L	NC	20		
8391792	Total Boron (B)	2016/09/09	NC	80 - 120	110	80 - 120	<50	ug/L	2.2	20		
8391792	Total Cadmium (Cd)	2016/09/09	NC	80 - 120	106	80 - 120	<0.010	ug/L	0.60	20		
8391792	Total Chromium (Cr)	2016/09/09	93	80 - 120	96	80 - 120	<1.0	ug/L	NC	20		
8391792	Total Cobalt (Co)	2016/09/09	96	80 - 120	95	80 - 120	<0.50	ug/L	NC	20		
8391792	Total Copper (Cu)	2016/09/09	98	80 - 120	100	80 - 120	<0.50	ug/L	2.8	20		
8391792	Total Iron (Fe)	2016/09/09	NC	80 - 120	109	80 - 120	<10	ug/L	2.6	20		
8391792	Total Lead (Pb)	2016/09/09	NC	80 - 120	97	80 - 120	<0.20	ug/L	1.8	20		
8391792	Total Lithium (Li)	2016/09/09	105	80 - 120	106	80 - 120	<5.0	ug/L	NC	20		
8391792	Total Manganese (Mn)	2016/09/09	97	80 - 120	95	80 - 120	<1.0	ug/L	3.3	20		
8391792	Total Molybdenum (Mo)	2016/09/09	NC	80 - 120	110	80 - 120	<1.0	ug/L	8.8	20		
8391792	Total Nickel (Ni)	2016/09/09	90	80 - 120	94	80 - 120	<1.0	ug/L	NC	20		
8391792	Total Selenium (Se)	2016/09/09	NC	80 - 120	109	80 - 120	<0.10	ug/L	2.8	20		
8391792	Total Silicon (Si)	2016/09/09					<100	ug/L	NC	20		
8391792	Total Silver (Ag)	2016/09/09	99	80 - 120	106	80 - 120	<0.020	ug/L	NC	20		
8391792	Total Strontium (Sr)	2016/09/09	107	80 - 120	105	80 - 120	<1.0	ug/L	3.8	20		
8391792	Total Thallium (Tl)	2016/09/09	102	80 - 120	100	80 - 120	<0.050	ug/L	NC	20		
8391792	Total Tin (Sn)	2016/09/09	113	80 - 120	104	80 - 120	<5.0	ug/L	NC	20		
8391792	Total Titanium (Ti)	2016/09/09	122 (1)	80 - 120	92	80 - 120	<5.0	ug/L	NC	20		
8391792	Total Uranium (U)	2016/09/09	98	80 - 120	96	80 - 120	<0.10	ug/L	NC	20		

Maxxam Job #: B676084
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QUALITY ASSURANCE REPORT(CONT'D)

SLR CONSULTING (CANADA) LTD
Client Project #: 234.10106.00000
Site Location: Contact Lake
Sampler Initials: DAP, DSK

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8391792	Total Vanadium (V)	2016/09/09	98	80 - 120	98	80 - 120	<5.0	ug/L	NC	20		
8391792	Total Zinc (Zn)	2016/09/09	94	80 - 120	113	80 - 120	<5.0	ug/L	NC	20		
8391792	Total Zirconium (Zr)	2016/09/09					<0.50	ug/L	NC	20		
8392334	Dissolved Mercury (Hg)	2016/09/09	91	80 - 120	96	80 - 120	<0.010	ug/L	NC	20		
8392424	Dissolved Aluminum (Al)	2016/09/12	119	80 - 120	108	80 - 120	<3.0	ug/L				
8392424	Dissolved Antimony (Sb)	2016/09/12	NC	80 - 120	102	80 - 120	<0.50	ug/L				
8392424	Dissolved Arsenic (As)	2016/09/12	103	80 - 120	106	80 - 120	<0.10	ug/L				
8392424	Dissolved Barium (Ba)	2016/09/12	NC	80 - 120	98	80 - 120	<1.0	ug/L				
8392424	Dissolved Beryllium (Be)	2016/09/12	106	80 - 120	104	80 - 120	<0.10	ug/L				
8392424	Dissolved Bismuth (Bi)	2016/09/12	103	80 - 120	102	80 - 120	<1.0	ug/L				
8392424	Dissolved Boron (B)	2016/09/12	NC	80 - 120	100	80 - 120	<50	ug/L				
8392424	Dissolved Cadmium (Cd)	2016/09/12	103	80 - 120	102	80 - 120	<0.010	ug/L				
8392424	Dissolved Chromium (Cr)	2016/09/12	102	80 - 120	99	80 - 120	<1.0	ug/L				
8392424	Dissolved Cobalt (Co)	2016/09/12	102	80 - 120	101	80 - 120	<0.50	ug/L				
8392424	Dissolved Copper (Cu)	2016/09/12	99	80 - 120	100	80 - 120	<0.20	ug/L				
8392424	Dissolved Iron (Fe)	2016/09/12	112	80 - 120	106	80 - 120	<5.0	ug/L				
8392424	Dissolved Lead (Pb)	2016/09/12	107	80 - 120	106	80 - 120	<0.20	ug/L	NC	20		
8392424	Dissolved Lithium (Li)	2016/09/12	107	80 - 120	106	80 - 120	<5.0	ug/L				
8392424	Dissolved Manganese (Mn)	2016/09/12	NC	80 - 120	100	80 - 120	<1.0	ug/L				
8392424	Dissolved Molybdenum (Mo)	2016/09/12	NC	80 - 120	101	80 - 120	<1.0	ug/L				
8392424	Dissolved Nickel (Ni)	2016/09/12	95	80 - 120	101	80 - 120	<1.0	ug/L				
8392424	Dissolved Selenium (Se)	2016/09/12	107	80 - 120	108	80 - 120	<0.10	ug/L				
8392424	Dissolved Silicon (Si)	2016/09/12					<100	ug/L				
8392424	Dissolved Silver (Ag)	2016/09/12	109	80 - 120	106	80 - 120	<0.020	ug/L				
8392424	Dissolved Strontium (Sr)	2016/09/12	NC	80 - 120	103	80 - 120	<1.0	ug/L				
8392424	Dissolved Thallium (Tl)	2016/09/12	103	80 - 120	103	80 - 120	<0.050	ug/L				
8392424	Dissolved Tin (Sn)	2016/09/12	NC	80 - 120	102	80 - 120	<5.0	ug/L				
8392424	Dissolved Titanium (Ti)	2016/09/12	103	80 - 120	93	80 - 120	<5.0	ug/L				
8392424	Dissolved Uranium (U)	2016/09/12	105	80 - 120	106	80 - 120	<0.10	ug/L				
8392424	Dissolved Vanadium (V)	2016/09/12	105	80 - 120	98	80 - 120	<5.0	ug/L				
8392424	Dissolved Zinc (Zn)	2016/09/12	99	80 - 120	104	80 - 120	<5.0	ug/L				

Maxxam Job #: B676084
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QUALITY ASSURANCE REPORT(CONT'D)

SLR CONSULTING (CANADA) LTD
Client Project #: 234.10106.00000
Site Location: Contact Lake
Sampler Initials: DAP, DSK

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8392424	Dissolved Zirconium (Zr)	2016/09/12					<0.50	ug/L				
8392668	Total Aluminum (Al)	2016/09/12	109	80 - 120	111	80 - 120	<3.0	ug/L	0.12	20		
8392668	Total Antimony (Sb)	2016/09/12	104	80 - 120	100	80 - 120	<0.50	ug/L	NC	20		
8392668	Total Arsenic (As)	2016/09/12	101	80 - 120	99	80 - 120	<0.10	ug/L	9.2	20		
8392668	Total Barium (Ba)	2016/09/12	NC	80 - 120	103	80 - 120	<1.0	ug/L	0.031	20		
8392668	Total Beryllium (Be)	2016/09/12	107	80 - 120	106	80 - 120	<0.10	ug/L	NC	20		
8392668	Total Bismuth (Bi)	2016/09/12	104	80 - 120	104	80 - 120	<1.0	ug/L	NC	20		
8392668	Total Boron (B)	2016/09/12	108	80 - 120	106	80 - 120	<50	ug/L	NC	20		
8392668	Total Cadmium (Cd)	2016/09/12	101	80 - 120	99	80 - 120	<0.010	ug/L	NC	20		
8392668	Total Chromium (Cr)	2016/09/12	102	80 - 120	105	80 - 120	<1.0	ug/L	NC	20		
8392668	Total Cobalt (Co)	2016/09/12	100	80 - 120	103	80 - 120	<0.50	ug/L	NC	20		
8392668	Total Copper (Cu)	2016/09/12	99	80 - 120	102	80 - 120	<0.50	ug/L	1.7	20		
8392668	Total Iron (Fe)	2016/09/12	NC	80 - 120	104	80 - 120	<10	ug/L	3.7	20		
8392668	Total Lead (Pb)	2016/09/12	106	80 - 120	102	80 - 120	<0.20	ug/L	NC	20		
8392668	Total Lithium (Li)	2016/09/12	105	80 - 120	106	80 - 120	<5.0	ug/L	NC	20		
8392668	Total Manganese (Mn)	2016/09/12	NC	80 - 120	101	80 - 120	<1.0	ug/L	1.3	20		
8392668	Total Molybdenum (Mo)	2016/09/12	106	80 - 120	104	80 - 120	<1.0	ug/L	NC	20		
8392668	Total Nickel (Ni)	2016/09/12	102	80 - 120	106	80 - 120	<1.0	ug/L	NC	20		
8392668	Total Selenium (Se)	2016/09/12	105	80 - 120	104	80 - 120	<0.10	ug/L	NC	20		
8392668	Total Silicon (Si)	2016/09/12					<100	ug/L	2.7	20		
8392668	Total Silver (Ag)	2016/09/12	110	80 - 120	97	80 - 120	<0.020	ug/L	NC	20		
8392668	Total Strontium (Sr)	2016/09/12	NC	80 - 120	93	80 - 120	<1.0	ug/L	1.7	20		
8392668	Total Thallium (Tl)	2016/09/12	94	80 - 120	99	80 - 120	<0.050	ug/L	NC	20		
8392668	Total Tin (Sn)	2016/09/12	103	80 - 120	102	80 - 120	<5.0	ug/L	NC	20		
8392668	Total Titanium (Ti)	2016/09/12	104	80 - 120	104	80 - 120	<5.0	ug/L	NC	20		
8392668	Total Uranium (U)	2016/09/12	108	80 - 120	104	80 - 120	<0.10	ug/L	4.3	20		
8392668	Total Vanadium (V)	2016/09/12	103	80 - 120	102	80 - 120	<5.0	ug/L	NC	20		
8392668	Total Zinc (Zn)	2016/09/12	102	80 - 120	108	80 - 120	<5.0	ug/L	NC	20		
8392668	Total Zirconium (Zr)	2016/09/12					<0.50	ug/L	NC	20		
8392695	Benzene	2016/09/09	99	70 - 130	93	70 - 130	<0.40	ug/L	NC	30		
8392695	Ethylbenzene	2016/09/09	101	70 - 130	93	70 - 130	<0.40	ug/L	NC	30		

Maxxam Job #: B676084
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QUALITY ASSURANCE REPORT(CONT'D)

SLR CONSULTING (CANADA) LTD
Client Project #: 234.10106.00000
Site Location: Contact Lake
Sampler Initials: DAP, DSK

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8392695	F1 (C6-C10) - BTEX	2016/09/09					<100	ug/L	NC	30		
8392695	F1 (C6-C10)	2016/09/09	86	70 - 130	100	70 - 130	<100	ug/L	NC	30		
8392695	m & p-Xylene	2016/09/09	102	70 - 130	93	70 - 130	<0.80	ug/L	NC	30		
8392695	o-Xylene	2016/09/09	101	70 - 130	93	70 - 130	<0.40	ug/L	NC	30		
8392695	Toluene	2016/09/09	97	70 - 130	89	70 - 130	<0.40	ug/L	NC	30		
8392695	Xylenes (Total)	2016/09/09					<0.80	ug/L	NC	30		
8392696	Benzene	2016/09/09	98	70 - 130	86	70 - 130	<0.40	ug/L	NC	30		
8392696	Ethylbenzene	2016/09/09	98	70 - 130	87	70 - 130	<0.40	ug/L	NC	30		
8392696	F1 (C6-C10) - BTEX	2016/09/09					<100	ug/L	NC	30		
8392696	F1 (C6-C10)	2016/09/09	86	70 - 130	101	70 - 130	<100	ug/L	NC	30		
8392696	m & p-Xylene	2016/09/09	98	70 - 130	87	70 - 130	<0.80	ug/L	NC	30		
8392696	o-Xylene	2016/09/09	97	70 - 130	87	70 - 130	<0.40	ug/L	NC	30		
8392696	Toluene	2016/09/09	93	70 - 130	82	70 - 130	<0.40	ug/L	NC	30		
8392696	Xylenes (Total)	2016/09/09					<0.80	ug/L	NC	30		
8392777	Total Mercury (Hg)	2016/09/09	92	80 - 120	98	80 - 120	<0.010	ug/L	NC	20		
8392781	Total Mercury (Hg)	2016/09/09	89	80 - 120	99	80 - 120	<0.010	ug/L	NC	20		
8393003	Dissolved Organic Carbon (C)	2016/09/09	120	80 - 120	105	80 - 120	<0.50	mg/L	1.4	20		
8393323	Total Aluminum (Al)	2016/09/10	107	80 - 120	107	80 - 120	<3.0	ug/L	1.1	20		
8393323	Total Antimony (Sb)	2016/09/10	116	80 - 120	100	80 - 120	<0.50	ug/L	NC	20		
8393323	Total Arsenic (As)	2016/09/10	97	80 - 120	96	80 - 120	<0.10	ug/L	NC	20		
8393323	Total Barium (Ba)	2016/09/10	99	80 - 120	103	80 - 120	<1.0	ug/L	0.29	20		
8393323	Total Beryllium (Be)	2016/09/10	99	80 - 120	97	80 - 120	<0.10	ug/L	NC	20		
8393323	Total Bismuth (Bi)	2016/09/10	96	80 - 120	100	80 - 120	<1.0	ug/L	NC	20		
8393323	Total Boron (B)	2016/09/10	104	80 - 120	98	80 - 120	<50	ug/L	NC	20		
8393323	Total Cadmium (Cd)	2016/09/10	101	80 - 120	100	80 - 120	<0.010	ug/L	NC	20		
8393323	Total Chromium (Cr)	2016/09/10	119	80 - 120	100	80 - 120	<1.0	ug/L	NC	20		
8393323	Total Cobalt (Co)	2016/09/10	98	80 - 120	100	80 - 120	<0.50	ug/L	NC	20		
8393323	Total Copper (Cu)	2016/09/10	100	80 - 120	100	80 - 120	<0.50	ug/L	0.56	20		
8393323	Total Iron (Fe)	2016/09/10	113	80 - 120	109	80 - 120	<10	ug/L	NC	20		
8393323	Total Lead (Pb)	2016/09/10	99	80 - 120	101	80 - 120	<0.20	ug/L	NC	20		
8393323	Total Lithium (Li)	2016/09/10	97	80 - 120	97	80 - 120	<5.0	ug/L	NC	20		

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QUALITY ASSURANCE REPORT(CONT'D)

SLR CONSULTING (CANADA) LTD
Client Project #: 234.10106.00000
Site Location: Contact Lake
Sampler Initials: DAP, DSK

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8393323	Total Manganese (Mn)	2016/09/10	95	80 - 120	98	80 - 120	<1.0	ug/L	4.0	20		
8393323	Total Molybdenum (Mo)	2016/09/10	120	80 - 120	104	80 - 120	<1.0	ug/L	NC	20		
8393323	Total Nickel (Ni)	2016/09/10	104	80 - 120	100	80 - 120	<1.0	ug/L	NC	20		
8393323	Total Selenium (Se)	2016/09/10	101	80 - 120	101	80 - 120	<0.10	ug/L	NC	20		
8393323	Total Silicon (Si)	2016/09/10					<100	ug/L	NC	20		
8393323	Total Silver (Ag)	2016/09/10	113	80 - 120	96	80 - 120	<0.020	ug/L	NC	20		
8393323	Total Strontium (Sr)	2016/09/10	NC	80 - 120	98	80 - 120	<1.0	ug/L	0.78	20		
8393323	Total Thallium (Tl)	2016/09/10	87	80 - 120	99	80 - 120	<0.050	ug/L	NC	20		
8393323	Total Tin (Sn)	2016/09/10	101	80 - 120	103	80 - 120	<5.0	ug/L	NC	20		
8393323	Total Titanium (Ti)	2016/09/10	86	80 - 120	93	80 - 120	<5.0	ug/L	NC	20		
8393323	Total Uranium (U)	2016/09/10	98	80 - 120	100	80 - 120	<0.10	ug/L	9.8	20		
8393323	Total Vanadium (V)	2016/09/10	96	80 - 120	99	80 - 120	<5.0	ug/L	NC	20		
8393323	Total Zinc (Zn)	2016/09/10	95	80 - 120	101	80 - 120	<5.0	ug/L	NC	20		
8393323	Total Zirconium (Zr)	2016/09/10					<0.50	ug/L	NC	20		
8394653	Dissolved Organic Carbon (C)	2016/09/12	110	80 - 120	100	80 - 120	<0.50	mg/L	NC	20		
8394853	Dissolved Mercury (Hg)	2016/09/12	82	80 - 120	97	80 - 120	<0.010	ug/L	NC	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

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

Maxxam Job #: B676084
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SLR CONSULTING (CANADA) LTD
Client Project #: 234.10106.00000
Site Location: Contact Lake
Sampler Initials: DAP, DSK

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Anna Koksharova, M.Sc., Organics Senior Analyst



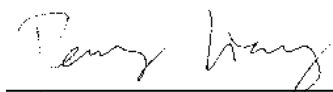
Andy Lu, Ph.D., P.Chem., Scientific Specialist



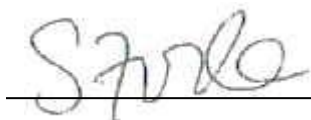
Justin Geisel, B.Sc., Organics Supervisor



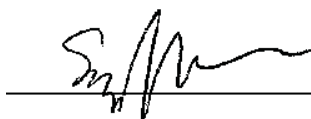
Maria Magdalena Florescu, Ph.D., P.Chem., QP, Inorganics Senior Analyst



Harry (Peng) Liang, Senior Analyst



Suwan Fock, B.Sc., QP, Inorganics Senior Analyst



Sandy Yuan, M.Sc., Scientific Specialist

Maxxam Job #: B676084
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.10106.00000
Site Location: Contact Lake
Sampler Initials: DAP, DSK

VALIDATION SIGNATURE PAGE(CONT'D)

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

INVOICE TO:
Company Name: #1776 SLR CONSULTING (CANADA) LTD
Contact Name: Jay Cherian - KATRINA NOKLEBY
Address: #44-5022 49th St Yellowknife
Phone: 867-765-5695
Fax: 867-765-5695
Email: jcherian@slrconsulting.com; analytical@slrconsulting.c

Report Information
Company Name: SAME
Contact Name: SAME
Address: SAME
Phone: INVOICE Knokleby@slrconsulting.com
Fax: SAME

Project Information
Quotation #: B51186
P.O. #: 234.01016.00000
Project #: GREAT BEAR LAKE
Project Name: GREAT BEAR LAKE
Site #: DAP/BSK
Sampled By: DAP/BSK

Laboratory Use Only
Maxxam Job #: 676084 BTR
Bottle Order #: 504001
Chain Of Custody Record
Project Manager: Letitia Prefontaine
Turnaround Time (TAT) Required: 5 days

Regulatory Criteria:
☐ CSR
☐ CCME
☐ BC Water Quality
☐ Other

Special Instructions
HOLD LEAD-210
+ Radium-226

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Metals Field Filtered? (Y/N)	Alkalinity, Conductivity, pH, Turbidity, TSS, TDS	Chloride, Sulphate	Ammonia, Orthophosphates, Dissolved phosphate, Total phosphate, Nitrate, Nitrite, DOC	Total Metals in Water w/ CV Hg & Total Hardness	Hexavalent Chromium (Total)	Dissolved Metals in Water w/ CV Hg & Dissolved Hardness	CCME BTEX/F in Water	CCME F2-F4 in Water	Gross Alpha & Beta	Lead-210 & Radium-226
Y	X	X	X	X	X	X	X	X	X	X
	X	X	X	X	X	X	X	X	X	X
	X	X	X	X					X	X
	X	X	X	X		X			X	X
	X	X	X	X		X				9
	X	X	X	X					X	X
	X	X	X	X	X	X			X	X
	X	X	X	X						7
	X	X	X	X	X		X	X		12
	X	X	X	X					X	X

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

Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix
1	CL-2	08/31/2016	10:13	SW
2	CL-15		11:02	
3	CL-26-2M		12:37	
4	CL-5		13:15	
5	DUP 3		13:15	
6	CL-26		13:32	
7	CL-3		13:46	
8	DUP 2		13:46	
9	CL-24		14:10	
10	CL-14		14:26	

Regular (Standard) TAT:
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans > 5 days - contact your Project Manager for details.
Job Specific Rush TAT (if applies to entire submission):
1 DAY ☐ 2 Day ☐ 3 Day ☐ Date Required: ☐
Rush Confirmation Number: ☐ (call lab for #)
Comments:

RECEIVED IN YELLOWKNIFE
By: [Signature]
2016-09-02
3.3, 4, 4.5
Temp: 4.4, 5.4, 5.4

RELINQUISHED BY: (Signature/Print) [Signature] Date: (YY/MM/DD) 16/09/02 Time: 9:55
RECEIVED BY: (Signature/Print) [Signature] Date: (YY/MM/DD) 16/09/02 Time: 12:30
jars used and not submitted: 0
Time Sensitive: ☐ Temperature (°C) on Receipt: See ACTR
Custody Seal Intact on Cooler? ☐ Yes ☐ No
White: Maxxam Yellow: Client

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

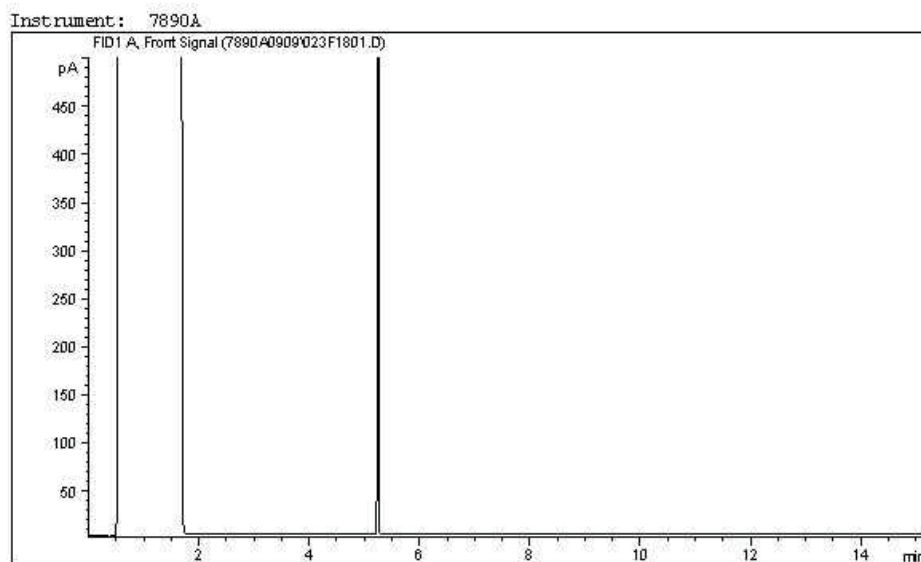
INVOICE TO:		Report Information		Project Information		Laboratory Use Only	
Company Name: #1776 SLR CONSULTING (CANADA) LTD		Company Name: SLR CONSULTING		Quotation #: B51186		Maxxam Job #	
Contact Name: Jay Chertan KATRINA NOKLEBY		Contact Name: KATRINA NOKLEBY		P.O. #		Bottle Order #:	
Address: #44-5022 49th ST YELLOWKNIFE NT X1A 3B8		Address: SAME		Project #		Chain Of Custody Record	
Phone: 867-765-5695		Email: 1 analytical@slrconsulting.com		Project Name: GREAT BEAR LAKE		Project Manager	
Email: jchertan@slrconsulting.com; analytical@slrconsulting.com		Email: 2 ktrina@slrconsulting.com		Site #		Letitia Prefontaine	
Regulatory Criteria: knokleby@slrconsulting.com		Special Instructions: 3 knokleby@slrconsulting.com		Sampled By: DAD/DSK		C#504001-05-01	

<input type="checkbox"/> CSR <input type="checkbox"/> CCME <input type="checkbox"/> BC Water Quality <input type="checkbox"/> Other	Hold LEAD-210 & Radium-226	Turnaround Time (TAT) Required: Please provide advance notice for rush projects. Regular (Standard) TAT: (will be applied if Rush TAT is not specified) Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details. Job Specific Rush TAT (if applies to entire submission) 1 DAY <input type="checkbox"/> 2 Day <input type="checkbox"/> 3 Day <input type="checkbox"/> Date Required: <input type="checkbox"/> Rush Confirmation Number: <input type="checkbox"/> (call lab for #)
--	-------------------------------	---

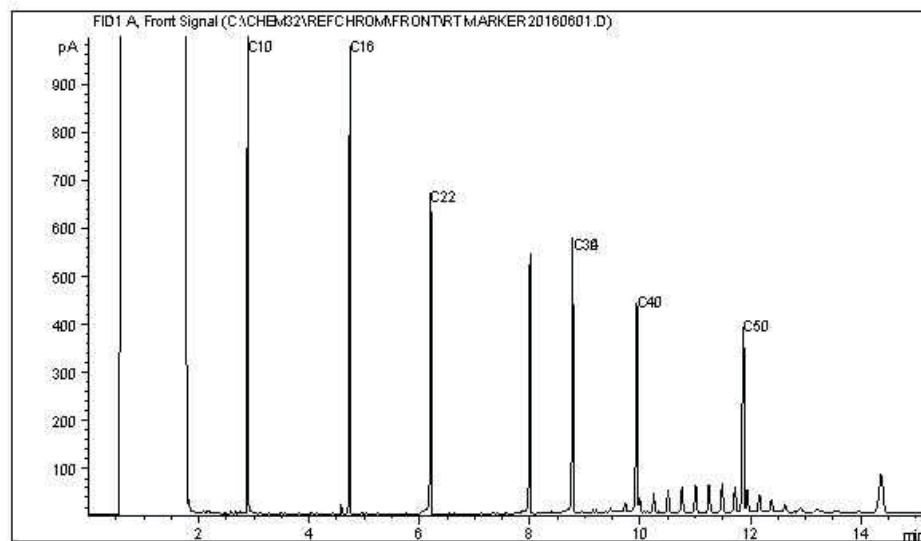
SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM					Metals Field Filtered	Alkalinity, Conductivity, TSS, TDS	Chloride, Sulphate	Orthophosphate, Total Nitrite, DOC	Total Metals in Water Total Hardness	Hexavalent Chromium	Dissolved Metals & Dissolved Hardness	CCME BTEX/F1	CCME F2-F4 in Water	Gross Alpha & Beta	Lead-210 & Radium-226	Job Specific Rush TAT (if applies to entire submission)	
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix												1 DAY <input type="checkbox"/> 2 Day <input type="checkbox"/> 3 Day <input type="checkbox"/> Date Required: _____	
Rush Confirmation Number: _____ (call lab for #)																	
# of Bottles	Comments																
1	CL-9	16/08/31	15:20	SW	Y	X	X	X	X							7	
2	CL-8-2M		15:47			X	X	X	X					X	X	10	
3	CL-7-EA-2M		16:11			X	X	X	X		X	X	X	X	X	16	
4	CL-27-EA		16:41			X	X	X	X		X					9	
5	CL-16-EA-2m		17:40			X	X	X	X		X			X	X	12	
6	CL-16-EA-10M		17:52			X	X	X	X		X			X	X	12	
7	DUP B		18:00			X	X	X	X					X	X	10	RECEIVED IN YELLOW KNIFE
8	TRIP BLANK					X	X	X	X					X	X	10	By: _____
9																	2016-09-02
10																	4,4,5 3,4,4

* RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)		Time		RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)		Time		# jars used and not submitted		Time Sensitive		Temperature (°C) on Receipt		Custody Seal Intact on Cooler?	
Darius Peterson		16/09/02		9:55		Katrina Nokleby		16/09/02		12:30		X		<input type="checkbox"/>		See ACTR		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Katrina Nokleby		16/09/02		15:10		Darius Peterson		2016/09/04		15:28									

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram

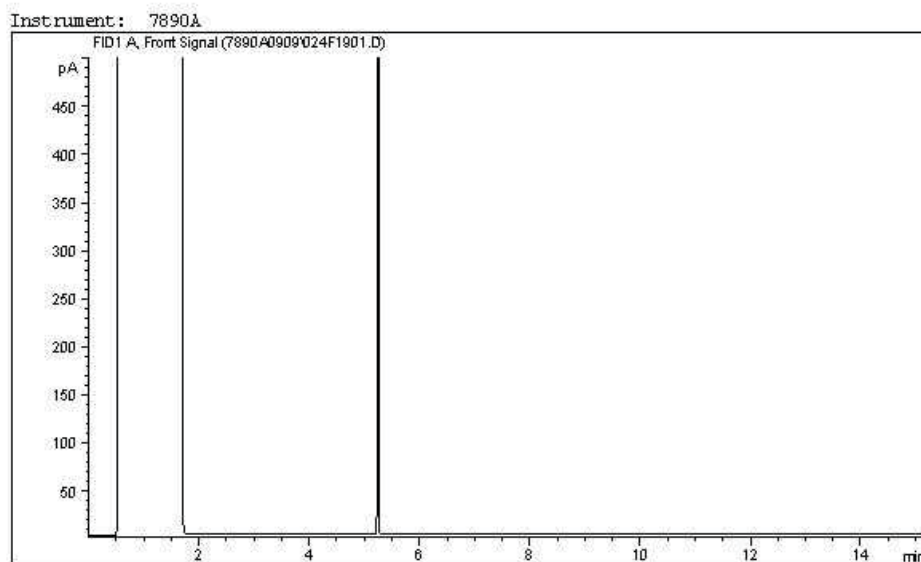


TYPICAL PRODUCT CARBON NUMBER RANGES

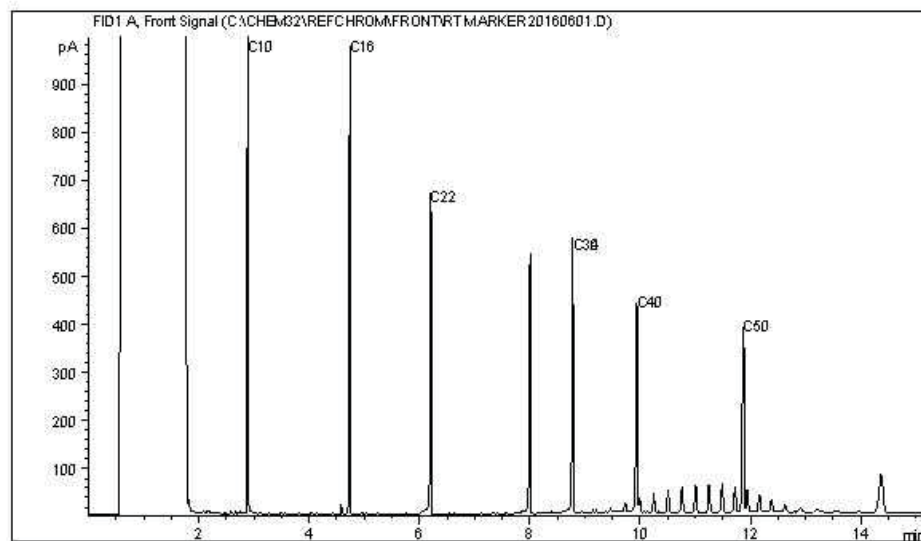
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram

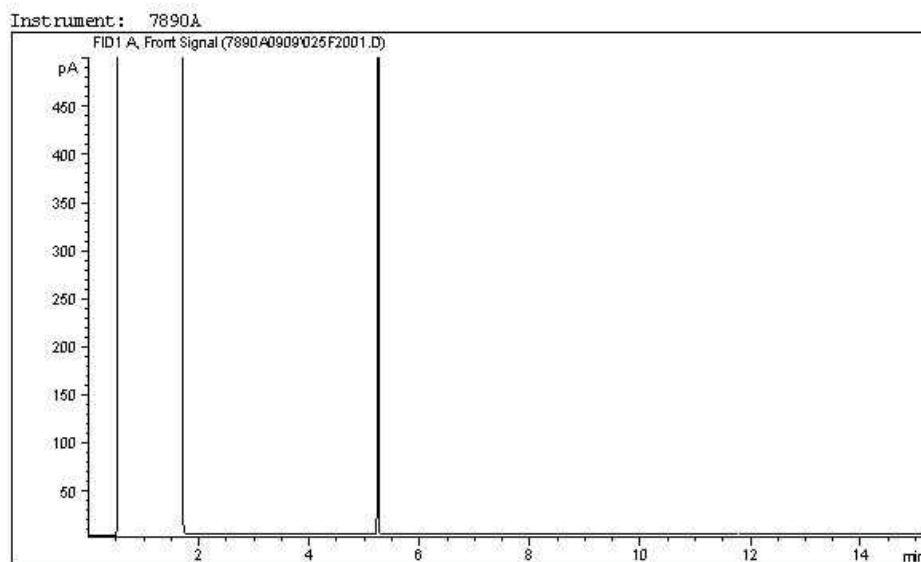


TYPICAL PRODUCT CARBON NUMBER RANGES

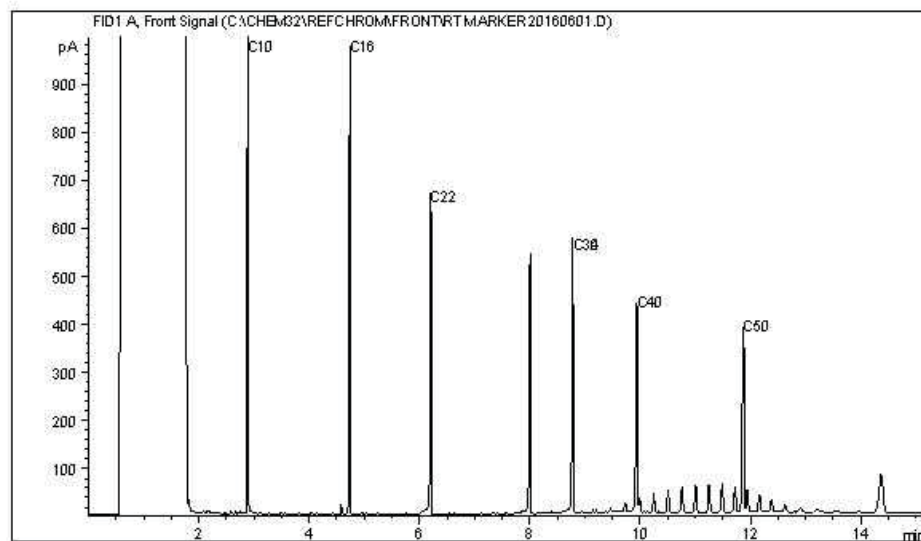
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram

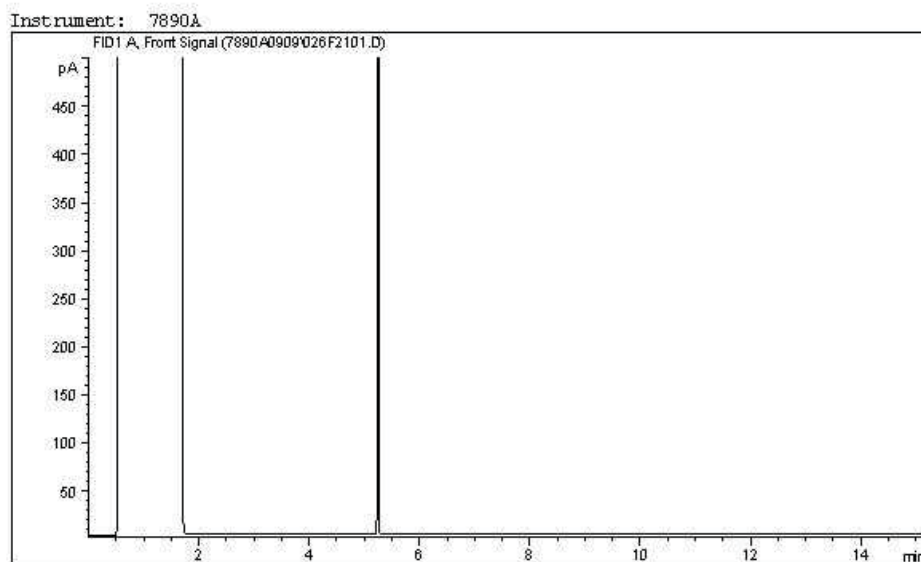


TYPICAL PRODUCT CARBON NUMBER RANGES

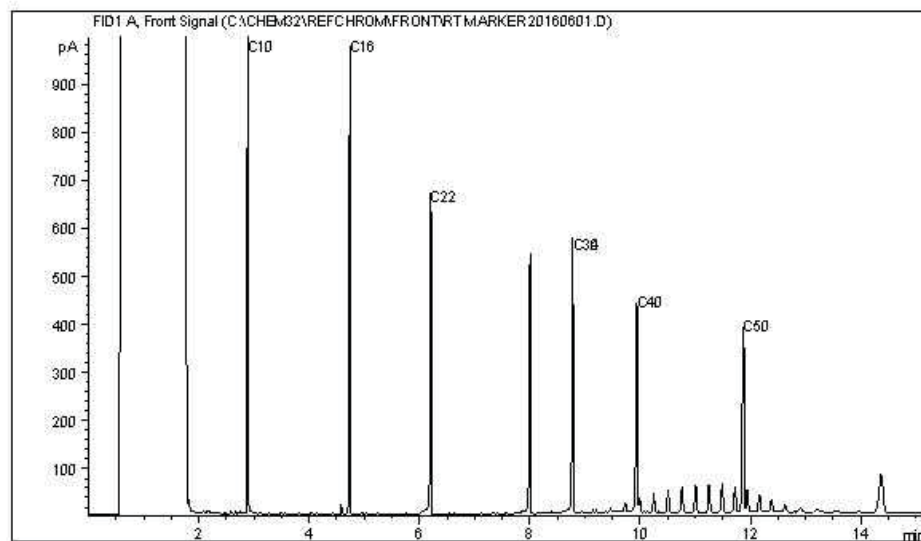
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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

Cynny Hagen

From: Cynny Hagen
Sent: September-22-16 10:38 AM
To: Simona Vatamanescu
Cc: Carmen McKay
Subject: Addon test on B6J0913

Hello Simona,

Can you use the same bottle for Radium-226 and Lead-210. Client would like to run the analysis on top of the Gross Alpha and Beta.

Do you need another sample bottle or sublet sheet?

Thank you.

CYNNY HAGEN

Environmental Project Manager - Alberta Environmental
chagen@maxxam.ca

Office 403 735 2273
Toll free 800 386 7247 / Fax 403 735 2240

From: Carmen McKay
Sent: September-22-16 9:04 AM
To: Cynny Hagen
Subject: FW: Follow-Up to Contact Lake MaxJob#: B676084,

From: Jay Cherian
Sent: Thursday, September 22, 2016 9:00:59 AM (UTC-07:00) Mountain Time (US & Canada)
To: Carmen McKay
Cc: Katrina Nokleby
Subject: Follow-Up to Contact Lake MaxJob#: B676084,

Hi Carmen,

Based on the results of radionuclide testing at Contact Lake, I am requesting further testing of samples collected at the following sites:

- CL-2
- CL-15
- CL-3 and
- CL-5

Please test these samples for Radium-226 and Lead-210.

Regards,

Jay

Jay Cherian

Principal Environmental Scientist

SLR Consulting (Canada) Ltd.

Direct: 867-689-2021

Cell: 867-689-2021

Email: jcherian@slrconsulting.com

6131 6th Avenue, Whitehorse, YT, Y1A 1N2, Canada

www.slrconsulting.com

**Confidentiality Notice and Disclaimer**

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Terra Mine

Your Project #: 234.01016.00000 GREAT BEAR LAK
Site#: Silver Bear
Site Location: TERRA

Attention:Katrina Nokleby

SLR CONSULTING (CANADA) LTD
#200 - 1620 WEST 8TH AVENUE
VANCOUVER, BC
Canada V6J 1V4

Your C.O.C. #: 504160-04-01, 504160-01-01, 504160-03-01

Report Date: 2017/04/10

Report #: R2367573

Version: 4 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B677434

Received: 2016/09/07, 08:40

Sample Matrix: Water
Samples Received: 26

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO ₃ ,HCO ₃ ,OH	26	N/A	2016/09/09	AB SOP-00005	SM 22 2320 B m
BTEX/F1 in Water by HS GC/MS/FID	7	N/A	2016/09/12	AB SOP-00039	CCME CWS/EPA 8260c m
BTEX/F1 in Water by HS GC/MS/FID	2	N/A	2016/09/13	AB SOP-00039	CCME CWS/EPA 8260c m
Chloride by Automated Colourimetry	25	N/A	2016/09/09	AB SOP-00020	SM 22 4500-Cl G m
Chloride by Automated Colourimetry	1	N/A	2016/09/10	AB SOP-00020	SM 22 4500-Cl G m
Carbon (DOC) -Lab Filtered (2)	1	N/A	2016/09/13	EENVSOP-00060	MMCW 119 1996 m
Carbon (DOC) (3)	8	N/A	2016/09/12	EENVSOP-00060	MMCW 119 1996 m
Carbon (DOC) (3)	16	N/A	2016/09/13	EENVSOP-00060	MMCW 119 1996 m
Carbon (DOC) (3)	1	N/A	2016/09/14	EENVSOP-00060	MMCW 119 1996 m
Conductivity @25C	26	N/A	2016/09/09	AB SOP-00005	SM 22 2510 B m
CCME Hydrocarbons (F2-F4 in water) (4)	9	2016/09/11	2016/09/11	AB SOP-00037 / AB SOP-00040	CCME PHC-CWS m
Hardness Total (calculated as CaCO ₃) (1)	4	N/A	2016/09/13	BBY WI-00033	Auto Calc
Hardness Total (calculated as CaCO ₃) (1)	17	N/A	2016/09/14	BBY WI-00033	Auto Calc
Hardness Total (calculated as CaCO ₃) (1)	5	N/A	2016/09/15	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO ₃) (1)	8	N/A	2016/09/14	BBY WI-00033	Auto Calc
Mercury (Dissolved) by CVAf (1)	6	N/A	2016/09/14	BBY7SOP-00015	BCMOE BCLM Oct2013 m
Mercury (Dissolved) by CVAf (1)	2	N/A	2016/09/15	BBY7SOP-00015	BCMOE BCLM Oct2013 m
Mercury (Total) by CVAf (1)	26	2016/09/14	2016/09/14	BBY7SOP-00015	BCMOE BCLM Oct2013 m
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (1)	8	N/A	2016/09/14	BBY7SOP-00002	EPA 6020A R1 m
Elements by CRC ICPMS (dissolved) (1)	8	N/A	2016/09/14	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (1)	4	2016/09/08	2016/09/13	BBY7SOP-00002	EPA 6020A R1 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (1)	17	2016/09/08	2016/09/14	BBY7SOP-00002	EPA 6020A R1 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (1)	5	2016/09/08	2016/09/15	BBY7SOP-00002	EPA 6020A R1 m
Elements by CRC ICPMS (total) (1)	14	2016/09/13	2016/09/13	BBY7SOP-00003,	BCLM2005,EPA6020bR2m
Elements by CRC ICPMS (total) (1)	7	2016/09/13	2016/09/14	BBY7SOP-00003,	BCLM2005,EPA6020bR2m
Elements by CRC ICPMS (total) (1)	1	2016/09/14	2016/09/14	BBY7SOP-00003,	BCLM2005,EPA6020bR2m
Elements by CRC ICPMS (total) (1)	4	2016/09/14	2016/09/15	BBY7SOP-00003,	BCLM2005,EPA6020bR2m

Your Project #: 234.01016.00000 GREAT BEAR LAK
Site#: Silver Bear
Site Location: TERRA

Attention:Katrina Nokleby

SLR CONSULTING (CANADA) LTD
#200 - 1620 WEST 8TH AVENUE
VANCOUVER, BC
Canada V6J 1V4

Your C.O.C. #: 504160-04-01, 504160-01-01, 504160-03-01

Report Date: 2017/04/10

Report #: R2367573

Version: 4 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B677434

Received: 2016/09/07, 08:40

Sample Matrix: Water
Samples Received: 26

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Ammonia-N (Total)	26	N/A	2016/09/09	AB SOP-00007	EPA 350.1 R2.0 m
Nitrate and Nitrite	24	N/A	2016/09/10	AB WI-00065	Auto Calc
Nitrate and Nitrite	2	N/A	2016/09/11	AB WI-00065	Auto Calc
Nitrate + Nitrite-N (calculated)	24	N/A	2016/09/10	AB WI-00065	Auto Calc
Nitrate + Nitrite-N (calculated)	2	N/A	2016/09/11	AB WI-00065	Auto Calc
Nitrogen, (Nitrite, Nitrate) by IC (5)	24	N/A	2016/09/09	AB SOP-00023	SM 22 4110 B m
Nitrogen, (Nitrite, Nitrate) by IC (5)	2	N/A	2016/09/10	AB SOP-00023	SM 22 4110 B m
Filter and HNO3 Preserve for Metals (1)	8	N/A	2016/09/14	BBY7 WI-00004	BCMOE Reqs 08/14
pH @25°C (6)	26	N/A	2016/09/09	AB SOP-00005	SM 22 4500 H+ B m
Orthophosphate by Konelab (5)	26	N/A	2016/09/09	AB SOP-00025	SM 22 4500-P A,B,F m
Sulphate by Automated Colourimetry	25	N/A	2016/09/09	AB SOP-00018	SM 22 4500-SO4 E m
Sulphate by Automated Colourimetry	1	N/A	2016/09/10	AB SOP-00018	SM 22 4500-SO4 E m
Total Dissolved Solids (Filt. Residue)	6	2016/09/09	2016/09/12	AB SOP-00065	SM 22 2540 C m
Total Dissolved Solids (Filt. Residue)	20	2016/09/09	2016/09/13	AB SOP-00065	SM 22 2540 C m
Total Phosphorus-Dissolved-Lab Filtered	1	2016/09/12	2016/09/13	AB SOP-00024	SM 22 4500-P A,B,F m
Phosphorus -P (Total, Dissolved)	15	2016/09/12	2016/09/13	AB SOP-00024	SM 22 4500-P A,B,F m
Phosphorus -P (Total, Dissolved)	5	2016/09/13	2016/09/14	AB SOP-00024	SM 22 4500-P A,B,F m
Phosphorus -P (Total, Dissolved)	5	2016/09/14	2016/09/14	AB SOP-00024	SM 22 4500-P A,B,F m
Total Phosphorus	16	2016/09/12	2016/09/13	AB SOP-00024	SM 22 4500-P A,B,F m
Total Phosphorus	5	2016/09/13	2016/09/14	AB SOP-00024	SM 22 4500-P A,B,F m
Total Phosphorus	5	2016/09/14	2016/09/14	AB SOP-00024	SM 22 4500-P A,B,F m
Total Suspended Solids (NFR)	6	2016/09/09	2016/09/09	AB SOP-00061	SM 22 2540 D m
Total Suspended Solids (NFR)	20	2016/09/09	2016/09/13	AB SOP-00061	SM 22 2540 D m
Turbidity (5)	26	N/A	2016/09/09	EENVSOP-00066	SM 22 2130 B m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

Your Project #: 234.01016.00000 GREAT BEAR LAK
Site#: Silver Bear
Site Location: TERRA

Attention:Katrina Nokleby

SLR CONSULTING (CANADA) LTD
#200 - 1620 WEST 8TH AVENUE
VANCOUVER, BC
Canada V6J 1V4

Your C.O.C. #: 504160-04-01, 504160-01-01, 504160-03-01

Report Date: 2017/04/10

Report #: R2367573

Version: 4 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B677434

Received: 2016/09/07, 08:40

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

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

Results relate to samples tested.

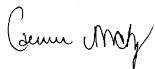
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

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

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

- (1) This test was performed by Maxxam Vancouver
- (2) DOC present in the sample should be considered as non-purgeable DOC.
- (3) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: Whenever applicable, Dissolved > Total for any parameter that falls within method uncertainty for duplicates is likely equivalent. If RPD is >20% samples were reanalyzed and confirmed.
- (4) Silica gel clean up employed.
- (5) Analysis completed within 48h after laboratory receipt to a maximum of five days from sampling is satisfactory for compliance purposes.
- (6) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Maxxam endeavours to analyze samples as soon as possible after receipt.

Encryption Key



Carmen McKay
Project Manager
10 Apr 2017 11:30:29

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Carmen McKay, Project Manager

Email: CMcKay@maxxam.ca

Phone# (403)219-3683

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B677434
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

AT1 BTEX AND F1-F4 IN WATER (WATER)

Maxxam ID		PL7018	PL7019	PL7042	PL7044	PL7045	PL7046		
Sampling Date		2016/09/03 11:43	2016/09/03 11:05	2016/09/03 09:37	2016/09/02 15:26	2016/09/05 16:46	2016/09/02 18:48		
COC Number		504160-04-01	504160-04-01	504160-01-01	504160-01-01	504160-01-01	504160-01-01		
	UNITS	T5	T3	T18	R3	R4	T8A	RDL	QC Batch
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	8393923
F3 (C16-C34 Hydrocarbons)	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	8393923
F4 (C34-C50 Hydrocarbons)	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	8393923
Reached Baseline at C50	mg/L	Yes	Yes	Yes	Yes	Yes	Yes		8393923
Volatiles									
Benzene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	8394426
Toluene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	8394426
Ethylbenzene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	8394426
m & p-Xylene	ug/L	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80	0.80	8394426
o-Xylene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	8394426
Xylenes (Total)	ug/L	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80	0.80	8394426
F1 (C6-C10) - BTEX	ug/L	<100	<100	<100	<100	<100	<100	100	8394426
F1 (C6-C10)	ug/L	<100	<100	<100	<100	<100	<100	100	8394426
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	99	99	95	96	99	96		8394426
4-Bromofluorobenzene (sur.)	%	100	100	102	101	104	101		8394426
D4-1,2-Dichloroethane (sur.)	%	103	111	120	117	119	118		8394426
O-TERPHENYL (sur.)	%	94	95	95	94	95	94		8393923
RDL = Reportable Detection Limit									

Maxxam Job #: B677434
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

AT1 BTEX AND F1-F4 IN WATER (WATER)

Maxxam ID		PL7048		PL7049		PL7164		
Sampling Date		2016/09/03 14:51		2016/09/03 13:42		2016/09/04 19:30		
COC Number		504160-01-01		504160-01-01		504160-03-01		
	UNITS	T19	QC Batch	T6	QC Batch	T25	RDL	QC Batch
Ext. Pet. Hydrocarbon								
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	8393923	<0.10	8393923	<0.10	0.10	8393923
F3 (C16-C34 Hydrocarbons)	mg/L	<0.20	8393923	<0.20	8393923	<0.20	0.20	8393923
F4 (C34-C50 Hydrocarbons)	mg/L	<0.20	8393923	<0.20	8393923	<0.20	0.20	8393923
Reached Baseline at C50	mg/L	Yes	8393923	Yes	8393923	Yes		8393923
Volatiles								
Benzene	ug/L	<0.40	8394492	<0.40	8394426	<0.40	0.40	8394492
Toluene	ug/L	<0.40	8394492	<0.40	8394426	<0.40	0.40	8394492
Ethylbenzene	ug/L	<0.40	8394492	<0.40	8394426	<0.40	0.40	8394492
m & p-Xylene	ug/L	<0.80	8394492	<0.80	8394426	<0.80	0.80	8394492
o-Xylene	ug/L	<0.40	8394492	<0.40	8394426	<0.40	0.40	8394492
Xylenes (Total)	ug/L	<0.80	8394492	<0.80	8394426	<0.80	0.80	8394492
F1 (C6-C10) - BTEX	ug/L	<100	8394492	<100	8394426	<100	100	8394492
F1 (C6-C10)	ug/L	<100	8394492	<100	8394426	<100	100	8394492
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	95	8394492	98	8394426	95		8394492
4-Bromofluorobenzene (sur.)	%	104	8394492	100	8394426	103		8394492
D4-1,2-Dichloroethane (sur.)	%	116	8394492	109	8394426	116		8394492
O-TERPHENYL (sur.)	%	100	8393923	93	8393923	93		8393923
RDL = Reportable Detection Limit								

Maxxam Job #: B677434
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		PL7018	PL7019	PL7020	PL7021	PL7023	PL7022		
Sampling Date		2016/09/03 11:43	2016/09/03 11:05	2016/09/03 10:28	2016/09/03 10:28	2016/09/03 10:08	2016/09/02 18:33		
COC Number		504160-04-01	504160-04-01	504160-04-01	504160-04-01	504160-04-01	504160-04-01		
	UNITS	T5	T3	T1	DUP 6	T17	T8B	RDL	QC Batch

Calculated Parameters

Filter and HNO3 Preservation	N/A						FIELD		ONSITE
Dissolved Nitrate (NO3)	mg/L	<0.044	<0.044	<0.044	<0.044	<0.044	0.13	0.044	8391932
Nitrate plus Nitrite (N)	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	0.040	0.020	8391933
Dissolved Nitrite (NO2)	mg/L	<0.033	<0.033	<0.033	<0.033	<0.033	0.034	0.033	8391932

Misc. Inorganics

Conductivity	uS/cm	210	210	140	150	160	210	1.0	8392405
Dissolved Organic Carbon (C)	mg/L	13	13	6.9	6.5	16	13	0.50	8394656
pH	pH	7.86	7.93	7.79	7.75	7.32	7.62	N/A	8392401
Total Dissolved Solids	mg/L	150	130	100	110	180	160	10	8392556
Total Suspended Solids	mg/L	1.3	2.0	<1.0	<1.0	6.0	<1.0	1.0	8392528

Anions

Alkalinity (PP as CaCO3)	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8392404
Alkalinity (Total as CaCO3)	mg/L	65	64	59	56	67	63	0.50	8392404
Bicarbonate (HCO3)	mg/L	79	79	72	68	82	77	0.50	8392404
Carbonate (CO3)	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8392404
Hydroxide (OH)	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8392404
Dissolved Sulphate (SO4)	mg/L	19	19	14	14	13	18	1.0	8393301
Dissolved Chloride (Cl)	mg/L	13	13	2.0	2.1	1.6	14	1.0	8393293

Nutrients

Total Ammonia (N)	mg/L	0.024 (1)	0.023 (1)	0.017 (1)	0.021 (1)	0.029 (1)	0.030 (1)	0.0067	8392812
Orthophosphate (P)	mg/L	0.020	0.024	<0.0030	<0.0030	0.021	0.019	0.0030	8393295
Dissolved Phosphorus (P)	mg/L	<0.0030	<0.0030	0.0030	0.0040	0.0030	<0.0030	0.0030	8394774
Total Phosphorus (P)	mg/L	0.0040	0.0040	0.0060	0.0050	0.0060	0.0030	0.0030	8394766
Dissolved Nitrite (N)	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	0.010	8392724
Dissolved Nitrate (N)	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.030	0.010	8392724

Physical Properties

Turbidity	NTU	0.62	1.5	0.73	0.80	0.98	0.44	0.10	8392563
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RDL = Reportable Detection Limit

N/A = Not Applicable

(1) Detection limit for ammonia calculated based on method detection limits (MDL) by client request.

Maxxam Job #: B677434
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		PL7024	PL7025		PL7026	PL7027		
Sampling Date		2016/09/02 18:16	2016/09/02 18:00		2016/09/02 17:42	2016/09/02 17:42		
COC Number		504160-04-01	504160-04-01		504160-04-01	504160-04-01		
	UNITS	T8C	T16-10M	QC Batch	T16-2M	DUP 7	RDL	QC Batch
Calculated Parameters								
Filter and HNO3 Preservation	N/A	FIELD	FIELD	ONSITE	FIELD	FIELD		ONSITE
Dissolved Nitrate (NO3)	mg/L	0.25	<0.044	8391932	<0.044	<0.044	0.044	8391932
Nitrate plus Nitrite (N)	mg/L	0.056	<0.020	8391933	<0.020	<0.020	0.020	8391933
Dissolved Nitrite (NO2)	mg/L	<0.033	<0.033	8391932	<0.033	<0.033	0.033	8391932
Misc. Inorganics								
Conductivity	uS/cm	210	210	8392405	210	210	1.0	8392405
Dissolved Organic Carbon (C)	mg/L	13	15	8394656	12	12	0.50	8395749
pH	pH	7.61	7.86	8392401	7.89	7.90	N/A	8392401
Total Dissolved Solids	mg/L	150	140	8392556	140	150	10	8392556
Total Suspended Solids	mg/L	<1.0	<1.0	8392528	<1.0	<1.0	1.0	8392528
Anions								
Alkalinity (PP as CaCO3)	mg/L	<0.50	<0.50	8392404	<0.50	<0.50	0.50	8392404
Alkalinity (Total as CaCO3)	mg/L	62	65	8392404	63	64	0.50	8392404
Bicarbonate (HCO3)	mg/L	76	79	8392404	77	78	0.50	8392404
Carbonate (CO3)	mg/L	<0.50	<0.50	8392404	<0.50	<0.50	0.50	8392404
Hydroxide (OH)	mg/L	<0.50	<0.50	8392404	<0.50	<0.50	0.50	8392404
Dissolved Sulphate (SO4)	mg/L	19	19	8393301	18	18	1.0	8393301
Dissolved Chloride (Cl)	mg/L	14	14	8393293	14	14	1.0	8393293
Nutrients								
Total Ammonia (N)	mg/L	0.027 (1)	0.017 (1)	8392812	0.019 (1)	0.018 (1)	0.0067	8392812
Orthophosphate (P)	mg/L	0.022	0.020	8393295	0.020	0.019	0.0030	8393295
Dissolved Phosphorus (P)	mg/L	0.0040	0.0050	8397019	0.0050	0.0060	0.0030	8394774
Total Phosphorus (P)	mg/L	0.010	0.0080	8397024	0.0070	0.0070	0.0030	8394766
Dissolved Nitrite (N)	mg/L	<0.010	<0.010	8392724	<0.010	<0.010	0.010	8392724
Dissolved Nitrate (N)	mg/L	0.056	<0.010	8392724	<0.010	<0.010	0.010	8392724
Physical Properties								
Turbidity	NTU	0.83	0.68	8392563	0.57	0.58	0.10	8392563
RDL = Reportable Detection Limit								
N/A = Not Applicable								
(1) Detection limit for ammonia calculated based on method detection limits (MDL) by client request.								

Maxxam Job #: B677434
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		PL7040		PL7041			PL7042		
Sampling Date		2016/09/02 17:07		2016/09/03 16:30			2016/09/03 09:37		
COC Number		504160-01-01		504160-01-01			504160-01-01		
	UNITS	T7	QC Batch	DUP D	RDL	QC Batch	T18	RDL	QC Batch
Calculated Parameters									
Dissolved Nitrate (NO3)	mg/L	<0.044	8391932	<0.044	0.044	8391932	<0.044	0.044	8391932
Nitrate plus Nitrite (N)	mg/L	<0.020	8391933	<0.020	0.020	8391933	<0.020	0.020	8391933
Dissolved Nitrite (NO2)	mg/L	<0.033	8391932	<0.033	0.033	8391932	<0.033	0.033	8391932
Misc. Inorganics									
Conductivity	uS/cm	210	8392405	<1.0	1.0	8392405	440	1.0	8392405
Dissolved Organic Carbon (C)	mg/L		8395749	1.0	0.50	8397504	36 (1)	1.0	8395749
pH	pH	7.90	8392401	4.82	N/A	8392401	7.76	N/A	8392401
Total Dissolved Solids	mg/L	140	8392556	<10	10	8392556	320	10	8392556
Total Suspended Solids	mg/L	<1.0	8392528	<1.0	1.0	8392528	10	1.0	8392528
Lab Filtered Inorganics									
Dissolved Organic Carbon (C)	mg/L	11	8396213		0.50				
Anions									
Alkalinity (PP as CaCO3)	mg/L	<0.50	8392404	<0.50	0.50	8392404	<0.50	0.50	8392404
Alkalinity (Total as CaCO3)	mg/L	65	8392404	<0.50	0.50	8392404	220	0.50	8392404
Bicarbonate (HCO3)	mg/L	80	8392404	<0.50	0.50	8392404	270	0.50	8392404
Carbonate (CO3)	mg/L	<0.50	8392404	<0.50	0.50	8392404	<0.50	0.50	8392404
Hydroxide (OH)	mg/L	<0.50	8392404	<0.50	0.50	8392404	<0.50	0.50	8392404
Dissolved Sulphate (SO4)	mg/L	16	8393301	<1.0	1.0	8393301	4.0	1.0	8393301
Dissolved Chloride (Cl)	mg/L	14	8393293	<1.0	1.0	8393293	5.9	1.0	8393293
Nutrients									
Total Ammonia (N)	mg/L	0.023 (2)	8392812	0.015 (2)	0.0067	8392812	0.075 (2)	0.0067	8392812
Orthophosphate (P)	mg/L	0.019	8393295	<0.0030	0.0030	8393295	0.043	0.0030	8393295
Dissolved Phosphorus (P)	mg/L		8394774	<0.0030	0.0030	8394774	0.022	0.0030	8397019
Total Phosphorus (P)	mg/L	0.0040	8394742	<0.0030	0.0030	8394766	0.047	0.0030	8397024
Dissolved Nitrite (N)	mg/L	<0.010	8392724	<0.010	0.010	8392724	<0.010	0.010	8392724
Dissolved Nitrate (N)	mg/L	<0.010	8392724	<0.010	0.010	8392724	<0.010	0.010	8392724
Lab Filtered Nutrients									
Dissolved Phosphorus (P)	mg/L	0.0040	8394727		0.0030				
RDL = Reportable Detection Limit N/A = Not Applicable (1) Detection limits raised due to dilution to bring analyte within the calibrated range. (2) Detection limit for ammonia calculated based on method detection limits (MDL) by client request.									

Maxxam Job #: B677434
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		PL7040		PL7041			PL7042		
Sampling Date		2016/09/02 17:07		2016/09/03 16:30			2016/09/03 09:37		
COC Number		504160-01-01		504160-01-01			504160-01-01		
	UNITS	T7	QC Batch	DUP D	RDL	QC Batch	T18	RDL	QC Batch
Physical Properties									
Turbidity	NTU	0.60	8392563	<0.10	0.10	8392563	7.2	0.10	8392563
RDL = Reportable Detection Limit									

Maxxam Job #: B677434
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		PL7043			PL7044		PL7045		
Sampling Date		2016/09/03 08:53			2016/09/02 15:26		2016/09/05 16:46		
COC Number		504160-01-01			504160-01-01		504160-01-01		
	UNITS	T2	RDL	QC Batch	R3	QC Batch	R4	RDL	QC Batch
Calculated Parameters									
Dissolved Nitrate (NO ₃)	mg/L	<0.044	0.044	8391932	<0.044	8391932	<0.044	0.044	8391932
Nitrate plus Nitrite (N)	mg/L	<0.020	0.020	8391933	<0.020	8391933	<0.020	0.020	8391933
Dissolved Nitrite (NO ₂)	mg/L	<0.033	0.033	8391932	<0.033	8391932	<0.033	0.033	8391932
Misc. Inorganics									
Conductivity	uS/cm	89	1.0	8392405	78	8392405	160	1.0	8392826
Dissolved Organic Carbon (C)	mg/L	20 (1)	1.0	8395749	9.6	8395749	6.3	0.50	8395749
pH	pH	7.54	N/A	8392401	7.68	8392401	7.84	N/A	8392821
Total Dissolved Solids	mg/L	100	10	8392556	60	8392556	88	10	8392556
Total Suspended Solids	mg/L	<1.0	1.0	8392528	<1.0	8392528	<1.0	1.0	8392528
Anions									
Alkalinity (PP as CaCO ₃)	mg/L	<0.50	0.50	8392404	<0.50	8392404	<0.50	0.50	8392825
Alkalinity (Total as CaCO ₃)	mg/L	35	0.50	8392404	34	8392404	58	0.50	8392825
Bicarbonate (HCO ₃)	mg/L	43	0.50	8392404	42	8392404	71	0.50	8392825
Carbonate (CO ₃)	mg/L	<0.50	0.50	8392404	<0.50	8392404	<0.50	0.50	8392825
Hydroxide (OH)	mg/L	<0.50	0.50	8392404	<0.50	8392404	<0.50	0.50	8392825
Dissolved Sulphate (SO ₄)	mg/L	3.7	1.0	8393301	1.3	8393301	15	1.0	8393321
Dissolved Chloride (Cl)	mg/L	<1.0	1.0	8393293	<1.0	8393293	2.5	1.0	8393319
Nutrients									
Total Ammonia (N)	mg/L	0.044 (2)	0.0067	8392820	0.019 (2)	8392820	0.016 (2)	0.0067	8392820
Orthophosphate (P)	mg/L	<0.0030	0.0030	8393295	<0.0030	8393295	<0.0030	0.0030	8393295
Dissolved Phosphorus (P)	mg/L	0.0030	0.0030	8394774	0.0030	8394774	0.0030	0.0030	8394774
Total Phosphorus (P)	mg/L	0.0060	0.0030	8394766	0.0050	8394766	0.0030	0.0030	8394766
Dissolved Nitrite (N)	mg/L	<0.010	0.010	8392724	<0.010	8392724	<0.010	0.010	8393740
Dissolved Nitrate (N)	mg/L	<0.010	0.010	8392724	<0.010	8392724	<0.010	0.010	8393740
Physical Properties									
Turbidity	NTU	0.78	0.10	8392563	0.76	8392568	0.34	0.10	8392568
RDL = Reportable Detection Limit									
N/A = Not Applicable									
(1) Detection limits raised due to dilution to bring analyte within the calibrated range.									
(2) Detection limit for ammonia calculated based on method detection limits (MDL) by client request.									

Maxxam Job #: B677434
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		PL7046		PL7047			PL7048		
Sampling Date		2016/09/02 18:48		2016/09/03 14:12			2016/09/03 14:51		
COC Number		504160-01-01		504160-01-01			504160-01-01		
	UNITS	T8A	QC Batch	T10	RDL	QC Batch	T19	RDL	QC Batch

Calculated Parameters

Filter and HNO3 Preservation	N/A	FIELD	ONSITE			ONSITE			ONSITE
Dissolved Nitrate (NO3)	mg/L	<0.044	8391932	0.049	0.044	8391932	0.24	0.044	8391932
Nitrate plus Nitrite (N)	mg/L	<0.020	8391933	<0.020	0.020	8391933	0.054	0.020	8391933
Dissolved Nitrite (NO2)	mg/L	<0.033	8391932	<0.033	0.033	8391932	<0.033	0.033	8391932

Misc. Inorganics

Conductivity	uS/cm	210	8392405	170	1.0	8392411	130	1.0	8392411
Dissolved Organic Carbon (C)	mg/L	14	8395749	6.4	0.50	8395749	24 (1)	1.0	8395749
pH	pH	7.93	8392401	7.69	N/A	8392407	7.33	N/A	8392407
Total Dissolved Solids	mg/L	130	8392556	92	10	8392556	120	10	8392556
Total Suspended Solids	mg/L	<1.0	8392528	<1.0	1.0	8392528	1.3	1.0	8392528

Anions

Alkalinity (PP as CaCO3)	mg/L	<0.50	8392404	<0.50	0.50	8392410	<0.50	0.50	8392410
Alkalinity (Total as CaCO3)	mg/L	65	8392404	63	0.50	8392410	49	0.50	8392410
Bicarbonate (HCO3)	mg/L	79	8392404	77	0.50	8392410	60	0.50	8392410
Carbonate (CO3)	mg/L	<0.50	8392404	<0.50	0.50	8392410	<0.50	0.50	8392410
Hydroxide (OH)	mg/L	<0.50	8392404	<0.50	0.50	8392410	<0.50	0.50	8392410
Dissolved Sulphate (SO4)	mg/L	18	8393321	17	1.0	8393321	6.0	1.0	8393321
Dissolved Chloride (Cl)	mg/L	14	8393319	2.3	1.0	8393319	1.1	1.0	8393319

Nutrients

Total Ammonia (N)	mg/L	0.022 (2)	8392820	0.018 (2)	0.0067	8392820	0.028 (2)	0.0067	8392820
Orthophosphate (P)	mg/L	0.018	8393295	0.0030	0.0030	8393295	0.046	0.0030	8393295
Dissolved Phosphorus (P)	mg/L	0.0060	8394774	<0.0030	0.0030	8394774	0.020	0.0030	8397019
Total Phosphorus (P)	mg/L	0.0080	8394766	0.0070	0.0030	8394766	0.032	0.0030	8397024
Dissolved Nitrite (N)	mg/L	<0.010	8392724	<0.010	0.010	8392782	<0.010	0.010	8392782
Dissolved Nitrate (N)	mg/L	<0.010	8392724	0.011	0.010	8392782	0.054	0.010	8392782

Physical Properties

Turbidity	NTU	0.59	8392568	1.0	0.10	8392568	1.2	0.10	8392568
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RDL = Reportable Detection Limit

N/A = Not Applicable

(1) Detection limits raised due to dilution to bring analyte within the calibrated range.

(2) Detection limit for ammonia calculated based on method detection limits (MDL) by client request.

Maxxam Job #: B677434
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		PL7049		PL7159		PL7160		PL7161		
Sampling Date		2016/09/03 13:42		2016/09/03 15:30		2016/09/03 15:40		2016/09/03 16:08		
COC Number		504160-01-01		504160-03-01		504160-03-01		504160-03-01		
	UNITS	T6	QC Batch	T4	QC Batch	T19B	QC Batch	T20	RDL	QC Batch

Calculated Parameters

Filter and HNO3 Preservation	N/A		ONSITE		ONSITE	FIELD	ONSITE			ONSITE
Dissolved Nitrate (NO3)	mg/L	0.26	8391932	0.066	8391932	<0.044	8391932	<0.044	0.044	8391932
Nitrate plus Nitrite (N)	mg/L	0.059	8391933	<0.020	8391933	<0.020	8391933	<0.020	0.020	8391933
Dissolved Nitrite (NO2)	mg/L	<0.033	8391932	<0.033	8391932	<0.033	8391932	<0.033	0.033	8391932

Misc. Inorganics

Conductivity	uS/cm	240	8392411	150	8392411	150	8392411	380	1.0	8392411
Dissolved Organic Carbon (C)	mg/L	12	8395749	7.0	8395749	4.9	8395749	10	0.50	8395749
pH	pH	7.50	8392407	7.79	8392407	7.82	8392407	7.86	N/A	8392407
Total Dissolved Solids	mg/L	120	8392201	56	8392201	92	8392556	220	10	8392201
Total Suspended Solids	mg/L	2.0	8392848	1.3	8392848	<1.0	8392528	2.7	1.0	8392848

Anions

Alkalinity (PP as CaCO3)	mg/L	<0.50	8392410	<0.50	8392410	<0.50	8392410	<0.50	0.50	8392410
Alkalinity (Total as CaCO3)	mg/L	78	8392410	57	8392410	55	8392410	120	0.50	8392410
Bicarbonate (HCO3)	mg/L	95	8392410	69	8392410	67	8392410	140	0.50	8392410
Carbonate (CO3)	mg/L	<0.50	8392410	<0.50	8392410	<0.50	8392410	<0.50	0.50	8392410
Hydroxide (OH)	mg/L	<0.50	8392410	<0.50	8392410	<0.50	8392410	<0.50	0.50	8392410
Dissolved Sulphate (SO4)	mg/L	19	8393321	15	8393321	14	8393321	72	1.0	8393321
Dissolved Chloride (Cl)	mg/L	14	8393319	2.5	8393319	2.5	8393319	<1.0	1.0	8393319

Nutrients

Total Ammonia (N)	mg/L	0.038 (1)	8392820	0.022 (1)	8392820	0.020 (1)	8392820	0.021 (1)	0.0067	8392820
Orthophosphate (P)	mg/L	0.019	8393302	<0.0030	8393302	<0.0030	8393302	0.0060	0.0030	8393302
Dissolved Phosphorus (P)	mg/L	0.0070	8397019	<0.0030	8394774	<0.0030	8396043	0.0060	0.0030	8396043
Total Phosphorus (P)	mg/L	0.0080	8397024	0.0030	8394766	0.0030	8396091	0.043	0.0030	8396091
Dissolved Nitrite (N)	mg/L	<0.010	8392782	<0.010	8392782	<0.010	8392782	<0.010	0.010	8392782
Dissolved Nitrate (N)	mg/L	0.059	8392782	0.015	8392782	<0.010	8392782	<0.010	0.010	8392782

Physical Properties

Turbidity	NTU	0.37	8392568	0.68	8392568	0.44	8392568	0.71	0.10	8392568
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RDL = Reportable Detection Limit

N/A = Not Applicable

(1) Detection limit for ammonia calculated based on method detection limits (MDL) by client request.

Maxxam Job #: B677434
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		PL7162		PL7163		PL7164		
Sampling Date				2016/09/03 13:36		2016/09/04 19:30		
COC Number		504160-03-01		504160-03-01		504160-03-01		
	UNITS	TRIP BLANK	QC Batch	T9	QC Batch	T25	RDL	QC Batch
Calculated Parameters								
Filter and HNO3 Preservation	N/A		ONSITE		ONSITE	FIELD		ONSITE
Dissolved Nitrate (NO3)	mg/L	<0.044	8391932	<0.044	8391932	<0.044	0.044	8391932
Nitrate plus Nitrite (N)	mg/L	<0.020	8391933	<0.020	8391933	<0.020	0.020	8391933
Dissolved Nitrite (NO2)	mg/L	<0.033	8391932	<0.033	8391932	<0.033	0.033	8391932
Misc. Inorganics								
Conductivity	uS/cm	<1.0	8392411	210	8392411	170	1.0	8392826
Dissolved Organic Carbon (C)	mg/L	<0.50	8395749	15	8395749	10	0.50	8395749
pH	pH	4.66	8392407	7.94	8392407	7.68	N/A	8392821
Total Dissolved Solids	mg/L	<10	8392201	110	8392201	80	10	8392201
Total Suspended Solids	mg/L	<1.0	8392848	1.3	8392848	3.3	1.0	8392848
Anions								
Alkalinity (PP as CaCO3)	mg/L	<0.50	8392410	<0.50	8392410	<0.50	0.50	8392825
Alkalinity (Total as CaCO3)	mg/L	<0.50	8392410	61	8392410	69	0.50	8392825
Bicarbonate (HCO3)	mg/L	<0.50	8392410	74	8392410	84	0.50	8392825
Carbonate (CO3)	mg/L	<0.50	8392410	<0.50	8392410	<0.50	0.50	8392825
Hydroxide (OH)	mg/L	<0.50	8392410	<0.50	8392410	<0.50	0.50	8392825
Dissolved Sulphate (SO4)	mg/L	<1.0	8393321	18	8393301	15	1.0	8393384
Dissolved Chloride (Cl)	mg/L	<1.0	8393319	14	8393293	2.0	1.0	8393378
Nutrients								
Total Ammonia (N)	mg/L	0.021 (1)	8392820	0.019 (1)	8392820	0.023 (1)	0.0067	8392820
Orthophosphate (P)	mg/L	<0.0030	8393302	0.011	8393302	<0.0030	0.0030	8393302
Dissolved Phosphorus (P)	mg/L	<0.0030	8396043	0.0050	8396043	0.0060	0.0030	8396043
Total Phosphorus (P)	mg/L	<0.0030	8396091	0.0090	8396091	0.0080	0.0030	8396091
Dissolved Nitrite (N)	mg/L	<0.010	8392782	<0.010	8392782	<0.010	0.010	8393740
Dissolved Nitrate (N)	mg/L	<0.010	8392782	<0.010	8392782	<0.010	0.010	8393740
Physical Properties								
Turbidity	NTU	<0.10	8392568	0.68	8392568	2.0	0.10	8392568
RDL = Reportable Detection Limit								
N/A = Not Applicable								
(1) Detection limit for ammonia calculated based on method detection limits (MDL) by client request.								

Maxxam Job #: B677434
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

CSR/CCME DISS. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL7022	PL7024	PL7025		PL7026	PL7027		
Sampling Date		2016/09/02 18:33	2016/09/02 18:16	2016/09/02 18:00		2016/09/02 17:42	2016/09/02 17:42		
COC Number		504160-04-01	504160-04-01	504160-04-01		504160-04-01	504160-04-01		
	UNITS	T8B	T8C	T16-10M	QC Batch	T16-2M	DUP 7	RDL	QC Batch
Misc. Inorganics									
Dissolved Hardness (CaCO ₃)	mg/L	88.4	87.2	85.6	8390933	83.8	90.4	0.50	8390933
Elements									
Dissolved Mercury (Hg)	ug/L	<0.010	<0.010	<0.010	8396988	<0.010	<0.010	0.010	8399072
Dissolved Metals by ICPMS									
Dissolved Aluminum (Al)	ug/L	13.2	12.8	13.1	8396407	10.4	12.3	3.0	8396407
Dissolved Antimony (Sb)	ug/L	1.31	1.24	1.34	8396407	1.39	1.39	0.50	8396407
Dissolved Arsenic (As)	ug/L	70.9	76.3	70.5	8396407	70.0	70.7	0.10	8396407
Dissolved Barium (Ba)	ug/L	16.3	16.8	16.7	8396407	16.3	16.5	1.0	8396407
Dissolved Beryllium (Be)	ug/L	<0.10	<0.10	<0.10	8396407	<0.10	<0.10	0.10	8396407
Dissolved Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0	8396407	<1.0	<1.0	1.0	8396407
Dissolved Boron (B)	ug/L	<50	<50	<50	8396407	<50	<50	50	8396407
Dissolved Cadmium (Cd)	ug/L	0.010	<0.010	<0.010	8396407	<0.010	<0.010	0.010	8396407
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	8396407	<1.0	<1.0	1.0	8396407
Dissolved Cobalt (Co)	ug/L	<0.50	<0.50	<0.50	8396407	<0.50	<0.50	0.50	8396407
Dissolved Copper (Cu)	ug/L	7.74	7.27	7.49	8396407	7.27	7.67	0.20	8396407
Dissolved Iron (Fe)	ug/L	18.0	19.4	11.6	8396407	10.0	10.2	5.0	8396407
Dissolved Lead (Pb)	ug/L	<0.20	<0.20	<0.20	8396407	<0.20	<0.20	0.20	8396407
Dissolved Lithium (Li)	ug/L	9.4	9.1	9.7	8396407	9.1	9.5	5.0	8396407
Dissolved Manganese (Mn)	ug/L	1.9	2.5	<1.0	8396407	<1.0	<1.0	1.0	8396407
Dissolved Molybdenum (Mo)	ug/L	2.3	2.5	2.7	8396407	2.7	2.3	1.0	8396407
Dissolved Nickel (Ni)	ug/L	3.9	3.9	3.9	8396407	3.7	4.0	1.0	8396407
Dissolved Selenium (Se)	ug/L	<0.10	<0.10	<0.10	8396407	<0.10	<0.10	0.10	8396407
Dissolved Silicon (Si)	ug/L	1430	1600	872	8396407	880	979	100	8396407
Dissolved Silver (Ag)	ug/L	<0.020	<0.020	<0.020	8396407	<0.020	<0.020	0.020	8396407
Dissolved Strontium (Sr)	ug/L	80.9	84.3	83.7	8396407	81.8	83.5	1.0	8396407
Dissolved Thallium (Tl)	ug/L	<0.050	<0.050	<0.050	8396407	<0.050	<0.050	0.050	8396407
Dissolved Tin (Sn)	ug/L	<5.0	<5.0	<5.0	8396407	<5.0	<5.0	5.0	8396407
Dissolved Titanium (Ti)	ug/L	<5.0	<5.0	<5.0	8396407	<5.0	<5.0	5.0	8396407
Dissolved Uranium (U)	ug/L	2.47	2.56	2.78	8396407	2.54	2.27	0.10	8396407
Dissolved Vanadium (V)	ug/L	<5.0	<5.0	<5.0	8396407	<5.0	<5.0	5.0	8396407
Dissolved Zinc (Zn)	ug/L	6.6	5.6	<5.0	8396407	<5.0	<5.0	5.0	8396407
RDL = Reportable Detection Limit									

Maxxam Job #: B677434
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

CSR/CCME DISS. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL7022	PL7024	PL7025		PL7026	PL7027		
Sampling Date		2016/09/02 18:33	2016/09/02 18:16	2016/09/02 18:00		2016/09/02 17:42	2016/09/02 17:42		
COC Number		504160-04-01	504160-04-01	504160-04-01		504160-04-01	504160-04-01		
	UNITS	T8B	T8C	T16-10M	QC Batch	T16-2M	DUP 7	RDL	QC Batch
Dissolved Zirconium (Zr)	ug/L	<0.50	<0.50	<0.50	8396407	<0.50	<0.50	0.50	8396407
Dissolved Calcium (Ca)	mg/L	27.2	27.0	26.0	8390934	25.6	27.7	0.050	8390934
Dissolved Magnesium (Mg)	mg/L	4.99	4.79	4.99	8390934	4.82	5.16	0.050	8390934
Dissolved Potassium (K)	mg/L	2.39	2.35	2.32	8390934	2.26	2.52	0.050	8390934
Dissolved Sodium (Na)	mg/L	9.06	9.03	8.84	8390934	8.78	9.34	0.050	8390934
Dissolved Sulphur (S)	mg/L	7.0	5.3	6.9	8390934	6.4	7.2	3.0	8390934
RDL = Reportable Detection Limit									

Maxxam Job #: B677434
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

CSR/CCME DISS. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL7046	PL7160	PL7164		
Sampling Date		2016/09/02 18:48	2016/09/03 15:40	2016/09/04 19:30		
COC Number		504160-01-01	504160-03-01	504160-03-01		
	UNITS	T8A	T19B	T25	RDL	QC Batch
Misc. Inorganics						
Dissolved Hardness (CaCO ₃)	mg/L	85.1	72.5	76.9	0.50	8390933
Elements						
Dissolved Mercury (Hg)	ug/L	<0.010	<0.010	<0.010	0.010	8396988
Dissolved Metals by ICPMS						
Dissolved Aluminum (Al)	ug/L	10.3	4.9	5.3	3.0	8396407
Dissolved Antimony (Sb)	ug/L	1.41	<0.50	<0.50	0.50	8396407
Dissolved Arsenic (As)	ug/L	71.8	0.30	1.58	0.10	8396407
Dissolved Barium (Ba)	ug/L	16.9	11.9	11.0	1.0	8396407
Dissolved Beryllium (Be)	ug/L	<0.10	<0.10	<0.10	0.10	8396407
Dissolved Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0	1.0	8396407
Dissolved Boron (B)	ug/L	<50	<50	94	50	8396407
Dissolved Cadmium (Cd)	ug/L	<0.010	<0.010	<0.010	0.010	8396407
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	1.0	8396407
Dissolved Cobalt (Co)	ug/L	<0.50	<0.50	<0.50	0.50	8396407
Dissolved Copper (Cu)	ug/L	7.60	0.99	0.80	0.20	8396407
Dissolved Iron (Fe)	ug/L	9.9	<5.0	87.8	5.0	8396407
Dissolved Lead (Pb)	ug/L	<0.20	<0.20	<0.20	0.20	8396407
Dissolved Lithium (Li)	ug/L	10.2	<5.0	<5.0	5.0	8396407
Dissolved Manganese (Mn)	ug/L	<1.0	<1.0	5.0	1.0	8396407
Dissolved Molybdenum (Mo)	ug/L	2.6	<1.0	<1.0	1.0	8396407
Dissolved Nickel (Ni)	ug/L	4.1	<1.0	<1.0	1.0	8396407
Dissolved Selenium (Se)	ug/L	<0.10	<0.10	<0.10	0.10	8396407
Dissolved Silicon (Si)	ug/L	875	958	491	100	8396407
Dissolved Silver (Ag)	ug/L	<0.020	<0.020	<0.020	0.020	8396407
Dissolved Strontium (Sr)	ug/L	83.2	56.2	57.4	1.0	8396407
Dissolved Thallium (Tl)	ug/L	<0.050	<0.050	<0.050	0.050	8396407
Dissolved Tin (Sn)	ug/L	<5.0	<5.0	<5.0	5.0	8396407
Dissolved Titanium (Ti)	ug/L	<5.0	<5.0	<5.0	5.0	8396407
Dissolved Uranium (U)	ug/L	2.56	0.54	0.22	0.10	8396407
Dissolved Vanadium (V)	ug/L	<5.0	<5.0	<5.0	5.0	8396407
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	<5.0	5.0	8396407
RDL = Reportable Detection Limit						

Maxxam Job #: B677434
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

CSR/CCME DISS. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL7046	PL7160	PL7164		
Sampling Date		2016/09/02 18:48	2016/09/03 15:40	2016/09/04 19:30		
COC Number		504160-01-01	504160-03-01	504160-03-01		
	UNITS	T8A	T19B	T25	RDL	QC Batch
Dissolved Zirconium (Zr)	ug/L	<0.50	<0.50	<0.50	0.50	8396407
Dissolved Calcium (Ca)	mg/L	25.7	17.5	18.9	0.050	8390934
Dissolved Magnesium (Mg)	mg/L	5.10	6.99	7.23	0.050	8390934
Dissolved Potassium (K)	mg/L	2.48	1.16	1.43	0.050	8390934
Dissolved Sodium (Na)	mg/L	9.26	2.67	3.23	0.050	8390934
Dissolved Sulphur (S)	mg/L	6.4	6.6	5.6	3.0	8390934
RDL = Reportable Detection Limit						

Maxxam Job #: B677434
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL7018		PL7019	PL7020	PL7021		PL7023		
Sampling Date		2016/09/03 11:43		2016/09/03 11:05	2016/09/03 10:28	2016/09/03 10:28		2016/09/03 10:08		
COC Number		504160-04-01		504160-04-01	504160-04-01	504160-04-01		504160-04-01		
	UNITS	T5	QC Batch	T3	T1	DUP 6	QC Batch	T17	RDL	QC Batch
Calculated Parameters										
Total Hardness (CaCO3)	mg/L	91.4	8392038	82.7	69.2	73.7	8392038	115	0.50	8392038
Elements										
Total Mercury (Hg)	ug/L	<0.010	8396997	<0.010	<0.010	<0.010	8396997	<0.010	0.010	8396997
Total Metals by ICPMS										
Total Aluminum (Al)	ug/L	32.4	8396404	77.8	25.9	32.2	8396711	37.4	3.0	8396404
Total Antimony (Sb)	ug/L	1.24	8396404	1.39	<0.50	<0.50	8396711	<0.50	0.50	8396404
Total Arsenic (As)	ug/L	73.6	8396404	84.1	1.51	1.48	8396711	3.70	0.10	8396404
Total Barium (Ba)	ug/L	18.9	8396404	16.3	10.4	11.1	8396711	18.0	1.0	8396404
Total Beryllium (Be)	ug/L	<0.10	8396404	<0.10	<0.10	<0.10	8396711	<0.10	0.10	8396404
Total Bismuth (Bi)	ug/L	<1.0	8396404	<1.0	<1.0	<1.0	8396711	<1.0	1.0	8396404
Total Boron (B)	ug/L	<50	8396404	<50	<50	<50	8396711	<50	50	8396404
Total Cadmium (Cd)	ug/L	0.035	8396404	0.011	<0.010	<0.010	8396711	0.030	0.010	8396404
Total Chromium (Cr)	ug/L	<1.0	8396404	<1.0	<1.0	<1.0	8396711	<1.0	1.0	8396404
Total Cobalt (Co)	ug/L	0.63	8396404	3.45	<0.50	<0.50	8396711	2.16	0.50	8396404
Total Copper (Cu)	ug/L	8.87	8396404	9.43	1.60	1.61	8396711	9.02	0.50	8396404
Total Iron (Fe)	ug/L	68	8396404	166	126	143	8396711	290	10	8396404
Total Lead (Pb)	ug/L	1.16	8396404	3.57	<0.20	<0.20	8396711	0.22	0.20	8396404
Total Lithium (Li)	ug/L	9.3	8396404	8.8	<5.0	<5.0	8396711	<5.0	5.0	8396404
Total Manganese (Mn)	ug/L	17.3	8396404	15.8	15.6	18.1	8396711	102	1.0	8396404
Total Molybdenum (Mo)	ug/L	2.6	8396404	2.9	<1.0	<1.0	8396711	<1.0	1.0	8396404
Total Nickel (Ni)	ug/L	4.1	8396404	5.2	<1.0	<1.0	8396711	1.3	1.0	8396404
Total Selenium (Se)	ug/L	<0.10	8396404	<0.10	<0.10	<0.10	8396711	<0.10	0.10	8396404
Total Silicon (Si)	ug/L	965	8396404	901	763	811	8396711	4010	100	8396404
Total Silver (Ag)	ug/L	<0.020	8396404	0.157	<0.020	<0.020	8396711	<0.020	0.020	8396404
Total Strontium (Sr)	ug/L	85.2	8396404	80.4	51.2	51.8	8396711	48.0	1.0	8396404
Total Thallium (Tl)	ug/L	<0.050	8396404	<0.050	<0.050	<0.050	8396711	<0.050	0.050	8396404
Total Tin (Sn)	ug/L	<5.0	8396404	<5.0	<5.0	<5.0	8396711	<5.0	5.0	8396404
Total Titanium (Ti)	ug/L	<5.0	8396404	<5.0	<5.0	<5.0	8396711	<5.0	5.0	8396404
Total Uranium (U)	ug/L	2.82	8396404	2.83	0.43	0.44	8396711	0.31	0.10	8396404
Total Vanadium (V)	ug/L	<5.0	8396404	<5.0	<5.0	<5.0	8396711	<5.0	5.0	8396404
Total Zinc (Zn)	ug/L	10.0	8396404	7.4	<5.0	<5.0	8396711	16.2	5.0	8396404
RDL = Reportable Detection Limit										

Maxxam Job #: B677434
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL7018		PL7019	PL7020	PL7021		PL7023		
Sampling Date		2016/09/03 11:43		2016/09/03 11:05	2016/09/03 10:28	2016/09/03 10:28		2016/09/03 10:08		
COC Number		504160-04-01		504160-04-01	504160-04-01	504160-04-01		504160-04-01		
	UNITS	T5	QC Batch	T3	T1	DUP 6	QC Batch	T17	RDL	QC Batch
Total Zirconium (Zr)	ug/L	<0.50	8396404	<0.50	<0.50	<0.50	8396711	<0.50	0.50	8396404
Total Calcium (Ca)	mg/L	28.0	8390935	24.5	16.1	17.4	8390935	32.1	0.050	8390935
Total Magnesium (Mg)	mg/L	5.24	8390935	5.23	7.02	7.32	8390935	8.41	0.050	8390935
Total Potassium (K)	mg/L	2.32	8390935	2.32	0.930	1.04	8390935	0.730	0.050	8390935
Total Sodium (Na)	mg/L	9.30	8390935	9.32	2.67	2.84	8390935	2.83	0.050	8390935
Total Sulphur (S)	mg/L	5.1	8390935	4.2	4.0	4.1	8390935	9.2	3.0	8390935
Total Sulphur (S)	ug/L	5120	8396404	4160	4000	4070	8396711	9220	3000	8396404
RDL = Reportable Detection Limit										

Maxxam Job #: B677434
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL7022	PL7024	PL7025	PL7026	PL7027		
Sampling Date		2016/09/02 18:33	2016/09/02 18:16	2016/09/02 18:00	2016/09/02 17:42	2016/09/02 17:42		
COC Number		504160-04-01	504160-04-01	504160-04-01	504160-04-01	504160-04-01		
	UNITS	T8B	T8C	T16-10M	T16-2M	DUP 7	RDL	QC Batch
Calculated Parameters								
Total Hardness (CaCO ₃)	mg/L	85.1	90.9	88.6	88.8	90.9	0.50	8392038
Elements								
Total Mercury (Hg)	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	8396997
Total Metals by ICPMS								
Total Aluminum (Al)	ug/L	20.8	27.8	29.7	20.3	51.6	3.0	8396404
Total Antimony (Sb)	ug/L	1.24	1.22	1.35	1.28	1.36	0.50	8396404
Total Arsenic (As)	ug/L	71.7	80.1	72.1	68.5	70.9	0.10	8396404
Total Barium (Ba)	ug/L	16.3	17.8	17.2	16.8	17.2	1.0	8396404
Total Beryllium (Be)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	8396404
Total Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	8396404
Total Boron (B)	ug/L	<50	<50	<50	<50	<50	50	8396404
Total Cadmium (Cd)	ug/L	<0.010	0.015	<0.010	<0.010	<0.010	0.010	8396404
Total Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	8396404
Total Cobalt (Co)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8396404
Total Copper (Cu)	ug/L	7.72	7.75	7.67	7.30	7.75	0.50	8396404
Total Iron (Fe)	ug/L	33	58	30	30	27	10	8396404
Total Lead (Pb)	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	8396404
Total Lithium (Li)	ug/L	8.4	10.3	9.6	9.4	9.7	5.0	8396404
Total Manganese (Mn)	ug/L	5.4	18.8	5.5	4.8	5.0	1.0	8396404
Total Molybdenum (Mo)	ug/L	2.5	2.5	2.6	2.5	2.5	1.0	8396404
Total Nickel (Ni)	ug/L	4.1	4.2	3.9	4.2	4.1	1.0	8396404
Total Selenium (Se)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	8396404
Total Silicon (Si)	ug/L	1390	1690	946	924	952	100	8396404
Total Silver (Ag)	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	8396404
Total Strontium (Sr)	ug/L	80.0	85.1	84.0	83.4	85.2	1.0	8396404
Total Thallium (Tl)	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	8396404
Total Tin (Sn)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8396404
Total Titanium (Ti)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8396404
Total Uranium (U)	ug/L	2.45	2.46	2.54	2.57	2.63	0.10	8396404
Total Vanadium (V)	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	8396404
Total Zinc (Zn)	ug/L	6.4	5.4	<5.0	<5.0	<5.0	5.0	8396404
RDL = Reportable Detection Limit								

Maxxam Job #: B677434
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL7022	PL7024	PL7025	PL7026	PL7027		
Sampling Date		2016/09/02 18:33	2016/09/02 18:16	2016/09/02 18:00	2016/09/02 17:42	2016/09/02 17:42		
COC Number		504160-04-01	504160-04-01	504160-04-01	504160-04-01	504160-04-01		
	UNITS	T8B	T8C	T16-10M	T16-2M	DUP 7	RDL	QC Batch
Total Zirconium (Zr)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	8396404
Total Calcium (Ca)	mg/L	26.4	28.2	27.2	27.4	28.2	0.050	8390935
Total Magnesium (Mg)	mg/L	4.68	4.97	4.98	4.94	4.99	0.050	8390935
Total Potassium (K)	mg/L	2.29	2.43	2.28	2.28	2.39	0.050	8390935
Total Sodium (Na)	mg/L	8.87	8.91	8.82	8.63	8.92	0.050	8390935
Total Sulphur (S)	mg/L	6.2	5.2	6.7	6.5	8.8	3.0	8390935
Total Sulphur (S)	ug/L	6220	5180	6700	6480	8770	3000	8396404
RDL = Reportable Detection Limit								

Maxxam Job #: B677434
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL7040		PL7041		PL7042	PL7043		
Sampling Date		2016/09/02 17:07		2016/09/03 16:30		2016/09/03 09:37	2016/09/03 08:53		
COC Number		504160-01-01		504160-01-01		504160-01-01	504160-01-01		
	UNITS	T7	QC Batch	DUP D	QC Batch	T18	T2	RDL	QC Batch
Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L	88.7	8392038	<0.50	8392038	204	47.2	0.50	8392038
Elements									
Total Mercury (Hg)	ug/L	<0.010	8396997	<0.010	8397013	<0.010	<0.010	0.010	8397013
Total Metals by ICPMS									
Total Aluminum (Al)	ug/L	20.0	8397573	<3.0	8396404	13.1	46.4	3.0	8396377
Total Antimony (Sb)	ug/L	1.33	8397573	<0.50	8396404	<0.50	<0.50	0.50	8396377
Total Arsenic (As)	ug/L	69.3	8397573	<0.10	8396404	31.1	6.19	0.10	8396377
Total Barium (Ba)	ug/L	17.1	8397573	<1.0	8396404	21.7	7.1	1.0	8396377
Total Beryllium (Be)	ug/L	<0.10	8397573	<0.10	8396404	<0.10	<0.10	0.10	8396377
Total Bismuth (Bi)	ug/L	<1.0	8397573	<1.0	8396404	<1.0	<1.0	1.0	8396377
Total Boron (B)	ug/L	<50	8397573	<50	8396404	973	<50	50	8396377
Total Cadmium (Cd)	ug/L	<0.010	8397573	<0.010	8396404	0.034	<0.010	0.010	8396377
Total Chromium (Cr)	ug/L	<1.0	8397573	<1.0	8396404	<1.0	<1.0	1.0	8396377
Total Cobalt (Co)	ug/L	<0.50	8397573	<0.50	8396404	6.51	<0.50	0.50	8396377
Total Copper (Cu)	ug/L	7.73	8397573	<0.50	8396404	3.19	6.48	0.50	8396377
Total Iron (Fe)	ug/L	31	8397573	<10	8396404	3630	214	10	8396377
Total Lead (Pb)	ug/L	<0.20	8397573	<0.20	8396404	1.12	<0.20	0.20	8396377
Total Lithium (Li)	ug/L	9.0	8397573	<5.0	8396404	13.2	<5.0	5.0	8396377
Total Manganese (Mn)	ug/L	5.5	8397573	<1.0	8396404	570	22.5	1.0	8396377
Total Molybdenum (Mo)	ug/L	2.9	8397573	<1.0	8396404	3.3	<1.0	1.0	8396377
Total Nickel (Ni)	ug/L	3.9	8397573	<1.0	8396404	5.7	1.2	1.0	8396377
Total Selenium (Se)	ug/L	<0.10	8397573	<0.10	8396404	<0.10	<0.10	0.10	8396377
Total Silicon (Si)	ug/L	929	8397573	<100	8396404	4520	1280	100	8396377
Total Silver (Ag)	ug/L	<0.020	8397573	<0.020	8396404	0.118	<0.020	0.020	8396377
Total Strontium (Sr)	ug/L	81.3	8397573	<1.0	8396404	127	17.9	1.0	8396377
Total Thallium (Tl)	ug/L	<0.050	8397573	<0.050	8396404	<0.050	<0.050	0.050	8396377
Total Tin (Sn)	ug/L	<5.0	8397573	<5.0	8396404	<5.0	<5.0	5.0	8396377
Total Titanium (Ti)	ug/L	<5.0	8397573	<5.0	8396404	<5.0	<5.0	5.0	8396377
Total Uranium (U)	ug/L	2.70	8397573	<0.10	8396404	1.23	0.17	0.10	8396377
Total Vanadium (V)	ug/L	<5.0	8397573	<5.0	8396404	<5.0	<5.0	5.0	8396377
Total Zinc (Zn)	ug/L	<5.0	8397573	<5.0	8396404	165	8.9	5.0	8396377
RDL = Reportable Detection Limit									

Maxxam Job #: B677434
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL7040		PL7041		PL7042	PL7043		
Sampling Date		2016/09/02 17:07		2016/09/03 16:30		2016/09/03 09:37	2016/09/03 08:53		
COC Number		504160-01-01		504160-01-01		504160-01-01	504160-01-01		
	UNITS	T7	QC Batch	DUP D	QC Batch	T18	T2	RDL	QC Batch
Total Zirconium (Zr)	ug/L	<0.50	8397573	<0.50	8396404	<0.50	<0.50	0.50	8396377
Total Calcium (Ca)	mg/L	27.5	8390935	0.098	8390935	55.4	12.2	0.050	8390935
Total Magnesium (Mg)	mg/L	4.85	8390935	<0.050	8390935	15.9	4.09	0.050	8390935
Total Potassium (K)	mg/L	2.43	8390935	<0.050	8390935	8.69	1.30	0.050	8390935
Total Sodium (Na)	mg/L	8.40	8390935	<0.050	8390935	14.8	1.23	0.050	8390935
Total Sulphur (S)	mg/L	6.9	8390935	<3.0	8390935	<3.0	<3.0	3.0	8390935
Total Sulphur (S)	ug/L	6870	8397573	<3000	8396404	<3000	<3000	3000	8396377
RDL = Reportable Detection Limit									

Maxxam Job #: B677434
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL7044	PL7045		PL7046		PL7047	PL7048		
Sampling Date		2016/09/02 15:26	2016/09/05 16:46		2016/09/02 18:48		2016/09/03 14:12	2016/09/03 14:51		
COC Number		504160-01-01	504160-01-01		504160-01-01		504160-01-01	504160-01-01		
	UNITS	R3	R4	QC Batch	T8A	QC Batch	T10	T19	RDL	QC Batch
Calculated Parameters										
Total Hardness (CaCO ₃)	mg/L	37.3	75.2	8392038	83.4	8392038	83.2	72.0	0.50	8392038
Elements										
Total Mercury (Hg)	ug/L	<0.010	<0.010	8397013	<0.010	8397013	<0.010	<0.010	0.010	8397013
Total Metals by ICPMS										
Total Aluminum (Al)	ug/L	11.7	15.5	8396404	18.2	8397573	55.2	139	3.0	8396377
Total Antimony (Sb)	ug/L	<0.50	<0.50	8396404	1.33	8397573	<0.50	2.82	0.50	8396377
Total Arsenic (As)	ug/L	0.71	0.67	8396404	66.8	8397573	8.98	145	0.10	8396377
Total Barium (Ba)	ug/L	5.5	11.4	8396404	16.5	8397573	11.1	6.8	1.0	8396377
Total Beryllium (Be)	ug/L	<0.10	<0.10	8396404	<0.10	8397573	<0.10	<0.10	0.10	8396377
Total Bismuth (Bi)	ug/L	<1.0	<1.0	8396404	<1.0	8397573	<1.0	<1.0	1.0	8396377
Total Boron (B)	ug/L	<50	<50	8396404	<50	8397573	<50	<50	50	8396377
Total Cadmium (Cd)	ug/L	<0.010	0.013	8396404	<0.010	8397573	<0.010	0.047	0.010	8396377
Total Chromium (Cr)	ug/L	<1.0	<1.0	8396404	<1.0	8397573	<1.0	<1.0	1.0	8396377
Total Cobalt (Co)	ug/L	<0.50	<0.50	8396404	<0.50	8397573	1.00	9.98	0.50	8396377
Total Copper (Cu)	ug/L	0.93	<0.50	8396404	7.78	8397573	1.87	20.7	0.50	8396377
Total Iron (Fe)	ug/L	24	13	8396404	29	8397573	187	189	10	8396377
Total Lead (Pb)	ug/L	<0.20	<0.20	8396404	<0.20	8397573	0.33	0.39	0.20	8396377
Total Lithium (Li)	ug/L	<5.0	<5.0	8396404	9.2	8397573	<5.0	<5.0	5.0	8396377
Total Manganese (Mn)	ug/L	2.0	<1.0	8396404	5.1	8397573	57.9	29.9	1.0	8396377
Total Molybdenum (Mo)	ug/L	<1.0	<1.0	8396404	2.8	8397573	<1.0	8.4	1.0	8396377
Total Nickel (Ni)	ug/L	<1.0	<1.0	8396404	3.9	8397573	<1.0	18.2	1.0	8396377
Total Selenium (Se)	ug/L	<0.10	<0.10	8396404	<0.10	8397573	<0.10	<0.10	0.10	8396377
Total Silicon (Si)	ug/L	1100	986	8396404	838	8397573	1220	2870	100	8396377
Total Silver (Ag)	ug/L	<0.020	<0.020	8396404	<0.020	8397573	<0.020	0.072	0.020	8396377
Total Strontium (Sr)	ug/L	21.0	58.2	8396404	83.4	8397573	54.7	25.2	1.0	8396377
Total Thallium (Tl)	ug/L	<0.050	<0.050	8396404	<0.050	8397573	<0.050	<0.050	0.050	8396377
Total Tin (Sn)	ug/L	<5.0	<5.0	8396404	<5.0	8397573	<5.0	<5.0	5.0	8396377
Total Titanium (Ti)	ug/L	<5.0	<5.0	8396404	<5.0	8397573	<5.0	<5.0	5.0	8396377
Total Uranium (U)	ug/L	0.19	0.53	8396404	2.62	8397573	0.60	1.71	0.10	8396377
Total Vanadium (V)	ug/L	<5.0	<5.0	8396404	<5.0	8397573	<5.0	<5.0	5.0	8396377
Total Zinc (Zn)	ug/L	<5.0	<5.0	8396404	<5.0	8397573	<5.0	20.0	5.0	8396377
RDL = Reportable Detection Limit										

Maxxam Job #: B677434
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL7044	PL7045		PL7046		PL7047	PL7048		
Sampling Date		2016/09/02 15:26	2016/09/05 16:46		2016/09/02 18:48		2016/09/03 14:12	2016/09/03 14:51		
COC Number		504160-01-01	504160-01-01		504160-01-01		504160-01-01	504160-01-01		
	UNITS	R3	R4	QC Batch	T8A	QC Batch	T10	T19	RDL	QC Batch
Total Zirconium (Zr)	ug/L	<0.50	<0.50	8396404	<0.50	8397573	<0.50	0.88	0.50	8396377
Total Calcium (Ca)	mg/L	10.2	18.0	8390935	25.5	8390935	20.8	20.8	0.050	8390935
Total Magnesium (Mg)	mg/L	2.87	7.35	8390935	4.79	8390935	7.61	4.87	0.050	8390935
Total Potassium (K)	mg/L	0.875	1.13	8390935	2.31	8390935	1.20	1.13	0.050	8390935
Total Sodium (Na)	mg/L	1.83	2.77	8390935	8.57	8390935	2.78	1.13	0.050	8390935
Total Sulphur (S)	mg/L	<3.0	6.0	8390935	6.8	8390935	6.6	4.9	3.0	8390935
Total Sulphur (S)	ug/L	<3000	6040	8396404	6790	8397573	6560	4900	3000	8396377
RDL = Reportable Detection Limit										

Maxxam Job #: B677434
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL7049		PL7159		PL7160		PL7161		
Sampling Date		2016/09/03 13:42		2016/09/03 15:30		2016/09/03 15:40		2016/09/03 16:08		
COC Number		504160-01-01		504160-03-01		504160-03-01		504160-03-01		
	UNITS	T6	QC Batch	T4	QC Batch	T19B	QC Batch	T20	RDL	QC Batch

Calculated Parameters										
Total Hardness (CaCO ₃)	mg/L	98.3	8392038	72.4	8392038	72.2	8392038	182	0.50	8392038
Elements										
Total Mercury (Hg)	ug/L	<0.010	8397013	<0.010	8397013	<0.010	8397013	<0.010	0.010	8397013
Total Metals by ICPMS										
Total Aluminum (Al)	ug/L	297	8396711	23.4	8396404	19.2	8397573	16.4	3.0	8396711
Total Antimony (Sb)	ug/L	1.18	8396711	<0.50	8396404	<0.50	8397573	0.63	0.50	8396711
Total Arsenic (As)	ug/L	116	8396711	0.87	8396404	0.28	8397573	31.2	0.10	8396711
Total Barium (Ba)	ug/L	30.3	8396711	11.7	8396404	11.1	8397573	13.9	1.0	8396711
Total Beryllium (Be)	ug/L	0.17	8396711	<0.10	8396404	<0.10	8397573	<0.10	0.10	8396711
Total Bismuth (Bi)	ug/L	5.5	8396711	<1.0	8396404	<1.0	8397573	<1.0	1.0	8396711
Total Boron (B)	ug/L	<50	8396711	<50	8396404	<50	8397573	<50	50	8396711
Total Cadmium (Cd)	ug/L	0.359	8396711	<0.010	8396404	<0.010	8397573	<0.010	0.010	8396711
Total Chromium (Cr)	ug/L	<1.0	8396711	<1.0	8396404	<1.0	8397573	<1.0	1.0	8396711
Total Cobalt (Co)	ug/L	20.1	8396711	<0.50	8396404	<0.50	8397573	0.86	0.50	8396711
Total Copper (Cu)	ug/L	124	8396711	1.04	8396404	0.82	8397573	3.27	0.50	8396711
Total Iron (Fe)	ug/L	1280	8396711	26	8396404	20	8397573	38	10	8396711
Total Lead (Pb)	ug/L	6.96	8396711	0.35	8396404	<0.20	8397573	<0.20	0.20	8396711
Total Lithium (Li)	ug/L	9.8	8396711	<5.0	8396404	<5.0	8397573	<5.0	5.0	8396711
Total Manganese (Mn)	ug/L	505	8396711	1.9	8396404	1.6	8397573	46.1	1.0	8396711
Total Molybdenum (Mo)	ug/L	3.0	8396711	<1.0	8396404	<1.0	8397573	1.9	1.0	8396711
Total Nickel (Ni)	ug/L	16.7	8396711	<1.0	8396404	<1.0	8397573	1.3	1.0	8396711
Total Selenium (Se)	ug/L	<0.10	8396711	<0.10	8396404	<0.10	8397573	<0.10	0.10	8396711
Total Silicon (Si)	ug/L	1640	8396711	938	8396404	902	8397573	2450	100	8396711
Total Silver (Ag)	ug/L	0.430	8396711	<0.020	8396404	<0.020	8397573	<0.020	0.020	8396711
Total Strontium (Sr)	ug/L	92.0	8396711	55.5	8396404	57.9	8397573	86.6	1.0	8396711
Total Thallium (Tl)	ug/L	0.067	8396711	<0.050	8396404	<0.050	8397573	<0.050	0.050	8396711
Total Tin (Sn)	ug/L	<5.0	8396711	<5.0	8396404	<5.0	8397573	<5.0	5.0	8396711
Total Titanium (Ti)	ug/L	<5.0	8396711	<5.0	8396404	<5.0	8397573	<5.0	5.0	8396711
Total Uranium (U)	ug/L	1.64	8396711	0.51	8396404	0.57	8397573	2.64	0.10	8396711
Total Vanadium (V)	ug/L	<5.0	8396711	<5.0	8396404	<5.0	8397573	<5.0	5.0	8396711
Total Zinc (Zn)	ug/L	97.7	8396711	<5.0	8396404	<5.0	8397573	<5.0	5.0	8396711
RDL = Reportable Detection Limit										

Maxxam Job #: B677434
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL7049		PL7159		PL7160		PL7161		
Sampling Date		2016/09/03 13:42		2016/09/03 15:30		2016/09/03 15:40		2016/09/03 16:08		
COC Number		504160-01-01		504160-03-01		504160-03-01		504160-03-01		
	UNITS	T6	QC Batch	T4	QC Batch	T19B	QC Batch	T20	RDL	QC Batch
Total Zirconium (Zr)	ug/L	<0.50	8396711	<0.50	8396404	<0.50	8397573	<0.50	0.50	8396711
Total Calcium (Ca)	mg/L	29.5	8390935	17.5	8390935	17.6	8390935	49.3	0.050	8390935
Total Magnesium (Mg)	mg/L	5.99	8390935	6.97	8390935	6.85	8390935	14.2	0.050	8390935
Total Potassium (K)	mg/L	2.36	8390935	1.14	8390935	1.11	8390935	4.64	0.050	8390935
Total Sodium (Na)	mg/L	9.54	8390935	2.69	8390935	2.56	8390935	5.10	0.050	8390935
Total Sulphur (S)	mg/L	5.5	8390935	5.0	8390935	5.1	8390935	22.0	3.0	8390935
Total Sulphur (S)	ug/L	5480	8396711	4960	8396404	5140	8397573	22000	3000	8396711
RDL = Reportable Detection Limit										

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SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL7162	PL7163		PL7164		
Sampling Date			2016/09/03 13:36		2016/09/04 19:30		
COC Number		504160-03-01	504160-03-01		504160-03-01		
	UNITS	TRIP BLANK	T9	QC Batch	T25	RDL	QC Batch
Calculated Parameters							
Total Hardness (CaCO ₃)	mg/L	<0.50	83.9	8392038	82.7	0.50	8392038
Elements							
Total Mercury (Hg)	ug/L	<0.010	<0.010	8397013	<0.010	0.010	8397013
Total Metals by ICPMS							
Total Aluminum (Al)	ug/L	<3.0	21.7	8397573	84.4	3.0	8396711
Total Antimony (Sb)	ug/L	<0.50	1.28	8397573	<0.50	0.50	8396711
Total Arsenic (As)	ug/L	<0.10	41.7	8397573	2.17	0.10	8396711
Total Barium (Ba)	ug/L	<1.0	10.3	8397573	11.5	1.0	8396711
Total Beryllium (Be)	ug/L	<0.10	<0.10	8397573	<0.10	0.10	8396711
Total Bismuth (Bi)	ug/L	<1.0	<1.0	8397573	<1.0	1.0	8396711
Total Boron (B)	ug/L	<50	<50	8397573	97	50	8396711
Total Cadmium (Cd)	ug/L	<0.010	<0.010	8397573	<0.010	0.010	8396711
Total Chromium (Cr)	ug/L	<1.0	<1.0	8397573	<1.0	1.0	8396711
Total Cobalt (Co)	ug/L	<0.50	<0.50	8397573	<0.50	0.50	8396711
Total Copper (Cu)	ug/L	<0.50	4.04	8397573	0.91	0.50	8396711
Total Iron (Fe)	ug/L	<10	71	8397573	601	10	8396711
Total Lead (Pb)	ug/L	<0.20	<0.20	8397573	<0.20	0.20	8396711
Total Lithium (Li)	ug/L	<5.0	9.3	8397573	<5.0	5.0	8396711
Total Manganese (Mn)	ug/L	<1.0	5.6	8397573	18.1	1.0	8396711
Total Molybdenum (Mo)	ug/L	<1.0	2.7	8397573	<1.0	1.0	8396711
Total Nickel (Ni)	ug/L	<1.0	3.7	8397573	<1.0	1.0	8396711
Total Selenium (Se)	ug/L	<0.10	<0.10	8397573	<0.10	0.10	8396711
Total Silicon (Si)	ug/L	<100	147	8397573	596	100	8396711
Total Silver (Ag)	ug/L	<0.020	<0.020	8397573	<0.020	0.020	8396711
Total Strontium (Sr)	ug/L	<1.0	85.6	8397573	57.4	1.0	8396711
Total Thallium (Tl)	ug/L	<0.050	<0.050	8397573	<0.050	0.050	8396711
Total Tin (Sn)	ug/L	<5.0	<5.0	8397573	<5.0	5.0	8396711
Total Titanium (Ti)	ug/L	<5.0	<5.0	8397573	<5.0	5.0	8396711
Total Uranium (U)	ug/L	<0.10	2.30	8397573	0.21	0.10	8396711
Total Vanadium (V)	ug/L	<5.0	<5.0	8397573	<5.0	5.0	8396711
Total Zinc (Zn)	ug/L	<5.0	<5.0	8397573	<5.0	5.0	8396711
RDL = Reportable Detection Limit							

Maxxam Job #: B677434
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SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL7162	PL7163		PL7164		
Sampling Date			2016/09/03 13:36		2016/09/04 19:30		
COC Number		504160-03-01	504160-03-01		504160-03-01		
	UNITS	TRIP BLANK	T9	QC Batch	T25	RDL	QC Batch
Total Zirconium (Zr)	ug/L	<0.50	<0.50	8397573	<0.50	0.50	8396711
Total Calcium (Ca)	mg/L	<0.050	25.3	8390935	20.7	0.050	8390935
Total Magnesium (Mg)	mg/L	<0.050	5.06	8390935	7.51	0.050	8390935
Total Potassium (K)	mg/L	<0.050	2.29	8390935	1.44	0.050	8390935
Total Sodium (Na)	mg/L	<0.050	9.16	8390935	3.44	0.050	8390935
Total Sulphur (S)	mg/L	<3.0	5.4	8390935	4.1	3.0	8390935
Total Sulphur (S)	ug/L	<3000	5420	8397573	4130	3000	8396711
RDL = Reportable Detection Limit							

Maxxam Job #: B677434
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

GENERAL COMMENTS

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

Package 1	7.0°C
Package 2	3.7°C
Package 3	2.7°C
Package 4	6.0°C
Package 5	4.7°C
Package 6	6.0°C
Package 7	3.3°C
Package 8	3.3°C
Package 9	4.0°C
Package 10	5.3°C
Package 11	5.7°C
Package 12	5.0°C

Report revised to include updated detection limits for Ammonia, per client request 2017/04/10

Sample PL7018 [T5] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL7019 [T3] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL7020 [T1] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL7021 [DUP 6] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL7022 [T8B] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL7023 [T17] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL7024 [T8C] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL7025 [T16-10M] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL7026 [T16-2M] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified

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hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL7027 [DUP 7] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL7040 [T7] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL7041 [DUP D] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL7042 [T18] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL7043 [T2] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL7044 [R3] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL7045 [R4] : Sample was analyzed past method specified hold time for Nitrogen Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised.

Sample PL7046 [T8A] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL7047 [T10] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL7048 [T19] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL7049 [T6] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL7159 [T4] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL7160 [T19B] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL7161 [T20] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Maxxam Job #: B677434
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SLR CONSULTING (CANADA) LTD
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Site Location: TERRA
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Sample PL7163 [T9] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL7164 [T25] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Results relate only to the items tested.

Maxxam Job #: B677434
Report Date: 2017/04/10

QUALITY ASSURANCE REPORT

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8393923	O-TERPHENYL (sur.)	2016/09/11	96	60 - 130	103	60 - 130	95	%				
8394426	1,4-Difluorobenzene (sur.)	2016/09/12	93	70 - 130	94	70 - 130	96	%				
8394426	4-Bromofluorobenzene (sur.)	2016/09/12	101	70 - 130	100	70 - 130	100	%				
8394426	D4-1,2-Dichloroethane (sur.)	2016/09/12	115	70 - 130	114	70 - 130	111	%				
8394492	1,4-Difluorobenzene (sur.)	2016/09/13	97	70 - 130	95	70 - 130	100	%				
8394492	4-Bromofluorobenzene (sur.)	2016/09/13	101	70 - 130	103	70 - 130	101	%				
8394492	D4-1,2-Dichloroethane (sur.)	2016/09/13	111	70 - 130	111	70 - 130	105	%				
8392201	Total Dissolved Solids	2016/09/09	102	80 - 120	100	80 - 120	<10	mg/L	1.8	20		
8392401	pH	2016/09/09			100	97 - 103			0	N/A		
8392404	Alkalinity (PP as CaCO ₃)	2016/09/09					<0.50	mg/L	NC	20		
8392404	Alkalinity (Total as CaCO ₃)	2016/09/09			98	80 - 120	<0.50	mg/L	1.1	20		
8392404	Bicarbonate (HCO ₃)	2016/09/09					<0.50	mg/L	1.1	20		
8392404	Carbonate (CO ₃)	2016/09/09					<0.50	mg/L	NC	20		
8392404	Hydroxide (OH)	2016/09/09					<0.50	mg/L	NC	20		
8392405	Conductivity	2016/09/09			100	90 - 110	<1.0	uS/cm	0	10		
8392407	pH	2016/09/09			100	97 - 103			0.45	N/A		
8392410	Alkalinity (PP as CaCO ₃)	2016/09/09					<0.50	mg/L	NC	20		
8392410	Alkalinity (Total as CaCO ₃)	2016/09/09			100	80 - 120	<0.50	mg/L	9.8	20		
8392410	Bicarbonate (HCO ₃)	2016/09/09					<0.50	mg/L	9.8	20		
8392410	Carbonate (CO ₃)	2016/09/09					<0.50	mg/L	NC	20		
8392410	Hydroxide (OH)	2016/09/09					<0.50	mg/L	NC	20		
8392411	Conductivity	2016/09/09			102	90 - 110	<1.0	uS/cm	NC	10		
8392528	Total Suspended Solids	2016/09/13	95	80 - 120	96	80 - 120	<1.0	mg/L	NC	20		
8392556	Total Dissolved Solids	2016/09/13	103	80 - 120	103	80 - 120	<10	mg/L	14	20		
8392563	Turbidity	2016/09/09			100	80 - 120	<0.10	NTU	0	20		
8392568	Turbidity	2016/09/09			100	80 - 120	<0.10	NTU	0.91	20		
8392724	Dissolved Nitrate (N)	2016/09/09	103	80 - 120	100	80 - 120	<0.010	mg/L	NC	20		
8392724	Dissolved Nitrite (N)	2016/09/09	102	80 - 120	99	80 - 120	<0.010	mg/L	NC	20		
8392782	Dissolved Nitrate (N)	2016/09/09	102	80 - 120	101	80 - 120	<0.010	mg/L	1.0	20		
8392782	Dissolved Nitrite (N)	2016/09/09	101	80 - 120	100	80 - 120	<0.010	mg/L	NC	20		
8392812	Total Ammonia (N)	2016/09/09	95	80 - 120	100	80 - 120	<0.050	mg/L	NC	20		

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QUALITY ASSURANCE REPORT(CONT'D)

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8392820	Total Ammonia (N)	2016/09/09	110	80 - 120	100	80 - 120	<0.050	mg/L	2.2	20		
8392821	pH	2016/09/09			100	97 - 103			0.79	N/A		
8392825	Alkalinity (PP as CaCO ₃)	2016/09/09					<0.50	mg/L	NC	20		
8392825	Alkalinity (Total as CaCO ₃)	2016/09/09			100	80 - 120	<0.50	mg/L	0.27	20		
8392825	Bicarbonate (HCO ₃)	2016/09/09					<0.50	mg/L	0.27	20		
8392825	Carbonate (CO ₃)	2016/09/09					<0.50	mg/L	NC	20		
8392825	Hydroxide (OH)	2016/09/09					<0.50	mg/L	NC	20		
8392826	Conductivity	2016/09/09			100	90 - 110	<1.0	uS/cm	1.1	10		
8392848	Total Suspended Solids	2016/09/09	95	80 - 120	89	80 - 120	<1.0	mg/L	12	20		
8393293	Dissolved Chloride (Cl)	2016/09/09	NC	80 - 120	101	80 - 120	<1.0	mg/L	0.21	20		
8393295	Orthophosphate (P)	2016/09/09	106	80 - 120	105	80 - 120	<0.0030	mg/L	5.1	20		
8393301	Dissolved Sulphate (SO ₄)	2016/09/09	NC	80 - 120	105	80 - 120	<1.0	mg/L	0.59	20		
8393302	Orthophosphate (P)	2016/09/09	102	80 - 120	105	80 - 120	<0.0030	mg/L	NC	20		
8393319	Dissolved Chloride (Cl)	2016/09/09	104	80 - 120	101	80 - 120	<1.0	mg/L	1.5	20		
8393321	Dissolved Sulphate (SO ₄)	2016/09/09	NC	80 - 120	103	80 - 120	<1.0	mg/L	1.2	20		
8393378	Dissolved Chloride (Cl)	2016/09/10	104	80 - 120	103	80 - 120	<1.0	mg/L	NC	20		
8393384	Dissolved Sulphate (SO ₄)	2016/09/10	NC	80 - 120	104	80 - 120	<1.0	mg/L	0.18	20		
8393740	Dissolved Nitrate (N)	2016/09/10	104	80 - 120	101	80 - 120	<0.010	mg/L	NC	20		
8393740	Dissolved Nitrite (N)	2016/09/10	101	80 - 120	98	80 - 120	<0.010	mg/L	NC	20		
8393923	F2 (C10-C16 Hydrocarbons)	2016/09/11	101	60 - 130	108	70 - 130	<0.10	mg/L	NC	30		
8393923	F3 (C16-C34 Hydrocarbons)	2016/09/11	101	60 - 130	109	70 - 130	<0.20	mg/L	NC	30		
8393923	F4 (C34-C50 Hydrocarbons)	2016/09/11	95	60 - 130	101	70 - 130	<0.20	mg/L	NC	30		
8394426	Benzene	2016/09/12	98	70 - 130	96	70 - 130	<0.40	ug/L	NC	30		
8394426	Ethylbenzene	2016/09/12	91	70 - 130	89	70 - 130	<0.40	ug/L	NC	30		
8394426	F1 (C6-C10) - BTEX	2016/09/12					<100	ug/L	NC	30		
8394426	F1 (C6-C10)	2016/09/12	96	70 - 130	88	70 - 130	<100	ug/L	NC	30		
8394426	m & p-Xylene	2016/09/12	91	70 - 130	90	70 - 130	<0.80	ug/L	NC	30		
8394426	o-Xylene	2016/09/12	95	70 - 130	94	70 - 130	<0.40	ug/L	NC	30		
8394426	Toluene	2016/09/12	91	70 - 130	89	70 - 130	<0.40	ug/L	NC	30		
8394426	Xylenes (Total)	2016/09/12					<0.80	ug/L	NC	30		
8394492	Benzene	2016/09/13	101	70 - 130	100	70 - 130	<0.40	ug/L	NC	30		

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SLR CONSULTING (CANADA) LTD
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Site Location: TERRA
Sampler Initials: DK, DP

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8394492	Ethylbenzene	2016/09/13	93	70 - 130	92	70 - 130	<0.40	ug/L	NC	30		
8394492	F1 (C6-C10) - BTEX	2016/09/13					<100	ug/L	NC	30		
8394492	F1 (C6-C10)	2016/09/13	88	70 - 130	93	70 - 130	<100	ug/L	NC	30		
8394492	m & p-Xylene	2016/09/13	92	70 - 130	92	70 - 130	<0.80	ug/L	NC	30		
8394492	o-Xylene	2016/09/13	94	70 - 130	95	70 - 130	<0.40	ug/L	NC	30		
8394492	Toluene	2016/09/13	93	70 - 130	91	70 - 130	<0.40	ug/L	NC	30		
8394492	Xylenes (Total)	2016/09/13					<0.80	ug/L	NC	30		
8394656	Dissolved Organic Carbon (C)	2016/09/12	NC	80 - 120	102	80 - 120	<0.50	mg/L	5.0	20		
8394727	Dissolved Phosphorus (P)	2016/09/13	106	80 - 120	98	80 - 120	<0.0030	mg/L	NC	20	91	80 - 120
8394742	Total Phosphorus (P)	2016/09/13	102	80 - 120	100	80 - 120	<0.0030	mg/L	15	20	90	80 - 120
8394766	Total Phosphorus (P)	2016/09/13	99	80 - 120	98	80 - 120	<0.0030	mg/L	NC	20	89	80 - 120
8394774	Dissolved Phosphorus (P)	2016/09/13	84	80 - 120	98	80 - 120	<0.0030	mg/L	NC	20	88	80 - 120
8395749	Dissolved Organic Carbon (C)	2016/09/13	NC	80 - 120	110	80 - 120	<0.50	mg/L	6.4	20		
8396043	Dissolved Phosphorus (P)	2016/09/14	96	80 - 120	97	80 - 120	<0.0030	mg/L	NC	20	87	80 - 120
8396091	Total Phosphorus (P)	2016/09/14	97	80 - 120	100	80 - 120	<0.0030	mg/L	NC	20	92	80 - 120
8396213	Dissolved Organic Carbon (C)	2016/09/13	NC	80 - 120	95	80 - 120	<0.50	mg/L	11	20		
8396377	Total Aluminum (Al)	2016/09/13	104	80 - 120	109	80 - 120	<3.0	ug/L	3.0	20		
8396377	Total Antimony (Sb)	2016/09/13	110	80 - 120	102	80 - 120	<0.50	ug/L	NC	20		
8396377	Total Arsenic (As)	2016/09/13	108	80 - 120	107	80 - 120	<0.10	ug/L	NC	20		
8396377	Total Barium (Ba)	2016/09/13	NC	80 - 120	97	80 - 120	<1.0	ug/L	1.1	20		
8396377	Total Beryllium (Be)	2016/09/13	113	80 - 120	116	80 - 120	<0.10	ug/L	NC	20		
8396377	Total Bismuth (Bi)	2016/09/13	100	80 - 120	95	80 - 120	<1.0	ug/L	NC	20		
8396377	Total Boron (B)	2016/09/13	122 (1)	80 - 120	117	80 - 120	<50	ug/L	NC	20		
8396377	Total Cadmium (Cd)	2016/09/13	108	80 - 120	107	80 - 120	<0.010	ug/L	7.5	20		
8396377	Total Chromium (Cr)	2016/09/13	101	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		
8396377	Total Cobalt (Co)	2016/09/13	101	80 - 120	101	80 - 120	<0.50	ug/L	1.6	20		
8396377	Total Copper (Cu)	2016/09/13	NC	80 - 120	102	80 - 120	<0.50	ug/L	2.9	20		
8396377	Total Iron (Fe)	2016/09/13	NC	80 - 120	115	80 - 120	<10	ug/L	3.0	20		
8396377	Total Lead (Pb)	2016/09/13	104	80 - 120	97	80 - 120	<0.20	ug/L	0.82	20		
8396377	Total Lithium (Li)	2016/09/13	120	80 - 120	117	80 - 120	<5.0	ug/L	NC	20		
8396377	Total Manganese (Mn)	2016/09/13	NC	80 - 120	101	80 - 120	<1.0	ug/L	1.7	20		

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SLR CONSULTING (CANADA) LTD
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Site Location: TERRA
Sampler Initials: DK, DP

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8396377	Total Molybdenum (Mo)	2016/09/13	105	80 - 120	103	80 - 120	<1.0	ug/L	NC	20		
8396377	Total Nickel (Ni)	2016/09/13	111	80 - 120	104	80 - 120	<1.0	ug/L	1.1	20		
8396377	Total Selenium (Se)	2016/09/13	111	80 - 120	113	80 - 120	<0.10	ug/L	NC	20		
8396377	Total Silicon (Si)	2016/09/13					<100	ug/L	1.2	20		
8396377	Total Silver (Ag)	2016/09/13	105	80 - 120	106	80 - 120	<0.020	ug/L	5.4	20		
8396377	Total Strontium (Sr)	2016/09/13	NC	80 - 120	101	80 - 120	<1.0	ug/L	0.24	20		
8396377	Total Sulphur (S)	2016/09/13					<3000	ug/L				
8396377	Total Thallium (Tl)	2016/09/13	97	80 - 120	96	80 - 120	<0.050	ug/L	NC	20		
8396377	Total Tin (Sn)	2016/09/13	NC	80 - 120	101	80 - 120	<5.0	ug/L	16	20		
8396377	Total Titanium (Ti)	2016/09/13	120	80 - 120	101	80 - 120	<5.0	ug/L	NC	20		
8396377	Total Uranium (U)	2016/09/13	99	80 - 120	96	80 - 120	<0.10	ug/L	NC	20		
8396377	Total Vanadium (V)	2016/09/13	97	80 - 120	104	80 - 120	<5.0	ug/L	NC	20		
8396377	Total Zinc (Zn)	2016/09/13	NC	80 - 120	113	80 - 120	<5.0	ug/L	2.5	20		
8396377	Total Zirconium (Zr)	2016/09/13					<0.50	ug/L	NC	20		
8396404	Total Aluminum (Al)	2016/09/13	105	80 - 120	115	80 - 120	<3.0	ug/L	2.1	20		
8396404	Total Antimony (Sb)	2016/09/13	NC	80 - 120	101	80 - 120	<0.50	ug/L	3.8	20		
8396404	Total Arsenic (As)	2016/09/13	NC	80 - 120	107	80 - 120	<0.10	ug/L	2.3	20		
8396404	Total Barium (Ba)	2016/09/13	NC	80 - 120	98	80 - 120	<1.0	ug/L	0.64	20		
8396404	Total Beryllium (Be)	2016/09/13	107	80 - 120	102	80 - 120	<0.10	ug/L	NC	20		
8396404	Total Bismuth (Bi)	2016/09/13	70 (1)	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
8396404	Total Boron (B)	2016/09/13	99	80 - 120	111	80 - 120	<50	ug/L	NC	20		
8396404	Total Cadmium (Cd)	2016/09/13	NC	80 - 120	100	80 - 120	<0.010	ug/L	4.7	20		
8396404	Total Chromium (Cr)	2016/09/13	96	80 - 120	100	80 - 120	<1.0	ug/L	NC	20		
8396404	Total Cobalt (Co)	2016/09/13	96	80 - 120	101	80 - 120	<0.50	ug/L	NC	20		
8396404	Total Copper (Cu)	2016/09/13	100	80 - 120	98	80 - 120	<0.50	ug/L	0.25	20		
8396404	Total Iron (Fe)	2016/09/13	101	80 - 120	105	80 - 120	<10	ug/L	14	20		
8396404	Total Lead (Pb)	2016/09/13	105	80 - 120	105	80 - 120	<0.20	ug/L	19	20		
8396404	Total Lithium (Li)	2016/09/13	104	80 - 120	102	80 - 120	<5.0	ug/L	NC	20		
8396404	Total Manganese (Mn)	2016/09/13	NC	80 - 120	103	80 - 120	<1.0	ug/L	7.7	20		
8396404	Total Molybdenum (Mo)	2016/09/13	NC	80 - 120	101	80 - 120	<1.0	ug/L	3.4	20		
8396404	Total Nickel (Ni)	2016/09/13	104	80 - 120	103	80 - 120	<1.0	ug/L	NC	20		

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Site Location: TERRA
Sampler Initials: DK, DP

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8396404	Total Selenium (Se)	2016/09/13	112	80 - 120	104	80 - 120	<0.10	ug/L	1.3	20		
8396404	Total Silicon (Si)	2016/09/13					<100	ug/L	1.4	20		
8396404	Total Silver (Ag)	2016/09/13	102	80 - 120	102	80 - 120	<0.020	ug/L	NC	20		
8396404	Total Strontium (Sr)	2016/09/13	NC	80 - 120	99	80 - 120	<1.0	ug/L	2.3	20		
8396404	Total Sulphur (S)	2016/09/13					<3000	ug/L				
8396404	Total Thallium (Tl)	2016/09/13	95	80 - 120	99	80 - 120	<0.050	ug/L	0.25	20		
8396404	Total Tin (Sn)	2016/09/13	86	80 - 120	100	80 - 120	<5.0	ug/L	NC	20		
8396404	Total Titanium (Ti)	2016/09/13	108	80 - 120	101	80 - 120	<5.0	ug/L	NC	20		
8396404	Total Uranium (U)	2016/09/13	95	80 - 120	101	80 - 120	<0.10	ug/L	NC	20		
8396404	Total Vanadium (V)	2016/09/13	101	80 - 120	102	80 - 120	<5.0	ug/L	NC	20		
8396404	Total Zinc (Zn)	2016/09/13	NC	80 - 120	105	80 - 120	<5.0	ug/L	7.5	20		
8396404	Total Zirconium (Zr)	2016/09/13					<0.50	ug/L	NC	20		
8396407	Dissolved Aluminum (Al)	2016/09/14	104	80 - 120	109	80 - 120	<3.0	ug/L	19	20		
8396407	Dissolved Antimony (Sb)	2016/09/14	100	80 - 120	101	80 - 120	<0.50	ug/L	NC	20		
8396407	Dissolved Arsenic (As)	2016/09/14	108	80 - 120	108	80 - 120	<0.10	ug/L	3.0	20		
8396407	Dissolved Barium (Ba)	2016/09/14	NC	80 - 120	100	80 - 120	<1.0	ug/L	2.8	20		
8396407	Dissolved Beryllium (Be)	2016/09/14	101	80 - 120	106	80 - 120	<0.10	ug/L	NC	20		
8396407	Dissolved Bismuth (Bi)	2016/09/14	94	80 - 120	103	80 - 120	<1.0	ug/L	NC	20		
8396407	Dissolved Boron (B)	2016/09/14	NC	80 - 120	105	80 - 120	<50	ug/L	1.8	20		
8396407	Dissolved Cadmium (Cd)	2016/09/14	94	80 - 120	100	80 - 120	<0.010	ug/L	13	20		
8396407	Dissolved Chromium (Cr)	2016/09/14	93	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		
8396407	Dissolved Cobalt (Co)	2016/09/14	88	80 - 120	100	80 - 120	<0.50	ug/L	2.0	20		
8396407	Dissolved Copper (Cu)	2016/09/14	83	80 - 120	98	80 - 120	<0.20	ug/L	6.4	20		
8396407	Dissolved Iron (Fe)	2016/09/14	99	80 - 120	105	80 - 120	<5.0	ug/L	3.7	20		
8396407	Dissolved Lead (Pb)	2016/09/14	99	80 - 120	106	80 - 120	<0.20	ug/L	NC	20		
8396407	Dissolved Lithium (Li)	2016/09/14	NC	80 - 120	105	80 - 120	<5.0	ug/L	1.9	20		
8396407	Dissolved Manganese (Mn)	2016/09/14	NC	80 - 120	101	80 - 120	<1.0	ug/L	1.0	20		
8396407	Dissolved Molybdenum (Mo)	2016/09/14	NC	80 - 120	105	80 - 120	<1.0	ug/L				
8396407	Dissolved Nickel (Ni)	2016/09/14	NC	80 - 120	106	80 - 120	<1.0	ug/L	3.7	20		
8396407	Dissolved Selenium (Se)	2016/09/14	105	80 - 120	103	80 - 120	<0.10	ug/L	3.3	20		
8396407	Dissolved Silicon (Si)	2016/09/14					<100	ug/L	6.9	20		

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Site Location: TERRA
Sampler Initials: DK, DP

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8396407	Dissolved Silver (Ag)	2016/09/14	98	80 - 120	103	80 - 120	<0.020	ug/L	NC	20		
8396407	Dissolved Strontium (Sr)	2016/09/14	NC	80 - 120	103	80 - 120	<1.0	ug/L	3.6	20		
8396407	Dissolved Thallium (Tl)	2016/09/14	97	80 - 120	103	80 - 120	<0.050	ug/L	NC	20		
8396407	Dissolved Tin (Sn)	2016/09/14	103	80 - 120	99	80 - 120	<5.0	ug/L	NC	20		
8396407	Dissolved Titanium (Ti)	2016/09/14	96	80 - 120	95	80 - 120	<5.0	ug/L	NC	20		
8396407	Dissolved Uranium (U)	2016/09/14	NC	80 - 120	104	80 - 120	<0.10	ug/L	2.3	20		
8396407	Dissolved Vanadium (V)	2016/09/14	97	80 - 120	98	80 - 120	<5.0	ug/L	NC	20		
8396407	Dissolved Zinc (Zn)	2016/09/14	NC	80 - 120	106	80 - 120	<5.0	ug/L	4.5	20		
8396407	Dissolved Zirconium (Zr)	2016/09/14					<0.50	ug/L	NC	20		
8396711	Total Aluminum (Al)	2016/09/14	NC	80 - 120	106	80 - 120	<3.0	ug/L	1.1	20		
8396711	Total Antimony (Sb)	2016/09/14	NC	80 - 120	96	80 - 120	<0.50	ug/L	8.4	20		
8396711	Total Arsenic (As)	2016/09/14	NC	80 - 120	100	80 - 120	<0.10	ug/L	9.9	20		
8396711	Total Barium (Ba)	2016/09/14	NC	80 - 120	94	80 - 120	<1.0	ug/L	10	20		
8396711	Total Beryllium (Be)	2016/09/14	104	80 - 120	105	80 - 120	<0.10	ug/L	NC	20		
8396711	Total Bismuth (Bi)	2016/09/14	NC	80 - 120	97	80 - 120	<1.0	ug/L	NC	20		
8396711	Total Boron (B)	2016/09/14	108	80 - 120	95	80 - 120	<50	ug/L	NC	20		
8396711	Total Cadmium (Cd)	2016/09/14	101	80 - 120	101	80 - 120	<0.010	ug/L	0.97	20		
8396711	Total Chromium (Cr)	2016/09/14	99	80 - 120	95	80 - 120	<1.0	ug/L	NC	20		
8396711	Total Cobalt (Co)	2016/09/14	95	80 - 120	95	80 - 120	<0.50	ug/L	15	20		
8396711	Total Copper (Cu)	2016/09/14	NC	80 - 120	97	80 - 120	<0.50	ug/L	17	20		
8396711	Total Iron (Fe)	2016/09/14	NC	80 - 120	106	80 - 120	<10	ug/L	13	20		
8396711	Total Lead (Pb)	2016/09/14	102	80 - 120	100	80 - 120	<0.20	ug/L	5.1	20		
8396711	Total Lithium (Li)	2016/09/14	NC	80 - 120	102	80 - 120	<5.0	ug/L	16	20		
8396711	Total Manganese (Mn)	2016/09/14	NC	80 - 120	91	80 - 120	<1.0	ug/L	13	20		
8396711	Total Molybdenum (Mo)	2016/09/14	NC	80 - 120	100	80 - 120	<1.0	ug/L	4.5	20		
8396711	Total Nickel (Ni)	2016/09/14	NC	80 - 120	95	80 - 120	<1.0	ug/L	11	20		
8396711	Total Selenium (Se)	2016/09/14	104	80 - 120	105	80 - 120	<0.10	ug/L	NC	20		
8396711	Total Silicon (Si)	2016/09/14					<100	ug/L	6.5	20		
8396711	Total Silver (Ag)	2016/09/14	100	80 - 120	98	80 - 120	<0.020	ug/L	7.3	20		
8396711	Total Strontium (Sr)	2016/09/14	NC	80 - 120	99	80 - 120	<1.0	ug/L	8.9	20		
8396711	Total Sulphur (S)	2016/09/14					<3000	ug/L				

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Site Location: TERRA
Sampler Initials: DK, DP

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8396711	Total Thallium (Tl)	2016/09/14	104	80 - 120	96	80 - 120	<0.050	ug/L	NC	20		
8396711	Total Tin (Sn)	2016/09/14	94	80 - 120	93	80 - 120	<5.0	ug/L	NC	20		
8396711	Total Titanium (Ti)	2016/09/14	100	80 - 120	92	80 - 120	<5.0	ug/L	NC	20		
8396711	Total Uranium (U)	2016/09/14	101	80 - 120	99	80 - 120	<0.10	ug/L	4.5	20		
8396711	Total Vanadium (V)	2016/09/14	100	80 - 120	93	80 - 120	<5.0	ug/L	NC	20		
8396711	Total Zinc (Zn)	2016/09/14	NC	80 - 120	107	80 - 120	<5.0	ug/L	8.6	20		
8396711	Total Zirconium (Zr)	2016/09/14					<0.50	ug/L	NC	20		
8396988	Dissolved Mercury (Hg)	2016/09/14	86	80 - 120	116	80 - 120	<0.010	ug/L	NC	20		
8396997	Total Mercury (Hg)	2016/09/14	99	80 - 120	103	80 - 120	<0.010	ug/L	NC	20		
8397013	Total Mercury (Hg)	2016/09/14	98	80 - 120	112	80 - 120	<0.010	ug/L	NC	20		
8397019	Dissolved Phosphorus (P)	2016/09/14	91	80 - 120	96	80 - 120	<0.0030	mg/L	NC	20	96	80 - 120
8397024	Total Phosphorus (P)	2016/09/14	NC	80 - 120	96	80 - 120	<0.0030	mg/L	1.9	20	88	80 - 120
8397504	Dissolved Organic Carbon (C)	2016/09/14	NC	80 - 120	103	80 - 120	<0.50	mg/L	8.5	20		
8397573	Total Aluminum (Al)	2016/09/14	109	80 - 120	108	80 - 120	<3.0	ug/L	NC	20		
8397573	Total Antimony (Sb)	2016/09/14	99	80 - 120	100	80 - 120	<0.50	ug/L	NC	20		
8397573	Total Arsenic (As)	2016/09/14	104	80 - 120	100	80 - 120	<0.10	ug/L	NC	20		
8397573	Total Barium (Ba)	2016/09/14	95	80 - 120	96	80 - 120	<1.0	ug/L	NC	20		
8397573	Total Beryllium (Be)	2016/09/14	103	80 - 120	100	80 - 120	<0.10	ug/L	NC	20		
8397573	Total Bismuth (Bi)	2016/09/14	103	80 - 120	97	80 - 120	<1.0	ug/L	NC	20		
8397573	Total Boron (B)	2016/09/14	105	80 - 120	98	80 - 120	<50	ug/L	NC	20		
8397573	Total Cadmium (Cd)	2016/09/14	101	80 - 120	101	80 - 120	<0.010	ug/L	NC	20		
8397573	Total Chromium (Cr)	2016/09/14	100	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		
8397573	Total Cobalt (Co)	2016/09/14	101	80 - 120	99	80 - 120	<0.50	ug/L	NC	20		
8397573	Total Copper (Cu)	2016/09/14	100	80 - 120	100	80 - 120	<0.50	ug/L	NC	20		
8397573	Total Iron (Fe)	2016/09/14	108	80 - 120	112	80 - 120	<10	ug/L	NC	20		
8397573	Total Lead (Pb)	2016/09/14	104	80 - 120	99	80 - 120	<0.20	ug/L	NC	20		
8397573	Total Lithium (Li)	2016/09/14	101	80 - 120	102	80 - 120	<5.0	ug/L	NC	20		
8397573	Total Manganese (Mn)	2016/09/14	99	80 - 120	98	80 - 120	<1.0	ug/L	NC	20		
8397573	Total Molybdenum (Mo)	2016/09/14	89	80 - 120	100	80 - 120	<1.0	ug/L	NC	20		
8397573	Total Nickel (Ni)	2016/09/14	104	80 - 120	103	80 - 120	<1.0	ug/L	NC	20		
8397573	Total Selenium (Se)	2016/09/14	103	80 - 120	105	80 - 120	<0.10	ug/L	NC	20		

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Sampler Initials: DK, DP

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8397573	Total Silicon (Si)	2016/09/14					<100	ug/L	NC	20		
8397573	Total Silver (Ag)	2016/09/14	101	80 - 120	108	80 - 120	<0.020	ug/L	NC	20		
8397573	Total Strontium (Sr)	2016/09/14	96	80 - 120	102	80 - 120	<1.0	ug/L	NC	20		
8397573	Total Sulphur (S)	2016/09/14					<3000	ug/L				
8397573	Total Thallium (Tl)	2016/09/14	96	80 - 120	94	80 - 120	<0.050	ug/L	NC	20		
8397573	Total Tin (Sn)	2016/09/14	98	80 - 120	100	80 - 120	<5.0	ug/L	NC	20		
8397573	Total Titanium (Ti)	2016/09/14	96	80 - 120	97	80 - 120	<5.0	ug/L	NC	20		
8397573	Total Uranium (U)	2016/09/14	101	80 - 120	98	80 - 120	<0.10	ug/L	NC	20		
8397573	Total Vanadium (V)	2016/09/14	101	80 - 120	96	80 - 120	<5.0	ug/L	NC	20		
8397573	Total Zinc (Zn)	2016/09/14	107	80 - 120	103	80 - 120	<5.0	ug/L	NC	20		
8397573	Total Zirconium (Zr)	2016/09/14					<0.50	ug/L	NC	20		
8399072	Dissolved Mercury (Hg)	2016/09/15	106	80 - 120	104	80 - 120	<0.010	ug/L	NC	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

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

Maxxam Job #: B677434
Report Date: 2017/04/10

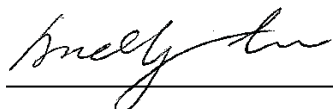
SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000 GREAT BEAR LAK
Site Location: TERRA
Sampler Initials: DK, DP

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Anna Koksharova, M.Sc., Organics Senior Analyst



Andy Lu, Ph.D., P.Chem., Scientific Specialist



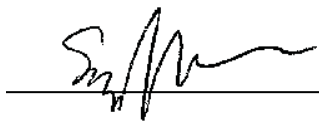
David Huang, M.Sc., P.Chem., QP, Scientific Services Manager



Justin Geisel, B.Sc., Organics Supervisor



Maria Magdalena Florescu, Ph.D., P.Chem., QP, Inorganics Senior Analyst



Sandy Yuan, M.Sc., Scientific Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Maxxam Analytics International Corporation o/a Maxxam Analytics
Unit 105 - 349 Old Airport Road, Yellowknife, North West Territories Canada X1A 3X6 Tel: (867) 445-2448 Toll-free 800-563-6266 Fax: (905) 817-5779 www.maxxam.ca

Chain Of Custody Record Page 1 of 3

INVOICE TO:		Report Information		Project Information		Laboratory Use Only	
Company Name: #1776 SLR CONSULTING (CANADA) LTD		Company Name:		Quotation #: B51186		Maxxam Job #: B677434D-1	
Contact Name: Jay Cherian KATRINA KOKLOBY		Contact Name:		P.O. #:		Bottle Order #:	
Address: SLR YELLOWKNIFE		Address:		Project #:		Chain Of Custody Record	
Phone: jcherian@slrconsulting.com		Phone: knokleby@slrconsulting.ca		Project Name: GREAT BEAR LAKE		Project Manager:	
Fax: analytical@slrconsulting.ca		Fax:		Site #:		Letitia Prefontaine	
Special Instructions: ★ Hold Cr 6 ★		ANALYSIS REQUESTED (PLEASE BE SPECIFIC)		Turnaround Time (TAT) Required		Please provide advance notice for rush projects	
Regulatory Criteria: <input type="checkbox"/> CSR <input checked="" type="checkbox"/> CCME <input type="checkbox"/> BC Water Quality <input type="checkbox"/> Other		Metals Field Filtered ? (Y/N)		Regular (Standard) TAT: (will be applied if Rush TAT is not specified) Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.		Job Specific Rush TAT (if applies to entire submission) 1 DAY <input type="checkbox"/> 2 Day <input type="checkbox"/> 3 Day <input type="checkbox"/> Date Required: <input type="checkbox"/> Rush Confirmation Number: (call lab for #)	
SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM		Alkalinity, Conductivity, pH, Turbidity, TSS, TDS		Hexavalent Chromium (Total)		# of Bottles	
		Chloride, Sulphate		Dissolved Metals in Water w/ CV Hg & Dissolved Hardness		Comments	
		Ammonia, Orthophosphorus, Total phosphate, Nitrate, Nitrite, DOC		CCME BTEX/F1 in Water			
		Total Metals in Water w/ CV Hg & Total Hardness		CCME F2-F4 in Water			
				Gross Alpha & Beta			
				Lead-210 & Radium-226			

Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered ? (Y/N)	Alkalinity, Conductivity, pH, Turbidity, TSS, TDS	Chloride, Sulphate	Ammonia, Orthophosphorus, Total phosphate, Nitrate, Nitrite, DOC	Total Metals in Water w/ CV Hg & Total Hardness	Hexavalent Chromium (Total)	Dissolved Metals in Water w/ CV Hg & Dissolved Hardness	CCME BTEX/F1 in Water	CCME F2-F4 in Water	Gross Alpha & Beta	Lead-210 & Radium-226	# of Bottles	Comments
1	T5	16/09/03	11:43	SW	/	X	X	X	X			X	X			11	
2	T3	↓	11:05	SW	/	X	X	X	X			X	X			11	
3	T1	↓	10:28	SW	/	X	X	X	X							7	
4	Dup 6	↓	10:28	SW	/	X	X	X	X							7	RECEIVED IN YELLOWKNIFE
5	T17	↓	10:08	SW	/	X	X	X	X							7	By: Michelle Michell 8:40
6	T8B	16/09/02	18:33	SW	/	X	X	X	X	X	X					10	2016 -09-07
7	T8C	↓	18:16	SW	/	X	X	X	X	X	X					10	ON ACTR
8	T16-10m	↓	18:00	SW	/	X	X	X	X		X					9	Temp: 1 1
9	T16-2m	↓	17:42	SW	/	X	X	X	X		X					9	
10	Dup 7	↓	17:42	SW	/	X	X	X	X		X					9	

RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)		Time		RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)		Time		# jars used and not submitted		Lab Use Only	
DALEW PETERSON		16/09/06		10:00		DALEW PETERSON		2016/09/08		12:43				Time Sensitive: <input type="checkbox"/> Temperature (°C) on Receipt: See ACTR Custody Seal Intact on Cooler?: <input type="checkbox"/> Yes <input type="checkbox"/> No	

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

White: Maxxam Yellow: Client

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Unit 105 - 349 Old Airport Road, Yellowknife, North West Territories Canada X1A 3X6 Tel (867) 445-2448 Toll-free: 800-563-6266 Fax (905) 817-5779 www.maxxam.ca

Chain Of Custody Record

2 of 3
Page 1 of 3

INVOICE TO:		Report Information		Project Information		Laboratory Use Only											
Company Name	#1776 SLR CONSULTING (CANADA) LTD	Company Name		Quotation #	B51186	Maxxam Job #	Bottle Order #:										
Contact Name	Jay Christian KARINA KNOCKLEY	Contact Name		P.O. #													
Address		Address		Project #	234.01016.00000	Chain Of Custody Record	Project Manager										
Phone		Phone		Project Name	GREAT BEAR LAKE												
Fax		Fax		Site #	504160												
Email: jcherian@slrconsulting.com; analytical@slrconsulting.ca		Email: karina.knockley@slr...		Sampled By	DP/DK												
Regulatory Criteria:		Special Instructions		ANALYSIS REQUESTED (PLEASE BE SPECIFIC)													
<input type="checkbox"/> CSR		★ Hold ★															
<input checked="" type="checkbox"/> CCME																	
<input type="checkbox"/> BC Water Quality																	
<input type="checkbox"/> Other																	
SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM																	
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered ? (Y/N)	Alkalinity, Conductivity, pH, Turbidity, TSS, TDS	Chloride, Sulphate	Ammonia, Orthophosphorus, Dissolved phosphate, Total phosphate, Nitrate, Nitrite, DOC	Total Metals in Water w/ CV Hg & Total Hardness	Hexavalent Chromium (Total)	Dissolved Metals in Water w/ CV Hg & Dissolved Hardness	CCME BTEX/F1 in Water	CCME F2-F4 in Water	Gross Alpha & Beta	Lead-210 & Radium-226	# of Bottles	Comments
1	T7	16/09/02	17:07	SW	/	X	X	X	X							7	
2	Dup D	16/09/03	16:30	SW	/	X	X	X	X							7	
3	T8	↓	9:37	SW	/	X	X	X	X			X	X			11	
4	T2	↓	8:53	SW	/	X	X	X	X	X						8	
5	R3	16/09/02	15:26	SW	/	X	X	X	X			X	X			11	
6	R4	16/09/05	16:46	SW	/	X	X	X	X			X	X			11	
7	T8A	16/09/02	18:48	SW	/	X	X	X	X	X	X	X	X			11	
8	T10	16/09/03	14:12	SW	/	X	X	X	X							7	
9	T19	↓	14:51	SW	/	X	X	X	X			X	X			11	
10	T6	↓	13:42	SW	/	X	X	X	X			X	X			11	
RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	# Jars used and not submitted		Lab Use Only							
DAVEN PETERSON		16/09/06	10:00	DAVEN PETERSON		2016/09/08	12:43			Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?					
										<input type="checkbox"/>	See ACTR	<input type="checkbox"/> Yes <input type="checkbox"/> No					

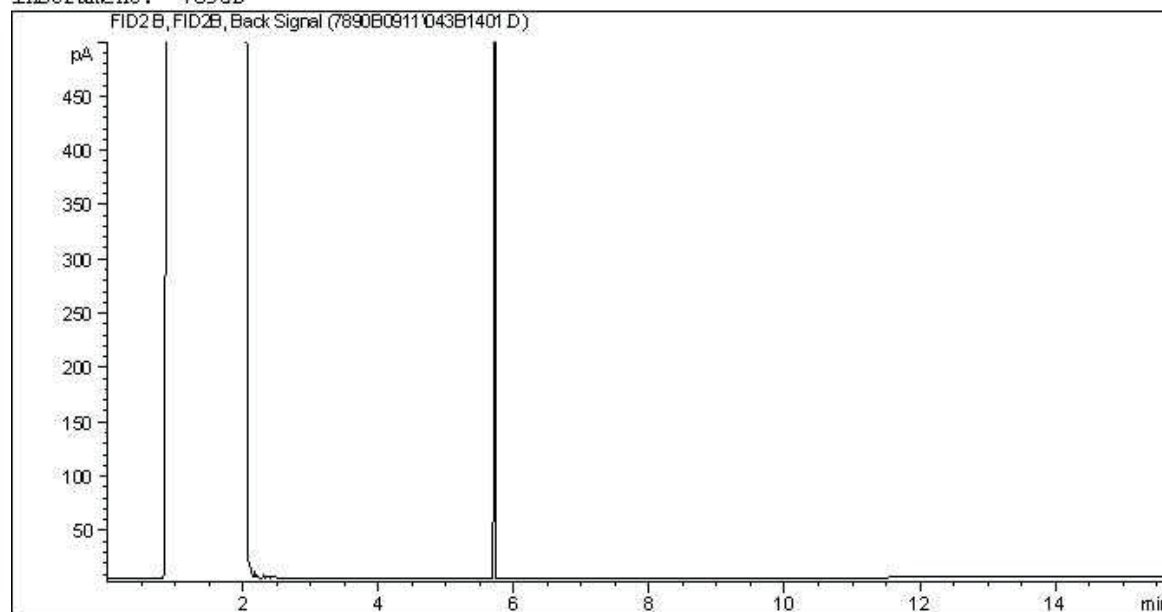
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

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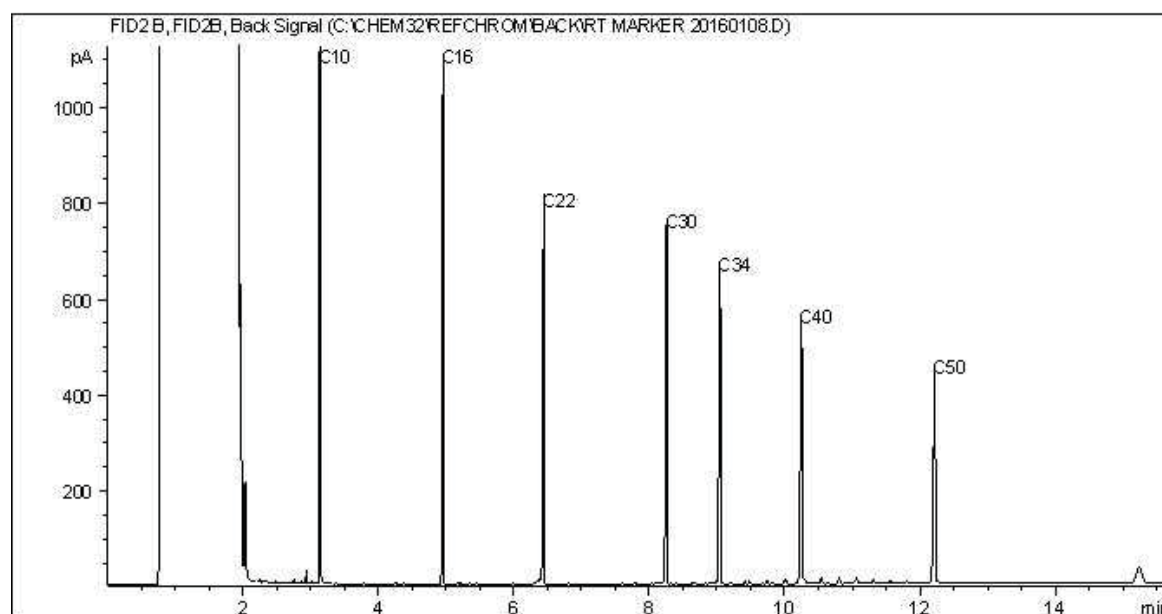
Maxxam Analytics International Corporation o/a Maxxam Analytics										Chain Of Custody Record									
Unit 105 - 349 Old Airport Road, Yellowknife, North West Territories Canada X1A 3X6 Tel: (867) 445-2448 Toll-free 800-563-6266 Fax: (905) 817-5779 www.maxxam.ca										Page 3 of 3									
INVOICE TO:					Report Information					Project Information					Laboratory Use Only				
Company Name: #1776 SLR CONSULTING (CANADA) LTD					Company Name:					Quotation #: B51186					Maxxam Job #: BG77434D-JT				
Contact Name: Jay Chenan					Contact Name:					P.O. #: 231.01016.0000					Bottle Order #: 504160				
Address:					Address:					Project #: GREAT BEAR LAKE					Chain Of Custody Record				
Phone:					Phone:					Project Name: Silver Bear TERRA.					Project Manager: Letitia Prefontaine				
Fax: jcheran@slrconsulting.com; analytical@slrconsulting.ca					Fax: knokley@slr...					Site #: DP/DR					C#504160-03-01				
Regulatory Criteria: knokley@slr... -					Special Instructions: ★ Hold ★					ANALYSIS REQUESTED (PLEASE BE SPECIFIC)									
<input type="checkbox"/> CSR <input checked="" type="checkbox"/> CCME <input type="checkbox"/> BC Water Quality <input type="checkbox"/> Other										Turnaround Time (TAT) Required: Please provide advance notice for rush projects Regular (Standard) TAT: (will be applied if Rush TAT is not specified): Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details. Job Specific Rush TAT (if applies to entire submission) 1 DAY <input type="checkbox"/> 2 Day <input type="checkbox"/> 3 Day <input type="checkbox"/> Date Required: <input type="checkbox"/> Rush Confirmation Number: (call lab for #)									
SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM																			
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered ? (Y/N)	Alkalinity, Conductivity, pH, Turbidity, TSS, TDS	Chloride, Sulphate	Ammonia, Orthophosphates, Total phosphate, Nitrate, Nitrite, DOC	Total Metals in Water w/ CV Hg & Total Hardness	Hexavalent Chromium (Total)	Dissolved Metals in Water w/ CV Hg & Dissolved Hardness	CCME BTEX/F1 in Water	CCME F2-F4 in Water	Gross Alpha & Beta	Lead-210 & Radium-226	# of Bottles	Comments		
1	T4	16/09/03	15:30	SW	/	X	X	X	X							7			
2	T19B	↓	15:40	SW	/	X	X	X	X		X					10			
3	T20	↓	16:08	SW	/	X	X	X	X							7	RECEIVED IN YELLOWKNIFE By: Michelle Guile 2016-09-07 8:40		
4	Trip Blank	—	—	—	/	X	X	X	X							6			
5	T9	16/09/03	13:36	SW	/	X	X	X	X	X						8			
6	T25	16/09/04	19:30	SW	/	X	X	X	X	X	X	X	X			14	Temp: ON ACTR.		
7																			
8																			
9																			
10																			
RELINQUISHED BY: (Signature/Print)					RECEIVED BY: (Signature/Print)					Date: (YY/MM/DD)					Time				
David Peterson					David Peterson					2016/09/08					12:43				
Time Sensitive					Temperature (°C) on Receipt					Custody Seal Intact on Cooler?									
See ACTR																			
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CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: 7890B



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
Varsol: C8 - C12
Kerosene: C7 - C16

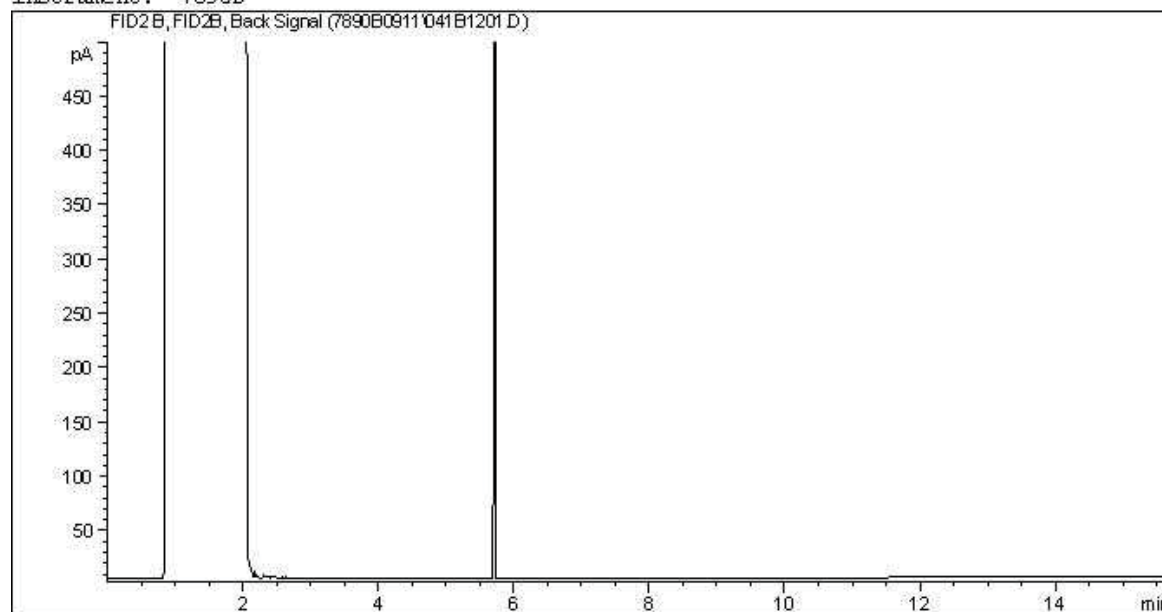
Diesel: C8 - C22
Lubricating Oils: C20 - C40
Crude Oils: C3 - C60+

Page 1 of 1

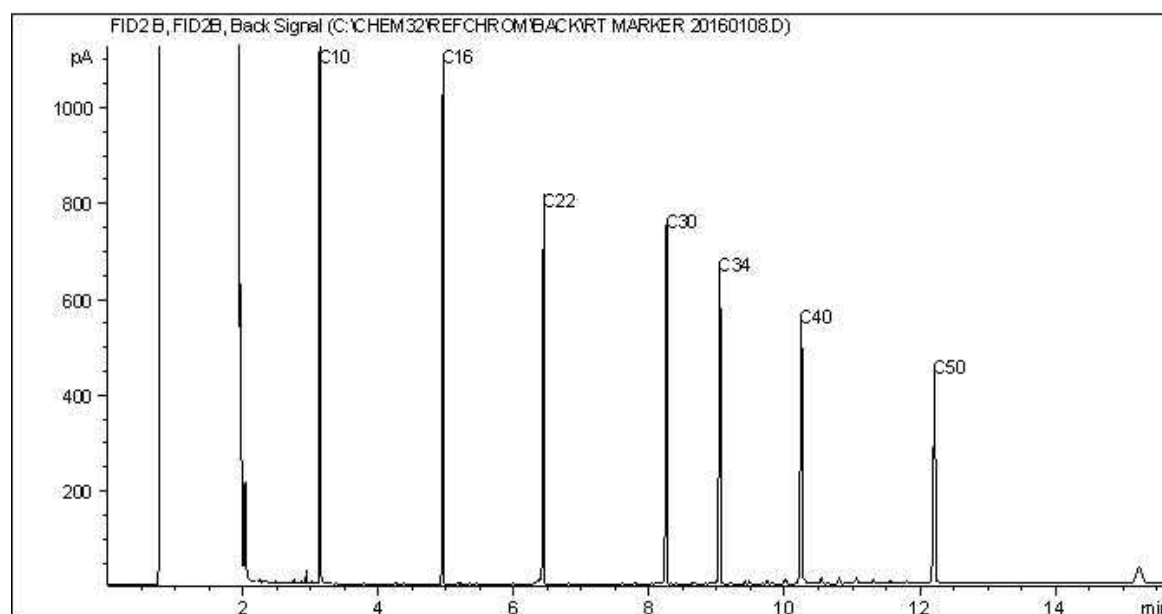
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: 7890B



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

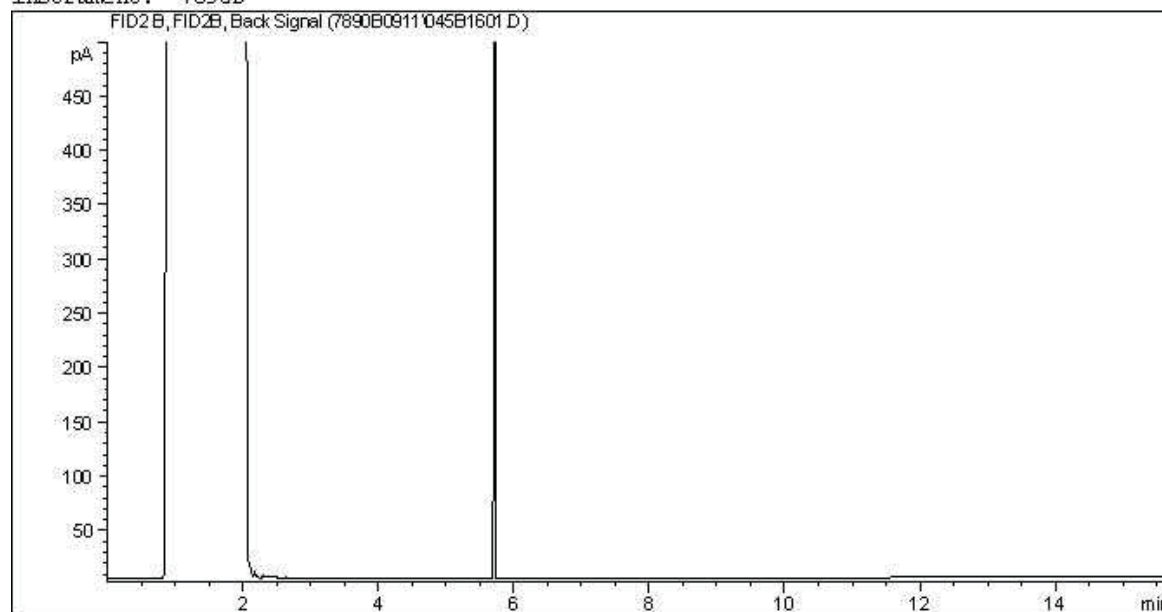
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Page 1 of 1

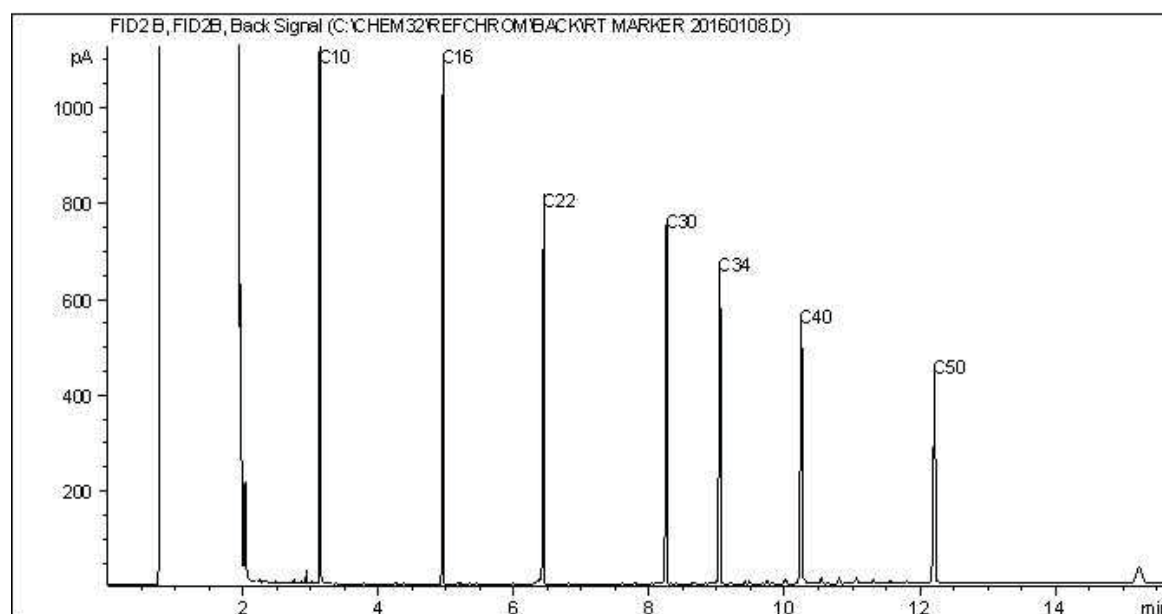
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CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: 7890B



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

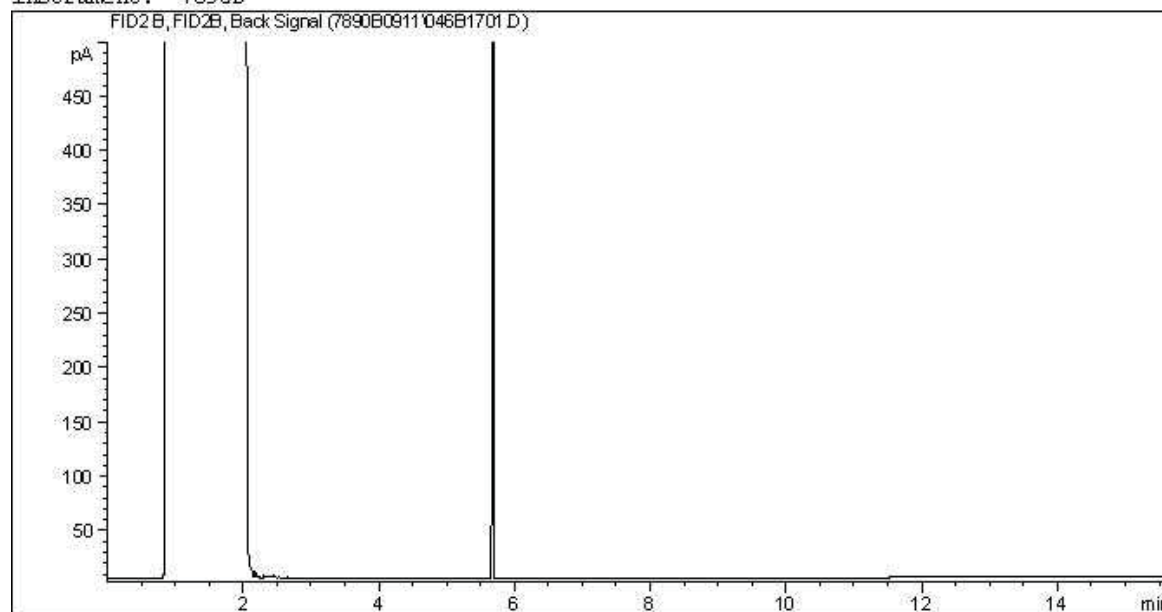
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Page 1 of 1

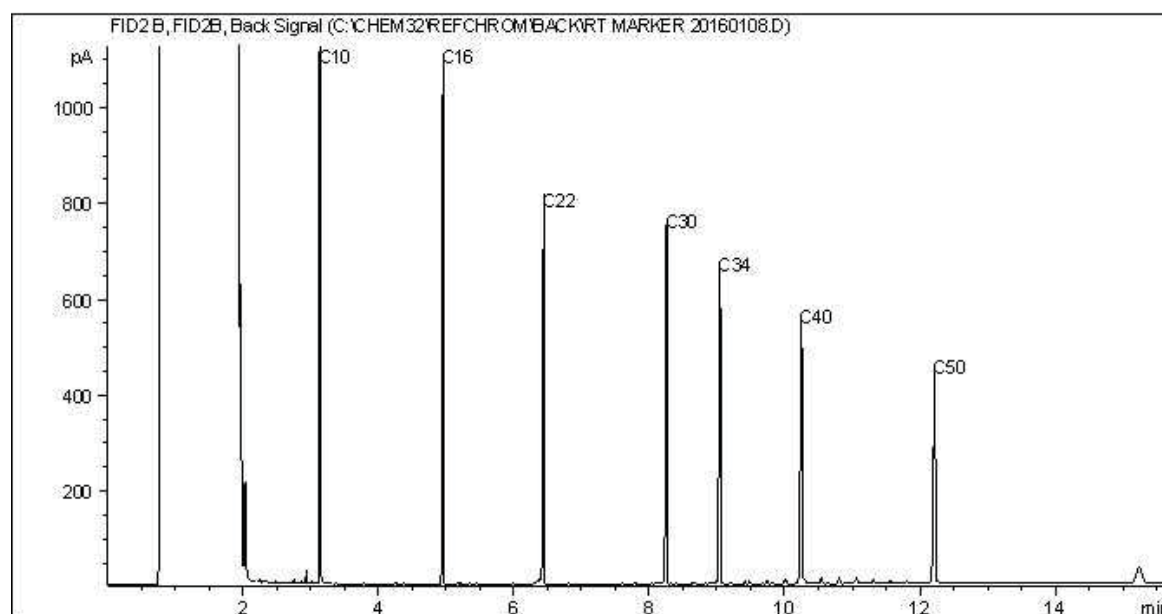
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CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: 7890B



Carbon Range Distribution - Reference Chromatogram



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Gasoline: C4 - C12
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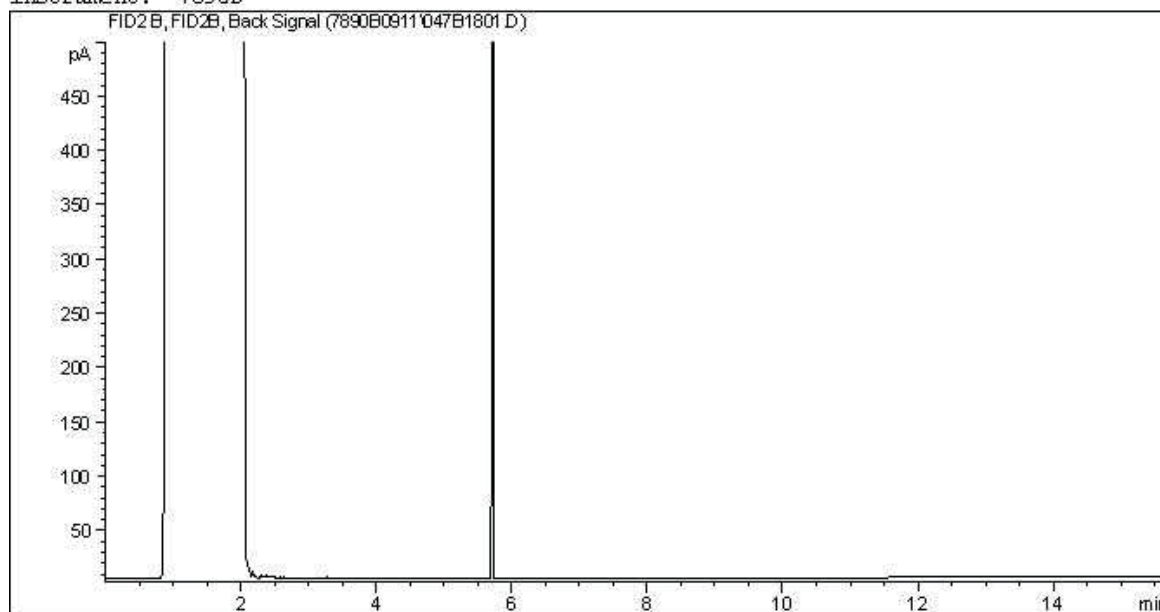
Diesel: C8 - C22
Lubricating Oils: C20 - C40
Crude Oils: C3 - C60+

Page 1 of 1

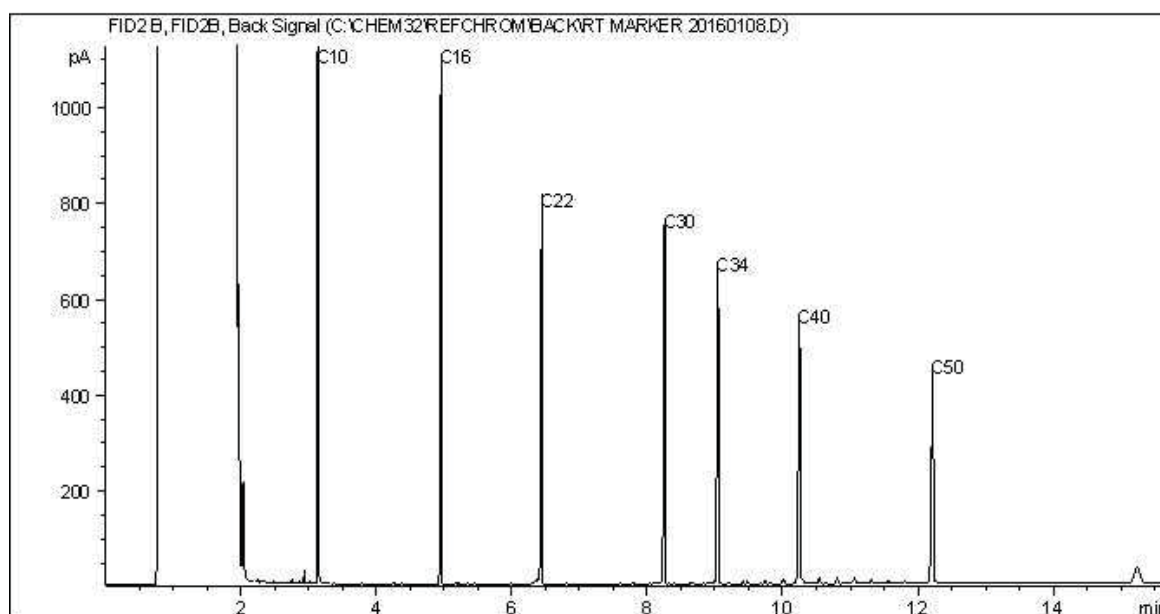
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CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: 7890B



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

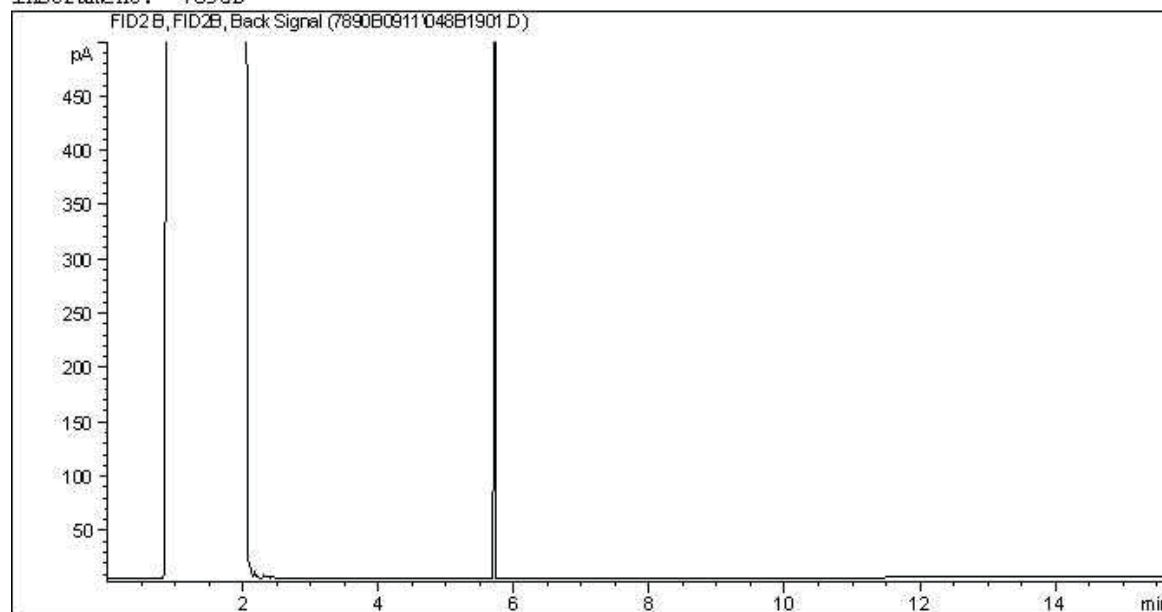
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Page 1 of 1

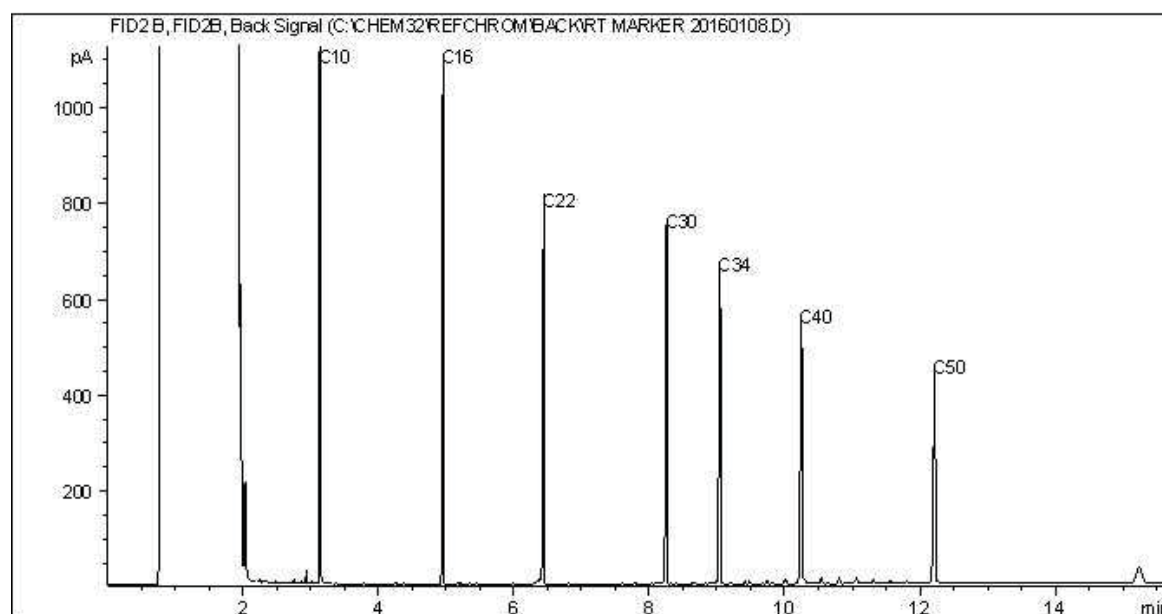
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CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: 7890B



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

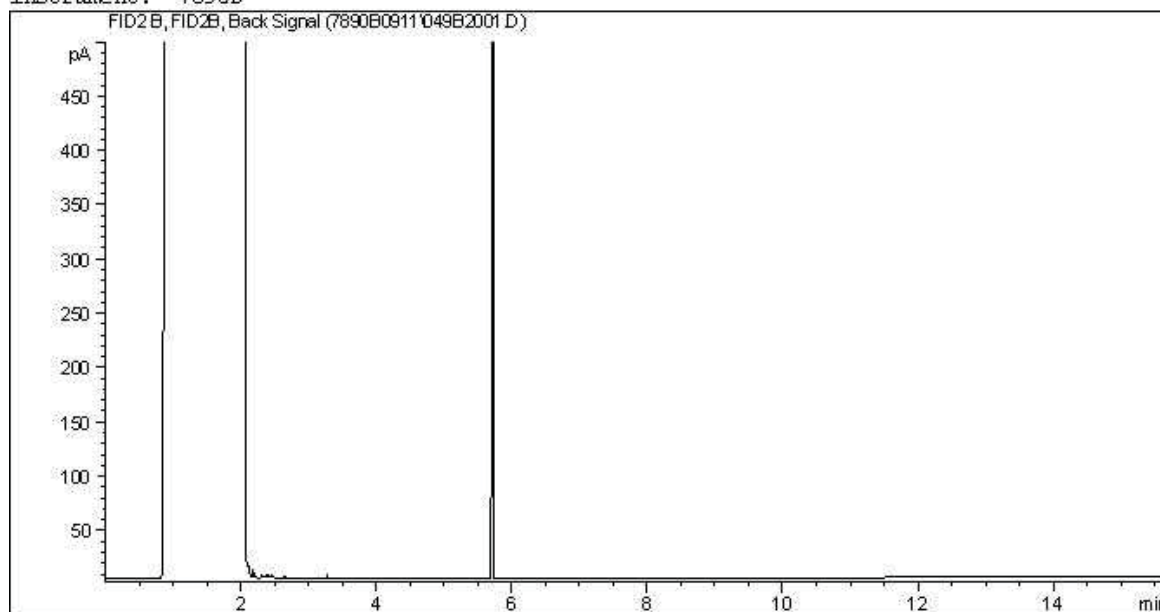
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Page 1 of 1

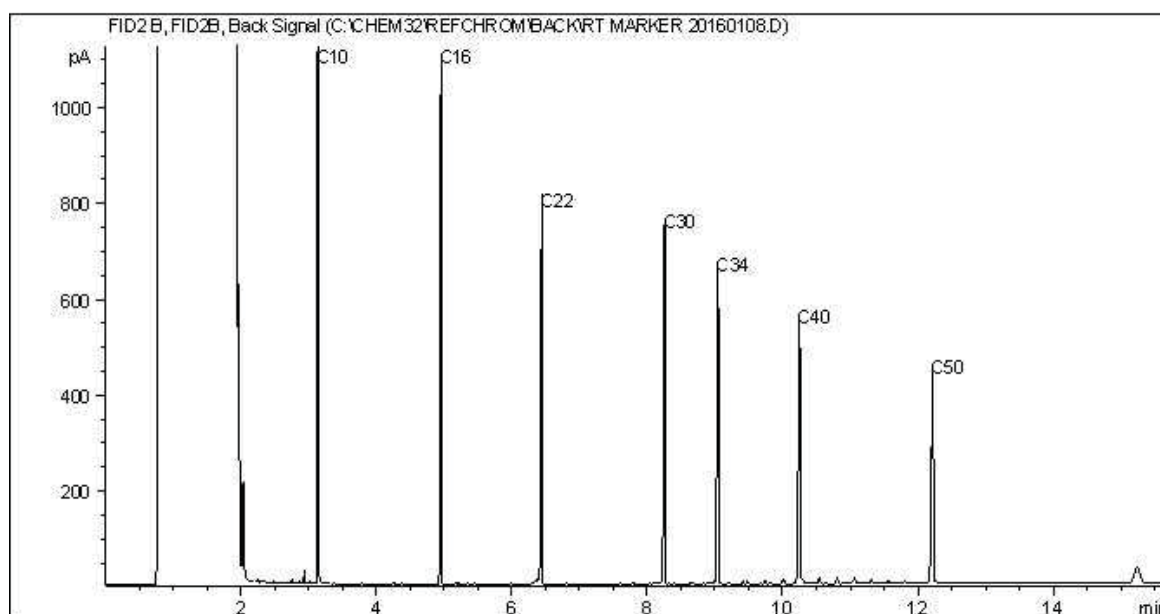
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CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: 7890B



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

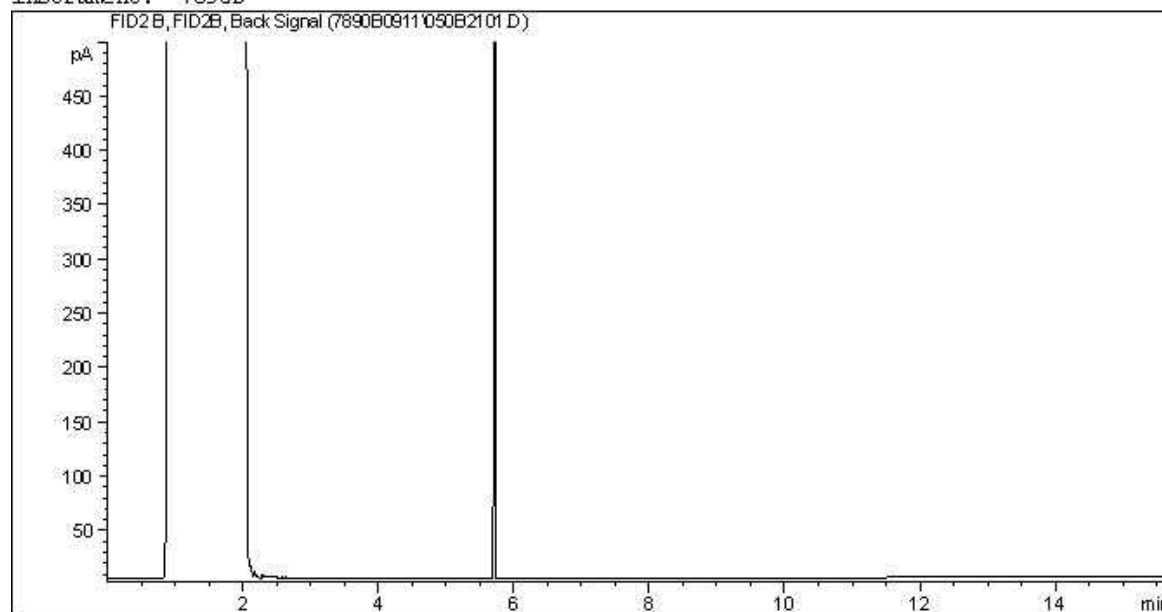
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Page 1 of 1

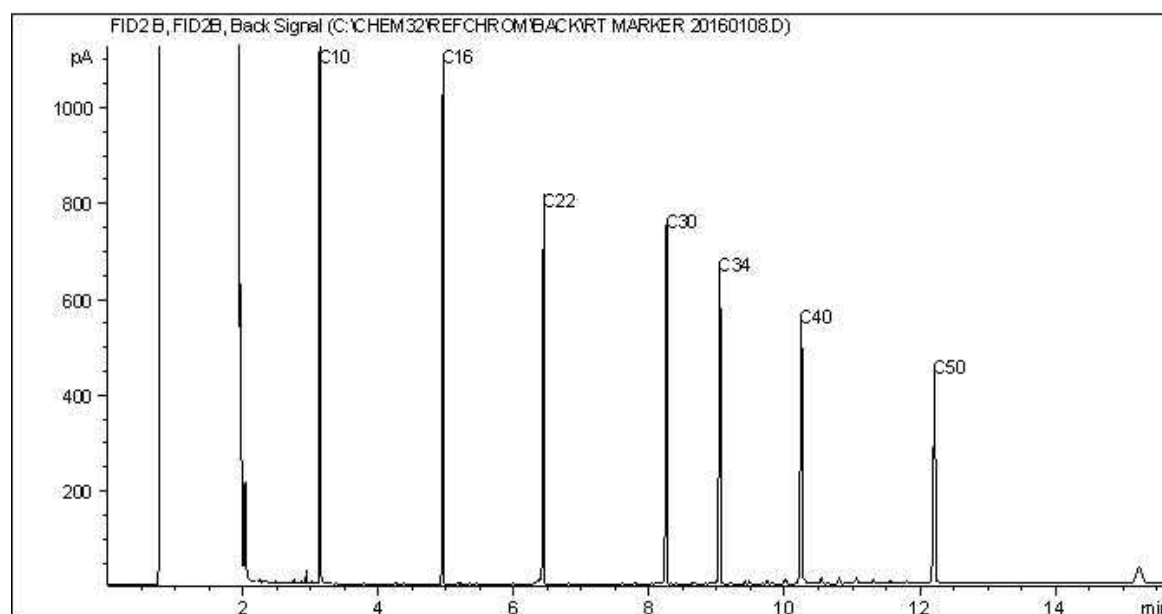
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CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: 7890B



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

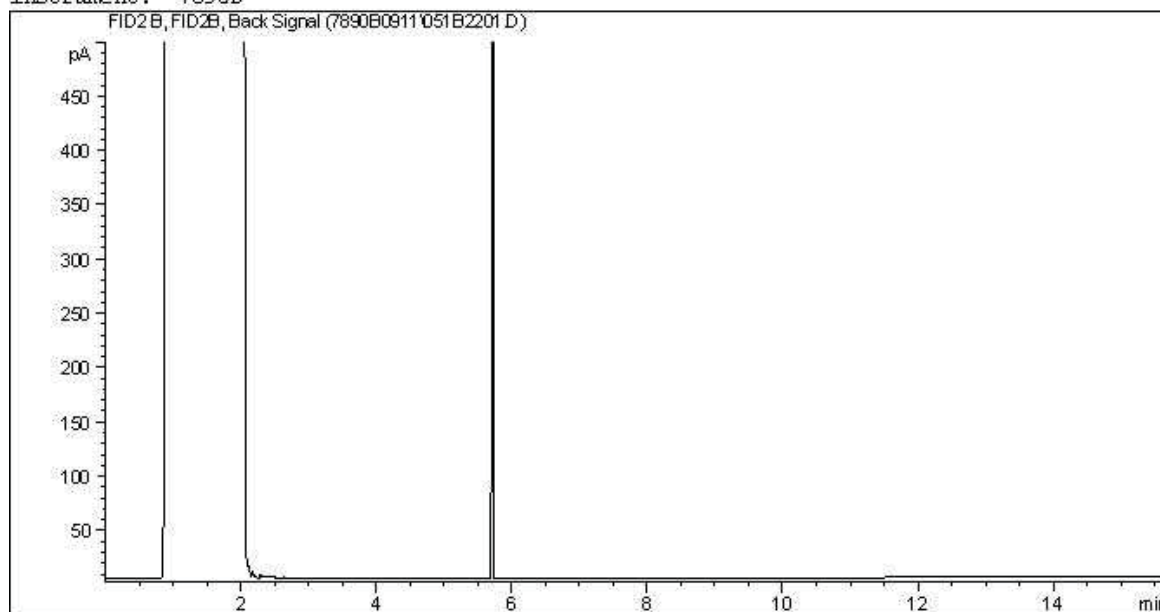
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
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Page 1 of 1

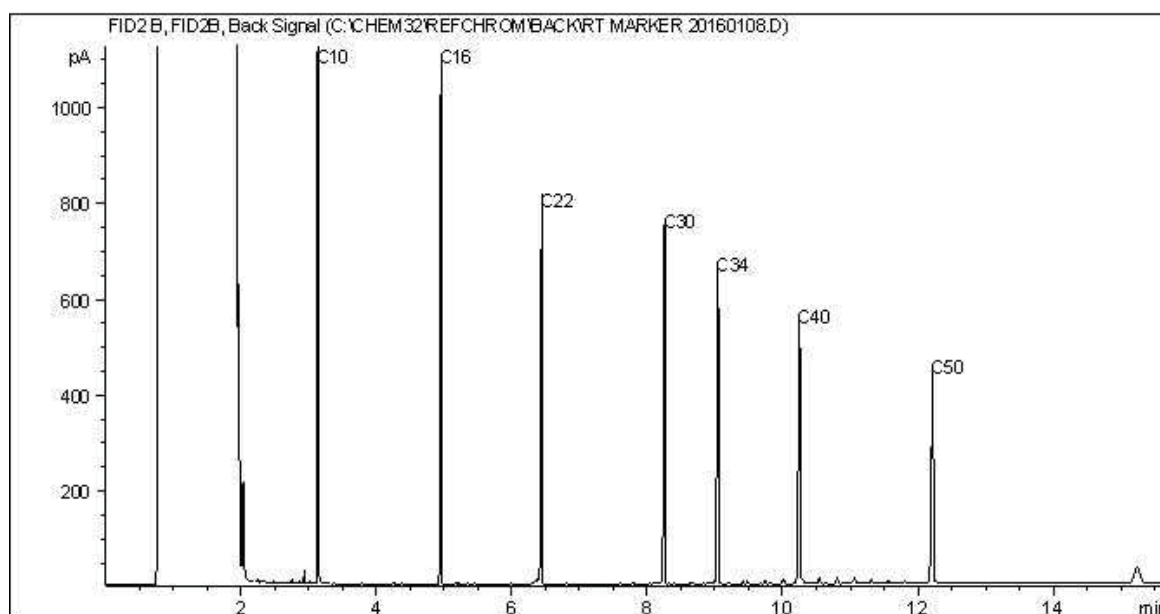
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Instrument: 7890B



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
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Page 1 of 1

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Northrim Mine

Your Project #: 234.01016.00000
Site#: NORTH RIM
Site Location: NORTH RIM
Your C.O.C. #: 504160-02-01, 504465-02-01

Attention:Katrina Nokleby

SLR CONSULTING (CANADA) LTD
#200 - 1620 WEST 8TH AVENUE
VANCOUVER, BC
Canada V6J 1V4

Report Date: 2017/04/10
Report #: R2367575
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B677964

Received: 2016/09/07, 08:40

Sample Matrix: Water
Samples Received: 12

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO ₃ ,HCO ₃ ,OH	12	N/A	2016/09/10	AB SOP-00005	SM 22 2320 B m
BTEX/F1 in Water by HS GC/MS/FID	9	N/A	2016/09/12	AB SOP-00039	CCME CWS/EPA 8260c m
Chloride by Automated Colourimetry	5	N/A	2016/09/10	AB SOP-00020	SM 22 4500-Cl G m
Chloride by Automated Colourimetry	7	N/A	2016/09/12	AB SOP-00020	SM 22 4500-Cl G m
Total Hexavalent Chromium	1	N/A	2016/09/14	AB SOP-00063	SM 22 3500-Cr B m
Carbon (DOC) (2)	12	N/A	2016/09/14	EENVSOP-00060	MMCW 119 1996 m
Conductivity @25C	12	N/A	2016/09/10	AB SOP-00005	SM 22 2510 B m
CCME Hydrocarbons (F2-F4 in water) (3)	9	2016/09/11	2016/09/11	AB SOP-00037 / AB SOP-00040	CCME PHC-CWS m
Hardness Total (calculated as CaCO ₃) (1)	12	N/A	2016/09/15	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO ₃) (1)	5	N/A	2016/09/14	BBY WI-00033	Auto Calc
Mercury (Dissolved) by CVAf (1)	5	N/A	2016/09/14	BBY7SOP-00015	BCMOE BCLM Oct2013 m
Mercury (Total) by CVAf (1)	12	2016/09/14	2016/09/14	BBY7SOP-00015	BCMOE BCLM Oct2013 m
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (1)	5	N/A	2016/09/14	BBY7SOP-00002	EPA 6020A R1 m
Elements by CRC ICPMS (dissolved) (1)	5	N/A	2016/09/14	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (1)	12	2016/09/09	2016/09/15	BBY7SOP-00002	EPA 6020A R1 m
Elements by CRC ICPMS (total) (1)	6	2016/09/14	2016/09/14	BBY7SOP-00003,	BCLM2005,EPA6020bR2m
Elements by CRC ICPMS (total) (1)	6	2016/09/14	2016/09/15	BBY7SOP-00003,	BCLM2005,EPA6020bR2m
Ammonia-N (Total)	12	N/A	2016/09/12	AB SOP-00007	EPA 350.1 R2.0 m
Nitrate and Nitrite	12	N/A	2016/09/12	AB WI-00065	Auto Calc
Nitrate + Nitrite-N (calculated)	12	N/A	2016/09/12	AB WI-00065	Auto Calc
Nitrogen, (Nitrite, Nitrate) by IC (4)	12	N/A	2016/09/11	AB SOP-00023	SM 22 4110 B m
Filter and HNO ₃ Preserve for Metals (1)	5	N/A	2016/09/14	BBY7 WI-00004	BCMOE Reqs 08/14
pH @25°C (5)	12	N/A	2016/09/10	AB SOP-00005	SM 22 4500 H+ B m
Orthophosphate by Konelab (4)	12	N/A	2016/09/10	AB SOP-00025	SM 22 4500-P A,F m
Sulphate by Automated Colourimetry	5	N/A	2016/09/10	AB SOP-00018	SM 22 4500-SO ₄ E m
Sulphate by Automated Colourimetry	7	N/A	2016/09/12	AB SOP-00018	SM 22 4500-SO ₄ E m
Total Dissolved Solids (Filt. Residue)	12	2016/09/10	2016/09/12	AB SOP-00065	SM 22 2540 C m
Phosphorus -P (Total, Dissolved)	12	2016/09/13	2016/09/14	AB SOP-00024	SM 22 4500-P A,B,F m
Total Phosphorus	12	2016/09/13	2016/09/14	AB SOP-00024	SM 22 4500-P A,B,F m

Your Project #: 234.01016.00000
Site#: NORTH RIM
Site Location: NORTH RIM
Your C.O.C. #: 504160-02-01, 504465-02-01

Attention:Katrina Nokleby

SLR CONSULTING (CANADA) LTD
#200 - 1620 WEST 8TH AVENUE
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Report Date: 2017/04/10
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CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B677964

Received: 2016/09/07, 08:40

Sample Matrix: Water
Samples Received: 12

Analyses	Date		Laboratory Method	Analytical Method
	Quantity	Extracted	Analyzed	
Total Suspended Solids (NFR)	12	2016/09/10	2016/09/13 AB SOP-00061	SM 22 2540 D m
Turbidity (4)	12	N/A	2016/09/12 EENV SOP-00066	SM 22 2130 B m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

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

Results relate to samples tested.

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

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

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

(1) This test was performed by Maxxam Vancouver

(2) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: Whenever applicable, Dissolved > Total for any parameter that falls within method uncertainty for duplicates is likely equivalent. If RPD is >20% samples were reanalyzed and confirmed.

(3) Silica gel clean up employed.

(4) Analysis completed within 48h after laboratory receipt to a maximum of five days from sampling is satisfactory for compliance purposes.

(5) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Maxxam endeavours to analyze samples as soon as possible after receipt.

Your Project #: 234.01016.00000
Site#: NORTH RIM
Site Location: NORTH RIM
Your C.O.C. #: 504160-02-01, 504465-02-01

Attention:Katrina Nokleby

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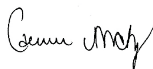
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CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B677964

Received: 2016/09/07, 08:40

Encryption Key



Carmen McKay
Project Manager
10 Apr 2017 11:28:58

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Carmen McKay, Project Manager

Email: CMcKay@maxxam.ca

Phone# (403)219-3683

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B677964
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: NORTH RIM
Sampler Initials: DK, DP

AT1 BTEX AND F1-F4 IN WATER (WATER)

Maxxam ID		PL9519	PL9520	PL9521	PL9524	PL9525	PL9526		
Sampling Date		2016/09/05 11:36	2016/09/05 11:07	2016/09/05 14:07	2016/09/05 14:30	2016/09/05 13:10	2016/09/05 13:10		
COC Number		504160-02-01	504160-02-01	504160-02-01	504160-02-01	504160-02-01	504160-02-01		
	UNITS	NO-2	NO-11-2M	NO-1	DUP F	DUP 9	NO-6	RDL	QC Batch
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	8393923
F3 (C16-C34 Hydrocarbons)	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	8393923
F4 (C34-C50 Hydrocarbons)	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	8393923
Reached Baseline at C50	mg/L	Yes	Yes	Yes	Yes	Yes	Yes		8393923
Volatiles									
Benzene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	8394426
Toluene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	8394426
Ethylbenzene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	8394426
m & p-Xylene	ug/L	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80	0.80	8394426
o-Xylene	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	8394426
Xylenes (Total)	ug/L	<0.80	<0.80	<0.80	<0.80	<0.80	<0.80	0.80	8394426
F1 (C6-C10) - BTEX	ug/L	<100	<100	<100	<100	<100	<100	100	8394426
F1 (C6-C10)	ug/L	<100	<100	<100	<100	<100	<100	100	8394426
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	97	99	95	96	97	96		8394426
4-Bromofluorobenzene (sur.)	%	100	102	101	100	100	101		8394426
D4-1,2-Dichloroethane (sur.)	%	111	116	113	114	113	114		8394426
O-TERPHENYL (sur.)	%	92	91	91	95	93	92		8393923
RDL = Reportable Detection Limit									

Maxxam Job #: B677964
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: NORTH RIM
Sampler Initials: DK, DP

AT1 BTEX AND F1-F4 IN WATER (WATER)

Maxxam ID		PL9527	PL9528	PL9541		
Sampling Date		2016/09/05 13:47	2016/09/05 10:31	2016/09/05 12:07		
COC Number		504160-02-01	504160-02-01	504465-02-01		
	UNITS	NO-9	NO-3	NO-4	RDL	QC Batch
Ext. Pet. Hydrocarbon						
F2 (C10-C16 Hydrocarbons)	mg/L	0.15	<0.10	0.15	0.10	8393923
F3 (C16-C34 Hydrocarbons)	mg/L	1.1	<0.20	15	0.20	8393923
F4 (C34-C50 Hydrocarbons)	mg/L	0.27	<0.20	12	0.20	8393923
Reached Baseline at C50	mg/L	Yes	Yes	Yes		8393923
Volatiles						
Benzene	ug/L	<0.40	<0.40	<0.40	0.40	8394426
Toluene	ug/L	<0.40	<0.40	<0.40	0.40	8394426
Ethylbenzene	ug/L	<0.40	<0.40	<0.40	0.40	8394426
m & p-Xylene	ug/L	<0.80	<0.80	<0.80	0.80	8394426
o-Xylene	ug/L	<0.40	<0.40	<0.40	0.40	8394426
Xylenes (Total)	ug/L	<0.80	<0.80	<0.80	0.80	8394426
F1 (C6-C10) - BTEX	ug/L	<100	<100	<100	100	8394426
F1 (C6-C10)	ug/L	<100	<100	<100	100	8394426
Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	%	96	98	98		8394426
4-Bromofluorobenzene (sur.)	%	100	101	100		8394426
D4-1,2-Dichloroethane (sur.)	%	115	114	111		8394426
O-TERPHENYL (sur.)	%	94	95	98		8393923
RDL = Reportable Detection Limit						

Maxxam Job #: B677964
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: NORTH RIM
Sampler Initials: DK, DP

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		PL9519		PL9520	PL9521	PL9522		
Sampling Date		2016/09/05 11:36		2016/09/05 11:07	2016/09/05 14:07	2016/09/05 10:51		
COC Number		504160-02-01		504160-02-01	504160-02-01	504160-02-01		
	UNITS	NO-2	QC Batch	NO-11-2M	NO-1	NO-7-2M	RDL	QC Batch
Calculated Parameters								
Filter and HNO3 Preservation	N/A	FIELD	ONSITE	FIELD	FIELD			ONSITE
Dissolved Nitrate (NO3)	mg/L	<0.044	8393317	<0.044	0.075	<0.044	0.044	8393317
Nitrate plus Nitrite (N)	mg/L	<0.020	8393318	<0.020	<0.020	<0.020	0.020	8393318
Dissolved Nitrite (NO2)	mg/L	<0.033	8393317	<0.033	<0.033	<0.033	0.033	8393317
Misc. Inorganics								
Conductivity	uS/cm	410	8393650	140	190	150	1.0	8393656
Dissolved Organic Carbon (C)	mg/L	13	8397304	14	5.6	15	0.50	8397304
pH	pH	8.07	8393648	7.55	7.77	7.56	N/A	8393652
Total Dissolved Solids	mg/L	240	8393583	96	110	110	10	8393583
Total Suspended Solids	mg/L	3.3	8393556	2.0	21	2.0	1.0	8393556
Anions								
Alkalinity (PP as CaCO3)	mg/L	<0.50	8393649	<0.50	<0.50	<0.50	0.50	8393655
Alkalinity (Total as CaCO3)	mg/L	190	8393649	59	61	62	0.50	8393655
Bicarbonate (HCO3)	mg/L	230	8393649	72	74	75	0.50	8393655
Carbonate (CO3)	mg/L	<0.50	8393649	<0.50	<0.50	<0.50	0.50	8393655
Hydroxide (OH)	mg/L	<0.50	8393649	<0.50	<0.50	<0.50	0.50	8393655
Dissolved Sulphate (SO4)	mg/L	22	8393747	10	31	10	1.0	8394052
Dissolved Chloride (Cl)	mg/L	1.2	8393743	<1.0	2.1	<1.0	1.0	8394049
Nutrients								
Total Ammonia (N)	mg/L	0.043 (1)	8395093	0.028 (1)	0.036 (1)	0.037 (1)	0.0067	8395093
Orthophosphate (P)	mg/L	<0.0030	8393703	<0.0030	0.0070	<0.0030	0.0030	8393703
Dissolved Phosphorus (P)	mg/L	0.0040	8396043	0.0040	0.0050	0.0030	0.0030	8396043
Total Phosphorus (P)	mg/L	0.015	8396091	0.0060	0.033	0.0030	0.0030	8396091
Dissolved Nitrite (N)	mg/L	<0.010	8394149	<0.010	<0.010	<0.010	0.010	8394149
Dissolved Nitrate (N)	mg/L	<0.010	8394149	<0.010	0.017	<0.010	0.010	8394149
Physical Properties								
Turbidity	NTU	5.0	8394335	0.66	7.8	1.4	0.10	8394335
RDL = Reportable Detection Limit								
N/A = Not Applicable								
(1) Detection limit for ammonia calculated based on method detection limits (MDL) by client request.								

Maxxam Job #: B677964
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: NORTH RIM
Sampler Initials: DK, DP

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		PL9523		PL9524		PL9525		PL9526		
Sampling Date		2016/09/05 13:27		2016/09/05 14:30		2016/09/05 13:10		2016/09/05 13:10		
COC Number		504160-02-01		504160-02-01		504160-02-01		504160-02-01		
	UNITS	NO-5	QC Batch	DUP F	QC Batch	DUP 9	QC Batch	NO-6	RDL	QC Batch

Calculated Parameters										
Dissolved Nitrate (NO3)	mg/L	<0.044	8393393	<0.044	8393393	<0.044	8393393	0.049	0.044	8393393
Nitrate plus Nitrite (N)	mg/L	<0.020	8393394	<0.020	8393394	<0.020	8393394	<0.020	0.020	8393394
Dissolved Nitrite (NO2)	mg/L	<0.033	8393393	<0.033	8393393	<0.033	8393393	<0.033	0.033	8393393

Misc. Inorganics										
Conductivity	uS/cm	160	8393656	1.0	8393656	160	8393656	170	1.0	8393656
Dissolved Organic Carbon (C)	mg/L	6.2	8397304	0.57	8397304	5.7	8397304	4.4	0.50	8397304
pH	pH	7.78	8393652	4.80	8393652	7.72	8393652	7.64	N/A	8393652
Total Dissolved Solids	mg/L	68	8393812	<10	8393812	76	8393812	80	10	8393812
Total Suspended Solids	mg/L	<1.0	8393556	<1.0	8393556	4.7	8393556	4.0	1.0	8393556

Anions										
Alkalinity (PP as CaCO3)	mg/L	<0.50	8393655	<0.50	8393655	<0.50	8393655	<0.50	0.50	8393655
Alkalinity (Total as CaCO3)	mg/L	56	8393655	<0.50	8393655	58	8393655	68	0.50	8393655
Bicarbonate (HCO3)	mg/L	68	8393655	<0.50	8393655	71	8393655	83	0.50	8393655
Carbonate (CO3)	mg/L	<0.50	8393655	<0.50	8393655	<0.50	8393655	<0.50	0.50	8393655
Hydroxide (OH)	mg/L	<0.50	8393655	<0.50	8393655	<0.50	8393655	<0.50	0.50	8393655
Dissolved Sulphate (SO4)	mg/L	17	8394052	<1.0	8394052	16	8394052	15	1.0	8393765
Dissolved Chloride (Cl)	mg/L	2.1	8394049	<1.0	8394049	2.3	8394049	2.6	1.0	8393758

Metals										
Total Hex. Chromium (Cr 6+)	mg/L		8396904	<0.0010	8396904		8396904		0.0010	

Nutrients										
Total Ammonia (N)	mg/L	0.026 (1)	8395093	0.023 (1)	8395093	0.026 (1)	8395093	0.89 (1)	0.0067	8395093
Orthophosphate (P)	mg/L	<0.0030	8393703	<0.0030	8393703	<0.0030	8393703	<0.0030	0.0030	8393703
Dissolved Phosphorus (P)	mg/L	<0.0030	8396069	<0.0030	8396043	<0.0030	8396069	<0.0030	0.0030	8396069
Total Phosphorus (P)	mg/L	<0.0030	8396091	<0.0030	8396091	0.0050	8396091	0.0060	0.0030	8396141
Dissolved Nitrite (N)	mg/L	<0.010	8394155	<0.010	8394155	<0.010	8394155	<0.010	0.010	8394155
Dissolved Nitrate (N)	mg/L	<0.010	8394155	<0.010	8394155	<0.010	8394155	0.011	0.010	8394155

Physical Properties										
Turbidity	NTU	0.44	8394335	0.12	8394335	0.74	8394335	0.61	0.10	8394335

RDL = Reportable Detection Limit

N/A = Not Applicable

(1) Detection limit for ammonia calculated based on method detection limits (MDL) by client request.

Maxxam Job #: B677964
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: NORTH RIM
Sampler Initials: DK, DP

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		PL9527	PL9528		PL9540		PL9541		
Sampling Date		2016/09/05 13:47	2016/09/05 10:31				2016/09/05 12:07		
COC Number		504160-02-01	504160-02-01		504465-02-01		504465-02-01		
	UNITS	NO-9	NO-3	QC Batch	TRIP BLANK	QC Batch	NO-4	RDL	QC Batch
Calculated Parameters									
Filter and HNO ₃ Preservation	N/A		FIELD	ONSITE		ONSITE	FIELD		ONSITE
Dissolved Nitrate (NO ₃)	mg/L	0.39	0.068	8393393	<0.044	8393393	<0.044	0.044	8393393
Nitrate plus Nitrite (N)	mg/L	0.087	<0.020	8393394	<0.020	8393394	<0.020	0.020	8393394
Dissolved Nitrite (NO ₂)	mg/L	<0.033	<0.033	8393393	<0.033	8393393	<0.033	0.033	8393393
Misc. Inorganics									
Conductivity	uS/cm	460	150	8393656	<1.0	8393656	310	1.0	8393656
Dissolved Organic Carbon (C)	mg/L	7.7	14	8397304	<0.50	8397304	13	0.50	8397504
pH	pH	7.71	7.59	8393652	4.93	8393652	7.35	N/A	8393652
Total Dissolved Solids	mg/L	310	84	8393812	<10	8393581	170	10	8393812
Total Suspended Solids	mg/L	25	1.3	8393556	<1.0	8393553	6.0	1.0	8393556
Anions									
Alkalinity (PP as CaCO ₃)	mg/L	<0.50	<0.50	8393655	<0.50	8393655	<0.50	0.50	8393655
Alkalinity (Total as CaCO ₃)	mg/L	100	60	8393655	<0.50	8393655	160	0.50	8393655
Bicarbonate (HCO ₃)	mg/L	120	74	8393655	<0.50	8393655	200	0.50	8393655
Carbonate (CO ₃)	mg/L	<0.50	<0.50	8393655	<0.50	8393655	<0.50	0.50	8393655
Hydroxide (OH)	mg/L	<0.50	<0.50	8393655	<0.50	8393655	<0.50	0.50	8393655
Dissolved Sulphate (SO ₄)	mg/L	130	8.8	8393765	<1.0	8393765	<1.0	1.0	8393765
Dissolved Chloride (Cl)	mg/L	3.7	1.0	8393758	<1.0	8393758	<1.0	1.0	8393758
Nutrients									
Total Ammonia (N)	mg/L	0.035 (1)	0.031 (1)	8395093	0.019 (1)	8395102	0.079 (1)	0.0067	8395102
Orthophosphate (P)	mg/L	0.044	<0.0030	8393703	<0.0030	8393703	0.0050	0.0030	8393703
Dissolved Phosphorus (P)	mg/L	0.0040	0.0030	8396069	<0.0030	8396069	<0.0030	0.0030	8396069
Total Phosphorus (P)	mg/L	0.0090	0.0060	8396141	0.0030	8396141	0.019	0.0030	8396141
Dissolved Nitrite (N)	mg/L	<0.010	<0.010	8394155	<0.010	8394155	<0.010	0.010	8394155
Dissolved Nitrate (N)	mg/L	0.087	0.015	8394155	<0.010	8394155	<0.010	0.010	8394155
Physical Properties									
Turbidity	NTU	1.1	0.63	8394335	<0.10	8394335	1.4	0.10	8394335
RDL = Reportable Detection Limit									
N/A = Not Applicable									
(1) Detection limit for ammonia calculated based on method detection limits (MDL) by client request.									

Maxxam Job #: B677964
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: NORTH RIM
Sampler Initials: DK, DP

CSR/CCME DISS. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL9519		PL9520		PL9521	PL9528		
Sampling Date		2016/09/05 11:36		2016/09/05 11:07		2016/09/05 14:07	2016/09/05 10:31		
COC Number		504160-02-01		504160-02-01		504160-02-01	504160-02-01		
	UNITS	NO-2	QC Batch	NO-11-2M	QC Batch	NO-1	NO-3	RDL	QC Batch
Misc. Inorganics									
Dissolved Hardness (CaCO ₃)	mg/L	94.2	8392954	72.8	8392954	85.8	69.3	0.50	8392954
Elements									
Dissolved Mercury (Hg)	ug/L	<0.010	8397844	<0.010	8397844	<0.010	<0.010	0.010	8397844
Dissolved Metals by ICPMS									
Dissolved Aluminum (Al)	ug/L	14.6	8397229	16.8	8397229	8.4	18.4	3.0	8397229
Dissolved Antimony (Sb)	ug/L	<0.50	8397229	<0.50	8397229	0.73	<0.50	0.50	8397229
Dissolved Arsenic (As)	ug/L	7.28	8397229	7.38	8397229	56.6	8.13	0.10	8397229
Dissolved Barium (Ba)	ug/L	14.5	8397229	8.9	8400311	11.9	8.7	1.0	8397229
Dissolved Beryllium (Be)	ug/L	<0.10	8397229	<0.10	8397229	<0.10	<0.10	0.10	8397229
Dissolved Bismuth (Bi)	ug/L	<1.0	8397229	<1.0	8397229	<1.0	<1.0	1.0	8397229
Dissolved Boron (B)	ug/L	337	8397229	<50	8397229	<50	<50	50	8397229
Dissolved Cadmium (Cd)	ug/L	0.024	8397229	<0.010	8397229	0.077	<0.010	0.010	8397229
Dissolved Chromium (Cr)	ug/L	<1.0	8397229	<1.0	8397229	<1.0	<1.0	1.0	8397229
Dissolved Cobalt (Co)	ug/L	<0.50	8397229	<0.50	8397229	12.0	<0.50	0.50	8397229
Dissolved Copper (Cu)	ug/L	14.1	8397229	2.54	8397229	3.07	2.00	0.20	8397229
Dissolved Iron (Fe)	ug/L	187	8397229	135	8400311	7.9	40.3	5.0	8397229
Dissolved Lead (Pb)	ug/L	1.50	8397229	0.43	8397229	1.54	0.35	0.20	8397229
Dissolved Lithium (Li)	ug/L	<5.0	8397229	<5.0	8397229	<5.0	<5.0	5.0	8397229
Dissolved Manganese (Mn)	ug/L	32.1	8397229	27.5	8397229	1.5	14.9	1.0	8397229
Dissolved Molybdenum (Mo)	ug/L	3.0	8397229	<1.0	8397229	2.8	<1.0	1.0	8397229
Dissolved Nickel (Ni)	ug/L	1.1	8397229	<1.0	8397229	7.8	<1.0	1.0	8397229
Dissolved Selenium (Se)	ug/L	<0.10	8397229	<0.10	8397229	<0.10	<0.10	0.10	8397229
Dissolved Silicon (Si)	ug/L	635	8397229	1050	8397229	898	857	100	8397229
Dissolved Silver (Ag)	ug/L	0.317	8397229	<0.020	8397229	<0.020	<0.020	0.020	8397229
Dissolved Strontium (Sr)	ug/L	34.3	8397229	26.8	8397229	61.8	26.1	1.0	8397229
Dissolved Thallium (Tl)	ug/L	<0.050	8397229	<0.050	8397229	<0.050	<0.050	0.050	8397229
Dissolved Tin (Sn)	ug/L	<5.0	8397229	<5.0	8397229	<5.0	<5.0	5.0	8397229
Dissolved Titanium (Ti)	ug/L	<5.0	8397229	<5.0	8397229	<5.0	<5.0	5.0	8397229
Dissolved Uranium (U)	ug/L	0.49	8397229	0.18	8397229	1.88	0.18	0.10	8397229
Dissolved Vanadium (V)	ug/L	<5.0	8397229	<5.0	8397229	<5.0	<5.0	5.0	8397229
Dissolved Zinc (Zn)	ug/L	17.9	8397229	7.9	8397229	37.6	<5.0	5.0	8397229
RDL = Reportable Detection Limit									

Maxxam Job #: B677964
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: NORTH RIM
Sampler Initials: DK, DP

CSR/CCME DISS. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL9519		PL9520		PL9521	PL9528		
Sampling Date		2016/09/05 11:36		2016/09/05 11:07		2016/09/05 14:07	2016/09/05 10:31		
COC Number		504160-02-01		504160-02-01		504160-02-01	504160-02-01		
	UNITS	NO-2	QC Batch	NO-11-2M	QC Batch	NO-1	NO-3	RDL	QC Batch
Dissolved Zirconium (Zr)	ug/L	<0.50	8397229	<0.50	8397229	<0.50	<0.50	0.50	8397229
Dissolved Calcium (Ca)	mg/L	27.2	8392313	20.8	8392313	21.1	20.1	0.050	8392313
Dissolved Magnesium (Mg)	mg/L	6.38	8392313	5.08	8392313	8.04	4.61	0.050	8392313
Dissolved Potassium (K)	mg/L	2.32	8392313	0.743	8392313	1.14	0.711	0.050	8392313
Dissolved Sodium (Na)	mg/L	58.0	8392313	1.76	8392313	2.85	1.57	0.050	8392313
Dissolved Sulphur (S)	mg/L	8.0	8392313	<3.0	8392313	11.0	3.5	3.0	8392313
RDL = Reportable Detection Limit									

Maxxam Job #: B677964
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: NORTH RIM
Sampler Initials: DK, DP

CSR/CCME DISS. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL9541		
Sampling Date		2016/09/05 12:07		
COC Number		504465-02-01		
	UNITS	NO-4	RDL	QC Batch
Misc. Inorganics				
Dissolved Hardness (CaCO ₃)	mg/L	169	0.50	8392954
Elements				
Dissolved Mercury (Hg)	ug/L	<0.010	0.010	8397844
Dissolved Metals by ICPMS				
Dissolved Aluminum (Al)	ug/L	14.4	3.0	8397229
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	8397229
Dissolved Arsenic (As)	ug/L	18.2	0.10	8397229
Dissolved Barium (Ba)	ug/L	22.3	1.0	8397229
Dissolved Beryllium (Be)	ug/L	<0.10	0.10	8397229
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	8397229
Dissolved Boron (B)	ug/L	<50	50	8397229
Dissolved Cadmium (Cd)	ug/L	<0.010	0.010	8397229
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	8397229
Dissolved Cobalt (Co)	ug/L	3.87	0.50	8397229
Dissolved Copper (Cu)	ug/L	0.37	0.20	8397229
Dissolved Iron (Fe)	ug/L	1500	5.0	8397229
Dissolved Lead (Pb)	ug/L	0.39	0.20	8397229
Dissolved Lithium (Li)	ug/L	<5.0	5.0	8397229
Dissolved Manganese (Mn)	ug/L	337	1.0	8397229
Dissolved Molybdenum (Mo)	ug/L	<1.0	1.0	8397229
Dissolved Nickel (Ni)	ug/L	2.3	1.0	8397229
Dissolved Selenium (Se)	ug/L	<0.10	0.10	8397229
Dissolved Silicon (Si)	ug/L	3200	100	8397229
Dissolved Silver (Ag)	ug/L	<0.020	0.020	8397229
Dissolved Strontium (Sr)	ug/L	56.0	1.0	8397229
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	8397229
Dissolved Tin (Sn)	ug/L	<5.0	5.0	8397229
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	8397229
Dissolved Uranium (U)	ug/L	0.15	0.10	8397229
Dissolved Vanadium (V)	ug/L	<5.0	5.0	8397229
Dissolved Zinc (Zn)	ug/L	6.8	5.0	8397229
RDL = Reportable Detection Limit				

Maxxam Job #: B677964
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: NORTH RIM
Sampler Initials: DK, DP

CSR/CCME DISS. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL9541		
Sampling Date		2016/09/05 12:07		
COC Number		504465-02-01		
	UNITS	NO-4	RDL	QC Batch
Dissolved Zirconium (Zr)	ug/L	<0.50	0.50	8397229
Dissolved Calcium (Ca)	mg/L	50.4	0.050	8392313
Dissolved Magnesium (Mg)	mg/L	10.5	0.050	8392313
Dissolved Potassium (K)	mg/L	0.945	0.050	8392313
Dissolved Sodium (Na)	mg/L	3.57	0.050	8392313
Dissolved Sulphur (S)	mg/L	<3.0	3.0	8392313
RDL = Reportable Detection Limit				

Maxxam Job #: B677964
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: NORTH RIM
Sampler Initials: DK, DP

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL9519		PL9520	PL9521		PL9522	PL9523		
Sampling Date		2016/09/05 11:36		2016/09/05 11:07	2016/09/05 14:07		2016/09/05 10:51	2016/09/05 13:27		
COC Number		504160-02-01		504160-02-01	504160-02-01		504160-02-01	504160-02-01		
	UNITS	NO-2	QC Batch	NO-11-2M	NO-1	QC Batch	NO-7-2M	NO-5	RDL	QC Batch
Calculated Parameters										
Total Hardness (CaCO ₃)	mg/L	95.2	8392870	72.7	90.4	8392870	72.6	72.9	0.50	8392870
Elements										
Total Mercury (Hg)	ug/L	<0.010	8397832	<0.010	<0.010	8397832	<0.010	<0.010	0.010	8397832
Total Metals by ICPMS										
Total Aluminum (Al)	ug/L	37.7	8397651	23.6	134	8397573	33.1	17.4	3.0	8397762
Total Antimony (Sb)	ug/L	<0.50	8397651	<0.50	0.69	8397573	<0.50	<0.50	0.50	8397762
Total Arsenic (As)	ug/L	17.1	8397651	8.19	53.1	8397573	8.34	0.37	0.10	8397762
Total Barium (Ba)	ug/L	14.7	8397651	7.5	13.1	8397573	8.0	10.8	1.0	8397762
Total Beryllium (Be)	ug/L	<0.10	8397651	<0.10	<0.10	8397573	<0.10	<0.10	0.10	8397762
Total Bismuth (Bi)	ug/L	<1.0	8397651	<1.0	<1.0	8397573	<1.0	<1.0	1.0	8397762
Total Boron (B)	ug/L	313	8397651	<50	<50	8397573	<50	<50	50	8397762
Total Cadmium (Cd)	ug/L	0.084	8397651	<0.010	0.074	8397573	<0.010	<0.010	0.010	8397762
Total Chromium (Cr)	ug/L	<1.0	8397651	<1.0	<1.0	8397573	<1.0	<1.0	1.0	8397762
Total Cobalt (Co)	ug/L	0.66	8397651	<0.50	12.4	8397573	<0.50	<0.50	0.50	8397762
Total Copper (Cu)	ug/L	42.0	8397651	2.36	5.07	8397573	2.44	2.58	0.50	8397762
Total Iron (Fe)	ug/L	1190	8397651	65	178	8397573	76	22	10	8397762
Total Lead (Pb)	ug/L	12.0	8397651	0.74	3.44	8397573	1.54	2.16	0.20	8397762
Total Lithium (Li)	ug/L	<5.0	8397651	<5.0	<5.0	8397573	<5.0	<5.0	5.0	8397762
Total Manganese (Mn)	ug/L	36.1	8397651	24.8	11.6	8397573	22.4	1.8	1.0	8397762
Total Molybdenum (Mo)	ug/L	2.6	8397651	<1.0	2.6	8397573	<1.0	<1.0	1.0	8397762
Total Nickel (Ni)	ug/L	1.1	8397651	<1.0	8.6	8397573	<1.0	<1.0	1.0	8397762
Total Selenium (Se)	ug/L	<0.10	8397651	<0.10	<0.10	8397573	<0.10	<0.10	0.10	8397762
Total Silicon (Si)	ug/L	668	8397651	863	1030	8397573	844	934	100	8397762
Total Silver (Ag)	ug/L	1.71	8397651	<0.020	0.025	8397573	<0.020	<0.020	0.020	8397762
Total Strontium (Sr)	ug/L	32.1	8397651	26.1	62.7	8397573	26.5	59.7	1.0	8397762
Total Thallium (Tl)	ug/L	<0.050	8397651	<0.050	<0.050	8397573	<0.050	<0.050	0.050	8397762
Total Tin (Sn)	ug/L	<5.0	8397651	<5.0	<5.0	8397573	<5.0	<5.0	5.0	8397762
Total Titanium (Ti)	ug/L	<5.0	8397651	<5.0	7.9	8397573	<5.0	<5.0	5.0	8397762
Total Uranium (U)	ug/L	0.44	8397651	0.19	1.81	8397573	0.20	0.55	0.10	8397762
Total Vanadium (V)	ug/L	<5.0	8397651	<5.0	<5.0	8397573	<5.0	<5.0	5.0	8397762
Total Zinc (Zn)	ug/L	48.3	8397651	<5.0	47.3	8397573	<5.0	<5.0	5.0	8397762
RDL = Reportable Detection Limit										

Maxxam Job #: B677964
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: NORTH RIM
Sampler Initials: DK, DP

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL9519		PL9520	PL9521		PL9522	PL9523		
Sampling Date		2016/09/05 11:36		2016/09/05 11:07	2016/09/05 14:07		2016/09/05 10:51	2016/09/05 13:27		
COC Number		504160-02-01		504160-02-01	504160-02-01		504160-02-01	504160-02-01		
	UNITS	NO-2	QC Batch	NO-11-2M	NO-1	QC Batch	NO-7-2M	NO-5	RDL	QC Batch
Total Zirconium (Zr)	ug/L	<0.50	8397651	<0.50	<0.50	8397573	<0.50	<0.50	0.50	8397762
Total Calcium (Ca)	mg/L	28.0	8392257	21.4	22.7	8392257	21.5	17.9	0.050	8392257
Total Magnesium (Mg)	mg/L	6.13	8392257	4.69	8.17	8392257	4.57	6.87	0.050	8392257
Total Potassium (K)	mg/L	2.06	8392257	0.748	1.32	8392257	0.740	1.07	0.050	8392257
Total Sodium (Na)	mg/L	53.2	8392257	1.55	2.79	8392257	1.57	2.57	0.050	8392257
Total Sulphur (S)	mg/L	7.8	8392257	3.3	10.0	8392257	3.4	5.4	3.0	8392257
RDL = Reportable Detection Limit										

Maxxam Job #: B677964
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: NORTH RIM
Sampler Initials: DK, DP

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL9524	PL9525		PL9526		PL9527		
Sampling Date		2016/09/05 14:30	2016/09/05 13:10		2016/09/05 13:10		2016/09/05 13:47		
COC Number		504160-02-01	504160-02-01		504160-02-01		504160-02-01		
	UNITS	DUP F	DUP 9	QC Batch	NO-6	QC Batch	NO-9	RDL	QC Batch
Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L	<0.50	76.8	8392870	68.9	8392870	214	0.50	8392870
Elements									
Total Mercury (Hg)	ug/L	<0.010	<0.010	8397832	<0.010	8397832	<0.010	0.010	8397832
Total Metals by ICPMS									
Total Aluminum (Al)	ug/L	<3.0	30.6	8397762	55.1 (1)	8397651	270	3.0	8397762
Total Antimony (Sb)	ug/L	<0.50	<0.50	8397762	<0.50	8397651	1.09	0.50	8397762
Total Arsenic (As)	ug/L	<0.10	2.22	8397762	1.55	8397651	242	0.10	8397762
Total Barium (Ba)	ug/L	<1.0	12.2	8397762	11.8	8397651	22.1	1.0	8397762
Total Beryllium (Be)	ug/L	<0.10	<0.10	8397762	<0.10	8397651	<0.10	0.10	8397762
Total Bismuth (Bi)	ug/L	<1.0	<1.0	8397762	<1.0	8397651	2.3	1.0	8397762
Total Boron (B)	ug/L	<50	<50	8397762	<50	8397651	64	50	8397762
Total Cadmium (Cd)	ug/L	<0.010	0.011	8397762	0.012	8397651	0.691	0.010	8397762
Total Chromium (Cr)	ug/L	<1.0	<1.0	8397762	<1.0	8397651	<1.0	1.0	8397762
Total Cobalt (Co)	ug/L	<0.50	0.64	8397762	<0.50	8397651	26.4	0.50	8397762
Total Copper (Cu)	ug/L	<0.50	1.62	8397762	1.80	8397651	13.4	0.50	8397762
Total Iron (Fe)	ug/L	35	257	8397762	199	8397651	839	10	8397762
Total Lead (Pb)	ug/L	<0.20	1.26	8397762	1.07	8397651	87.3	0.20	8397762
Total Lithium (Li)	ug/L	<5.0	<5.0	8397762	<5.0	8397651	<5.0	5.0	8397762
Total Manganese (Mn)	ug/L	<1.0	34.3	8397762	23.6	8397651	346	1.0	8397762
Total Molybdenum (Mo)	ug/L	<1.0	<1.0	8397762	<1.0	8397651	15.4	1.0	8397762
Total Nickel (Ni)	ug/L	<1.0	<1.0	8397762	<1.0	8397651	17.4	1.0	8397762
Total Selenium (Se)	ug/L	<0.10	<0.10	8397762	<0.10	8397651	0.11	0.10	8397762
Total Silicon (Si)	ug/L	<100	1020	8397762	877	8397651	4830	100	8397762
Total Silver (Ag)	ug/L	<0.020	<0.020	8397762	<0.020	8397651	0.173	0.020	8397762
Total Strontium (Sr)	ug/L	<1.0	58.6	8397762	51.3	8397651	167	1.0	8397762
Total Thallium (Tl)	ug/L	<0.050	<0.050	8397762	<0.050	8397651	<0.050	0.050	8397762
Total Tin (Sn)	ug/L	<5.0	<5.0	8397762	<5.0	8397651	<5.0	5.0	8397762
Total Titanium (Ti)	ug/L	<5.0	<5.0	8397762	<5.0	8397651	10.1	5.0	8397762
Total Uranium (U)	ug/L	<0.10	0.64	8397762	0.50	8397651	8.42	0.10	8397762
Total Vanadium (V)	ug/L	<5.0	<5.0	8397762	<5.0	8397651	<5.0	5.0	8397762
RDL = Reportable Detection Limit									
(1) Duplicate RPD above control limit - (10% of analytes failure allowed).									

Maxxam Job #: B677964
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: NORTH RIM
Sampler Initials: DK, DP

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL9524	PL9525		PL9526		PL9527		
Sampling Date		2016/09/05 14:30	2016/09/05 13:10		2016/09/05 13:10		2016/09/05 13:47		
COC Number		504160-02-01	504160-02-01		504160-02-01		504160-02-01		
	UNITS	DUP F	DUP 9	QC Batch	NO-6	QC Batch	NO-9	RDL	QC Batch
Total Zinc (Zn)	ug/L	<5.0	<5.0	8397762	13.5	8397651	296	5.0	8397762
Total Zirconium (Zr)	ug/L	<0.50	<0.50	8397762	<0.50	8397651	<0.50	0.50	8397762
Total Calcium (Ca)	mg/L	0.103	18.9	8392257	17.0	8392257	73.6	0.050	8392257
Total Magnesium (Mg)	mg/L	<0.050	7.22	8392257	6.43	8392257	7.47	0.050	8392257
Total Potassium (K)	mg/L	<0.050	1.11	8392257	0.942	8392257	6.64	0.050	8392257
Total Sodium (Na)	mg/L	<0.050	2.66	8392257	2.42	8392257	7.60	0.050	8392257
Total Sulphur (S)	mg/L	<3.0	5.1	8392257	3.7	8392257	42.7	3.0	8392257
RDL = Reportable Detection Limit									

Maxxam Job #: B677964
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: NORTH RIM
Sampler Initials: DK, DP

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL9528		PL9540		PL9541		
Sampling Date		2016/09/05 10:31				2016/09/05 12:07		
COC Number		504160-02-01		504465-02-01		504465-02-01		
	UNITS	NO-3	QC Batch	TRIP BLANK	QC Batch	NO-4	RDL	QC Batch
Calculated Parameters								
Total Hardness (CaCO ₃)	mg/L	70.1	8392870	<0.50	8392870	161	0.50	8392870
Elements								
Total Mercury (Hg)	ug/L	<0.010	8397832	<0.010	8397832	<0.010	0.010	8397837
Total Metals by ICPMS								
Total Aluminum (Al)	ug/L	37.7	8397651	<3.0	8397762	19.1	3.0	8397651
Total Antimony (Sb)	ug/L	<0.50	8397651	<0.50	8397762	<0.50	0.50	8397651
Total Arsenic (As)	ug/L	7.91	8397651	<0.10	8397762	25.4	0.10	8397651
Total Barium (Ba)	ug/L	7.3	8397651	<1.0	8397762	32.9	1.0	8397651
Total Beryllium (Be)	ug/L	<0.10	8397651	<0.10	8397762	<0.10	0.10	8397651
Total Bismuth (Bi)	ug/L	<1.0	8397651	<1.0	8397762	<1.0	1.0	8397651
Total Boron (B)	ug/L	<50	8397651	<50	8397762	<50	50	8397651
Total Cadmium (Cd)	ug/L	0.041	8397651	<0.010	8397762	0.033	0.010	8397651
Total Chromium (Cr)	ug/L	<1.0	8397651	<1.0	8397762	<1.0	1.0	8397651
Total Cobalt (Co)	ug/L	<0.50	8397651	<0.50	8397762	3.77	0.50	8397651
Total Copper (Cu)	ug/L	2.66	8397651	<0.50	8397762	5.22	0.50	8397651
Total Iron (Fe)	ug/L	71	8397651	<10	8397762	2760	10	8397651
Total Lead (Pb)	ug/L	0.69	8397651	<0.20	8397762	13.2	0.20	8397651
Total Lithium (Li)	ug/L	<5.0	8397651	<5.0	8397762	<5.0	5.0	8397651
Total Manganese (Mn)	ug/L	20.1	8397651	<1.0	8397762	341	1.0	8397651
Total Molybdenum (Mo)	ug/L	<1.0	8397651	<1.0	8397762	<1.0	1.0	8397651
Total Nickel (Ni)	ug/L	1.1	8397651	<1.0	8397762	2.8	1.0	8397651
Total Selenium (Se)	ug/L	<0.10	8397651	<0.10	8397762	<0.10	0.10	8397651
Total Silicon (Si)	ug/L	810	8397651	<100	8397762	2920	100	8397651
Total Silver (Ag)	ug/L	<0.020	8397651	<0.020	8397762	0.021	0.020	8397651
Total Strontium (Sr)	ug/L	23.7	8397651	<1.0	8397762	55.5	1.0	8397651
Total Thallium (Tl)	ug/L	<0.050	8397651	<0.050	8397762	<0.050	0.050	8397651
Total Tin (Sn)	ug/L	<5.0	8397651	<5.0	8397762	<5.0	5.0	8397651
Total Titanium (Ti)	ug/L	<5.0	8397651	<5.0	8397762	<5.0	5.0	8397651
Total Uranium (U)	ug/L	0.17	8397651	<0.10	8397762	0.21	0.10	8397651
Total Vanadium (V)	ug/L	<5.0	8397651	<5.0	8397762	<5.0	5.0	8397651
Total Zinc (Zn)	ug/L	9.9	8397651	<5.0	8397762	17.2	5.0	8397651
RDL = Reportable Detection Limit								

Maxxam Job #: B677964
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: NORTH RIM
Sampler Initials: DK, DP

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL9528		PL9540		PL9541		
Sampling Date		2016/09/05 10:31				2016/09/05 12:07		
COC Number		504160-02-01		504465-02-01		504465-02-01		
	UNITS	NO-3	QC Batch	TRIP BLANK	QC Batch	NO-4	RDL	QC Batch
Total Zirconium (Zr)	ug/L	<0.50	8397651	<0.50	8397762	<0.50	0.50	8397651
Total Calcium (Ca)	mg/L	20.2	8392257	0.053	8392257	47.8	0.050	8392257
Total Magnesium (Mg)	mg/L	4.77	8392257	<0.050	8392257	10.2	0.050	8392257
Total Potassium (K)	mg/L	0.756	8392257	<0.050	8392257	0.949	0.050	8392257
Total Sodium (Na)	mg/L	1.68	8392257	<0.050	8392257	3.44	0.050	8392257
Total Sulphur (S)	mg/L	3.1	8392257	<3.0	8392257	<3.0	3.0	8392257
RDL = Reportable Detection Limit								

Maxxam Job #: B677964
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: NORTH RIM
Sampler Initials: DK, DP

GENERAL COMMENTS

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

Package 1	7.0°C
Package 2	3.7°C
Package 3	2.7°C
Package 4	6.0°C
Package 5	4.7°C
Package 6	6.0°C
Package 7	3.3°C
Package 8	3.3°C
Package 9	4.0°C
Package 10	5.3°C
Package 11	5.7°C
Package 12	5.0°C

Report revised to include updated detection limits for Ammonia, per client request 2017/04/10

Sample PL9519 [NO-2] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL9520 [NO-11-2M] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL9521 [NO-1] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL9522 [NO-7-2M] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL9523 [NO-5] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL9524 [DUP F] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL9525 [DUP 9] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL9526 [NO-6] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL9527 [NO-9] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for

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Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL9528 [NO-3] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL9541 [NO-4] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL9520, Elements by CRC ICPMS (dissolved): Test repeated.

Results relate only to the items tested.

Maxxam Job #: B677964
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QUALITY ASSURANCE REPORT

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: NORTH RIM
Sampler Initials: DK, DP

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8393923	O-TERPHENYL (sur.)	2016/09/11	96	60 - 130	103	60 - 130	95	%				
8394426	1,4-Difluorobenzene (sur.)	2016/09/12	93	70 - 130	94	70 - 130	96	%				
8394426	4-Bromofluorobenzene (sur.)	2016/09/12	101	70 - 130	100	70 - 130	100	%				
8394426	D4-1,2-Dichloroethane (sur.)	2016/09/12	115	70 - 130	114	70 - 130	111	%				
8393553	Total Suspended Solids	2016/09/13	98	80 - 120	99	80 - 120	<1.0	mg/L	0	20		
8393556	Total Suspended Solids	2016/09/13	NC	80 - 120	100	80 - 120	<1.0	mg/L	1.6	20		
8393581	Total Dissolved Solids	2016/09/12	100	80 - 120	97	80 - 120	<10	mg/L	NC	20		
8393583	Total Dissolved Solids	2016/09/12	NC	80 - 120	102	80 - 120	<10	mg/L	0.44	20		
8393648	pH	2016/09/10			100	97 - 103			0.18	N/A		
8393649	Alkalinity (PP as CaCO ₃)	2016/09/10					<0.50	mg/L	NC	20		
8393649	Alkalinity (Total as CaCO ₃)	2016/09/10			98	80 - 120	<0.50	mg/L	1.3	20		
8393649	Bicarbonate (HCO ₃)	2016/09/10					<0.50	mg/L	1.3	20		
8393649	Carbonate (CO ₃)	2016/09/10					<0.50	mg/L	NC	20		
8393649	Hydroxide (OH)	2016/09/10					<0.50	mg/L	NC	20		
8393650	Conductivity	2016/09/10			100	90 - 110	<1.0	uS/cm	0	10		
8393652	pH	2016/09/10			100	97 - 103			0.58	N/A		
8393655	Alkalinity (PP as CaCO ₃)	2016/09/10					<0.50	mg/L	NC	20		
8393655	Alkalinity (Total as CaCO ₃)	2016/09/10			100	80 - 120	<0.50	mg/L	4.6	20		
8393655	Bicarbonate (HCO ₃)	2016/09/10					<0.50	mg/L	4.6	20		
8393655	Carbonate (CO ₃)	2016/09/10					<0.50	mg/L	NC	20		
8393655	Hydroxide (OH)	2016/09/10					<0.50	mg/L	NC	20		
8393656	Conductivity	2016/09/10			100	90 - 110	<1.0	uS/cm	1.2	10		
8393703	Orthophosphate (P)	2016/09/10	101	80 - 120	103	80 - 120	<0.0030	mg/L	NC	20		
8393743	Dissolved Chloride (Cl)	2016/09/12	115	80 - 120	104	80 - 120	<1.0	mg/L	8.1	20		
8393747	Dissolved Sulphate (SO ₄)	2016/09/12	NC	80 - 120	107	80 - 120	<1.0	mg/L	0.0030	20		
8393758	Dissolved Chloride (Cl)	2016/09/10	NC	80 - 120	104	80 - 120	<1.0	mg/L	0.035	20		
8393765	Dissolved Sulphate (SO ₄)	2016/09/10	NC	80 - 120	103	80 - 120	<1.0	mg/L	0.72	20		
8393812	Total Dissolved Solids	2016/09/12	101	80 - 120	100	80 - 120	<10	mg/L	0	20		
8393923	F2 (C10-C16 Hydrocarbons)	2016/09/11	101	60 - 130	108	70 - 130	<0.10	mg/L	NC	30		
8393923	F3 (C16-C34 Hydrocarbons)	2016/09/11	101	60 - 130	109	70 - 130	<0.20	mg/L	NC	30		
8393923	F4 (C34-C50 Hydrocarbons)	2016/09/11	95	60 - 130	101	70 - 130	<0.20	mg/L	NC	30		

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QUALITY ASSURANCE REPORT(CONT'D)

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: NORTH RIM
Sampler Initials: DK, DP

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8394049	Dissolved Chloride (Cl)	2016/09/12	119	80 - 120	101	80 - 120	<1.0	mg/L	2.0	20		
8394052	Dissolved Sulphate (SO4)	2016/09/12	NC	80 - 120	105	80 - 120	<1.0	mg/L	0.11	20		
8394149	Dissolved Nitrate (N)	2016/09/11	104	80 - 120	104	80 - 120	<0.010	mg/L	0.24	20		
8394149	Dissolved Nitrite (N)	2016/09/11	104	80 - 120	102	80 - 120	<0.010	mg/L	NC	20		
8394155	Dissolved Nitrate (N)	2016/09/12	105	80 - 120	103	80 - 120	<0.010	mg/L	NC	20		
8394155	Dissolved Nitrite (N)	2016/09/12	106	80 - 120	102	80 - 120	<0.010	mg/L	NC	20		
8394335	Turbidity	2016/09/12			100	80 - 120	<0.10	NTU	NC	20		
8394426	Benzene	2016/09/12	98	70 - 130	96	70 - 130	<0.40	ug/L	NC	30		
8394426	Ethylbenzene	2016/09/12	91	70 - 130	89	70 - 130	<0.40	ug/L	NC	30		
8394426	F1 (C6-C10) - BTEX	2016/09/12					<100	ug/L	NC	30		
8394426	F1 (C6-C10)	2016/09/12	96	70 - 130	88	70 - 130	<100	ug/L	NC	30		
8394426	m & p-Xylene	2016/09/12	91	70 - 130	90	70 - 130	<0.80	ug/L	NC	30		
8394426	o-Xylene	2016/09/12	95	70 - 130	94	70 - 130	<0.40	ug/L	NC	30		
8394426	Toluene	2016/09/12	91	70 - 130	89	70 - 130	<0.40	ug/L	NC	30		
8394426	Xylenes (Total)	2016/09/12					<0.80	ug/L	NC	30		
8395093	Total Ammonia (N)	2016/09/12	92	80 - 120	104	80 - 120	<0.050	mg/L	NC	20		
8395102	Total Ammonia (N)	2016/09/12	103	80 - 120	101	80 - 120	<0.050	mg/L	11	20		
8396043	Dissolved Phosphorus (P)	2016/09/14	96	80 - 120	97	80 - 120	<0.0030	mg/L	NC	20	87	80 - 120
8396069	Dissolved Phosphorus (P)	2016/09/14	93	80 - 120	95	80 - 120	<0.0030	mg/L	NC	20	87	80 - 120
8396091	Total Phosphorus (P)	2016/09/14	97	80 - 120	100	80 - 120	<0.0030	mg/L	NC	20	92	80 - 120
8396141	Total Phosphorus (P)	2016/09/14	89	80 - 120	100	80 - 120	<0.0030	mg/L	NC	20	92	80 - 120
8396904	Total Hex. Chromium (Cr 6+)	2016/09/14	112	80 - 120	99	80 - 120	<0.0010	mg/L	NC	20		
8397229	Dissolved Aluminum (Al)	2016/09/14	106	80 - 120	111	80 - 120	<3.0	ug/L	3.9	20		
8397229	Dissolved Antimony (Sb)	2016/09/14	103	80 - 120	103	80 - 120	<0.50	ug/L	NC	20		
8397229	Dissolved Arsenic (As)	2016/09/14	102	80 - 120	101	80 - 120	<0.10	ug/L	13	20		
8397229	Dissolved Barium (Ba)	2016/09/14	NC	80 - 120	102	80 - 120	<1.0	ug/L	1.4	20		
8397229	Dissolved Beryllium (Be)	2016/09/14	106	80 - 120	109	80 - 120	<0.10	ug/L	NC	20		
8397229	Dissolved Bismuth (Bi)	2016/09/14	106	80 - 120	105	80 - 120	<1.0	ug/L	NC	20		
8397229	Dissolved Boron (B)	2016/09/14	101	80 - 120	105	80 - 120	<50	ug/L	NC	20		
8397229	Dissolved Cadmium (Cd)	2016/09/14	100	80 - 120	100	80 - 120	<0.010	ug/L	6.4	20		
8397229	Dissolved Chromium (Cr)	2016/09/14	97	80 - 120	98	80 - 120	<1.0	ug/L	NC	20		

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QUALITY ASSURANCE REPORT(CONT'D)

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: NORTH RIM
Sampler Initials: DK, DP

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8397229	Dissolved Cobalt (Co)	2016/09/14	96	80 - 120	99	80 - 120	<0.50	ug/L	NC	20		
8397229	Dissolved Copper (Cu)	2016/09/14	93	80 - 120	97	80 - 120	<0.20	ug/L	0.97	20		
8397229	Dissolved Iron (Fe)	2016/09/14	105	80 - 120	110	80 - 120	<5.0	ug/L	14	20		
8397229	Dissolved Lead (Pb)	2016/09/14	106	80 - 120	108	80 - 120	<0.20	ug/L	NC	20		
8397229	Dissolved Lithium (Li)	2016/09/14	102	80 - 120	110	80 - 120	<5.0	ug/L	NC	20		
8397229	Dissolved Manganese (Mn)	2016/09/14	NC	80 - 120	97	80 - 120	<1.0	ug/L	0.79	20		
8397229	Dissolved Molybdenum (Mo)	2016/09/14	NC	80 - 120	104	80 - 120	<1.0	ug/L	NC	20		
8397229	Dissolved Nickel (Ni)	2016/09/14	100	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
8397229	Dissolved Selenium (Se)	2016/09/14	100	80 - 120	103	80 - 120	<0.10	ug/L	NC	20		
8397229	Dissolved Silicon (Si)	2016/09/14					<100	ug/L	5.4	20		
8397229	Dissolved Silver (Ag)	2016/09/14	104	80 - 120	107	80 - 120	<0.020	ug/L	NC	20		
8397229	Dissolved Strontium (Sr)	2016/09/14	NC	80 - 120	107	80 - 120	<1.0	ug/L	2.7	20		
8397229	Dissolved Thallium (Tl)	2016/09/14	103	80 - 120	103	80 - 120	<0.050	ug/L	NC	20		
8397229	Dissolved Tin (Sn)	2016/09/14	101	80 - 120	96	80 - 120	<5.0	ug/L	NC	20		
8397229	Dissolved Titanium (Ti)	2016/09/14	94	80 - 120	104	80 - 120	<5.0	ug/L	NC	20		
8397229	Dissolved Uranium (U)	2016/09/14	104	80 - 120	105	80 - 120	<0.10	ug/L	4.4	20		
8397229	Dissolved Vanadium (V)	2016/09/14	97	80 - 120	99	80 - 120	<5.0	ug/L	NC	20		
8397229	Dissolved Zinc (Zn)	2016/09/14	NC	80 - 120	101	80 - 120	<5.0	ug/L	2.3	20		
8397229	Dissolved Zirconium (Zr)	2016/09/14					<0.50	ug/L	NC	20		
8397304	Dissolved Organic Carbon (C)	2016/09/14	102	80 - 120	107	80 - 120	<0.50	mg/L	19	20		
8397504	Dissolved Organic Carbon (C)	2016/09/14	NC	80 - 120	103	80 - 120	<0.50	mg/L	8.5	20		
8397573	Total Aluminum (Al)	2016/09/14	109	80 - 120	108	80 - 120	<3.0	ug/L	NC	20		
8397573	Total Antimony (Sb)	2016/09/14	99	80 - 120	100	80 - 120	<0.50	ug/L	NC	20		
8397573	Total Arsenic (As)	2016/09/14	104	80 - 120	100	80 - 120	<0.10	ug/L	NC	20		
8397573	Total Barium (Ba)	2016/09/14	95	80 - 120	96	80 - 120	<1.0	ug/L	NC	20		
8397573	Total Beryllium (Be)	2016/09/14	103	80 - 120	100	80 - 120	<0.10	ug/L	NC	20		
8397573	Total Bismuth (Bi)	2016/09/14	103	80 - 120	97	80 - 120	<1.0	ug/L	NC	20		
8397573	Total Boron (B)	2016/09/14	105	80 - 120	98	80 - 120	<50	ug/L	NC	20		
8397573	Total Cadmium (Cd)	2016/09/14	101	80 - 120	101	80 - 120	<0.010	ug/L	NC	20		
8397573	Total Chromium (Cr)	2016/09/14	100	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		
8397573	Total Cobalt (Co)	2016/09/14	101	80 - 120	99	80 - 120	<0.50	ug/L	NC	20		

Maxxam Job #: B677964
Report Date: 2017/04/10

QUALITY ASSURANCE REPORT(CONT'D)

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: NORTH RIM
Sampler Initials: DK, DP

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8397573	Total Copper (Cu)	2016/09/14	100	80 - 120	100	80 - 120	<0.50	ug/L	NC	20		
8397573	Total Iron (Fe)	2016/09/14	108	80 - 120	112	80 - 120	<10	ug/L	NC	20		
8397573	Total Lead (Pb)	2016/09/14	104	80 - 120	99	80 - 120	<0.20	ug/L	NC	20		
8397573	Total Lithium (Li)	2016/09/14	101	80 - 120	102	80 - 120	<5.0	ug/L	NC	20		
8397573	Total Manganese (Mn)	2016/09/14	99	80 - 120	98	80 - 120	<1.0	ug/L	NC	20		
8397573	Total Molybdenum (Mo)	2016/09/14	89	80 - 120	100	80 - 120	<1.0	ug/L	NC	20		
8397573	Total Nickel (Ni)	2016/09/14	104	80 - 120	103	80 - 120	<1.0	ug/L	NC	20		
8397573	Total Selenium (Se)	2016/09/14	103	80 - 120	105	80 - 120	<0.10	ug/L	NC	20		
8397573	Total Silicon (Si)	2016/09/14					<100	ug/L	NC	20		
8397573	Total Silver (Ag)	2016/09/14	101	80 - 120	108	80 - 120	<0.020	ug/L	NC	20		
8397573	Total Strontium (Sr)	2016/09/14	96	80 - 120	102	80 - 120	<1.0	ug/L	NC	20		
8397573	Total Thallium (Tl)	2016/09/14	96	80 - 120	94	80 - 120	<0.050	ug/L	NC	20		
8397573	Total Tin (Sn)	2016/09/14	98	80 - 120	100	80 - 120	<5.0	ug/L	NC	20		
8397573	Total Titanium (Ti)	2016/09/14	96	80 - 120	97	80 - 120	<5.0	ug/L	NC	20		
8397573	Total Uranium (U)	2016/09/14	101	80 - 120	98	80 - 120	<0.10	ug/L	NC	20		
8397573	Total Vanadium (V)	2016/09/14	101	80 - 120	96	80 - 120	<5.0	ug/L	NC	20		
8397573	Total Zinc (Zn)	2016/09/14	107	80 - 120	103	80 - 120	<5.0	ug/L	NC	20		
8397573	Total Zirconium (Zr)	2016/09/14					<0.50	ug/L	NC	20		
8397651	Total Aluminum (Al)	2016/09/15	NC	80 - 120	116	80 - 120	3.1, RDL=3.0	ug/L	33 (1)	20		
8397651	Total Antimony (Sb)	2016/09/15	109	80 - 120	102	80 - 120	<0.50	ug/L	NC	20		
8397651	Total Arsenic (As)	2016/09/15	107	80 - 120	104	80 - 120	<0.10	ug/L	8.2	20		
8397651	Total Barium (Ba)	2016/09/15	NC	80 - 120	98	80 - 120	<1.0	ug/L	9.0	20		
8397651	Total Beryllium (Be)	2016/09/15	109	80 - 120	107	80 - 120	<0.10	ug/L	NC	20		
8397651	Total Bismuth (Bi)	2016/09/15	101	80 - 120	98	80 - 120	<1.0	ug/L	NC	20		
8397651	Total Boron (B)	2016/09/15	90	80 - 120	103	80 - 120	<50	ug/L	NC	20		
8397651	Total Cadmium (Cd)	2016/09/15	106	80 - 120	107	80 - 120	<0.010	ug/L	17	20		
8397651	Total Chromium (Cr)	2016/09/15	103	80 - 120	100	80 - 120	<1.0	ug/L	NC	20		
8397651	Total Cobalt (Co)	2016/09/15	104	80 - 120	100	80 - 120	<0.50	ug/L	NC	20		
8397651	Total Copper (Cu)	2016/09/15	98	80 - 120	107	80 - 120	<0.50	ug/L	7.4	20		
8397651	Total Iron (Fe)	2016/09/15	NC	80 - 120	110	80 - 120	<10	ug/L	9.2	20		
8397651	Total Lead (Pb)	2016/09/15	101	80 - 120	104	80 - 120	<0.20	ug/L	15	20		

Maxxam Job #: B677964
Report Date: 2017/04/10

QUALITY ASSURANCE REPORT(CONT'D)

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: NORTH RIM
Sampler Initials: DK, DP

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8397651	Total Lithium (Li)	2016/09/15	102	80 - 120	102	80 - 120	<5.0	ug/L	NC	20		
8397651	Total Manganese (Mn)	2016/09/15	NC	80 - 120	105	80 - 120	<1.0	ug/L	8.1	20		
8397651	Total Molybdenum (Mo)	2016/09/15	111	80 - 120	108	80 - 120	<1.0	ug/L	NC	20		
8397651	Total Nickel (Ni)	2016/09/15	101	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
8397651	Total Selenium (Se)	2016/09/15	112	80 - 120	110	80 - 120	<0.10	ug/L	NC	20		
8397651	Total Silicon (Si)	2016/09/15					<100	ug/L	1.5	20		
8397651	Total Silver (Ag)	2016/09/15	105	80 - 120	107	80 - 120	<0.020	ug/L	NC	20		
8397651	Total Strontium (Sr)	2016/09/15	NC	80 - 120	103	80 - 120	<1.0	ug/L	0.77	20		
8397651	Total Thallium (Tl)	2016/09/15	99	80 - 120	100	80 - 120	<0.050	ug/L	NC	20		
8397651	Total Tin (Sn)	2016/09/15	101	80 - 120	110	80 - 120	<5.0	ug/L	NC	20		
8397651	Total Titanium (Ti)	2016/09/15	93	80 - 120	97	80 - 120	<5.0	ug/L	NC	20		
8397651	Total Uranium (U)	2016/09/15	103	80 - 120	103	80 - 120	<0.10	ug/L	0.27	20		
8397651	Total Vanadium (V)	2016/09/15	102	80 - 120	99	80 - 120	<5.0	ug/L	NC	20		
8397651	Total Zinc (Zn)	2016/09/15	NC	80 - 120	119	80 - 120	<5.0	ug/L	NC	20		
8397651	Total Zirconium (Zr)	2016/09/15					<0.50	ug/L	NC	20		
8397762	Total Aluminum (Al)	2016/09/14	107	80 - 120	112	80 - 120	<3.0	ug/L	1.1	20		
8397762	Total Antimony (Sb)	2016/09/14	103	80 - 120	102	80 - 120	<0.50	ug/L				
8397762	Total Arsenic (As)	2016/09/14	104	80 - 120	107	80 - 120	<0.10	ug/L	6.1	20		
8397762	Total Barium (Ba)	2016/09/14	99	80 - 120	99	80 - 120	<1.0	ug/L				
8397762	Total Beryllium (Be)	2016/09/14	105	80 - 120	100	80 - 120	<0.10	ug/L				
8397762	Total Bismuth (Bi)	2016/09/14	101	80 - 120	104	80 - 120	<1.0	ug/L				
8397762	Total Boron (B)	2016/09/14	105	80 - 120	102	80 - 120	<50	ug/L	NC	20		
8397762	Total Cadmium (Cd)	2016/09/14	103	80 - 120	103	80 - 120	<0.010	ug/L	NC	20		
8397762	Total Chromium (Cr)	2016/09/14	100	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
8397762	Total Cobalt (Co)	2016/09/14	97	80 - 120	104	80 - 120	<0.50	ug/L	NC	20		
8397762	Total Copper (Cu)	2016/09/14	94	80 - 120	102	80 - 120	<0.50	ug/L	NC	20		
8397762	Total Iron (Fe)	2016/09/14	110	80 - 120	113	80 - 120	<10	ug/L	6.1	20		
8397762	Total Lead (Pb)	2016/09/14	104	80 - 120	108	80 - 120	<0.20	ug/L	NC	20		
8397762	Total Lithium (Li)	2016/09/14	104	80 - 120	100	80 - 120	<5.0	ug/L				
8397762	Total Manganese (Mn)	2016/09/14	100	80 - 120	107	80 - 120	<1.0	ug/L	3.4	20		
8397762	Total Molybdenum (Mo)	2016/09/14	107	80 - 120	106	80 - 120	<1.0	ug/L	NC	20		

Maxxam Job #: B677964
Report Date: 2017/04/10

QUALITY ASSURANCE REPORT(CONT'D)

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: NORTH RIM
Sampler Initials: DK, DP

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8397762	Total Nickel (Ni)	2016/09/14	97	80 - 120	108	80 - 120	<1.0	ug/L	NC	20		
8397762	Total Selenium (Se)	2016/09/14	106	80 - 120	103	80 - 120	<0.10	ug/L	NC	20		
8397762	Total Silicon (Si)	2016/09/14					<100	ug/L				
8397762	Total Silver (Ag)	2016/09/14	102	80 - 120	106	80 - 120	<0.020	ug/L	NC	20		
8397762	Total Strontium (Sr)	2016/09/14	NC	80 - 120	104	80 - 120	<1.0	ug/L				
8397762	Total Thallium (Tl)	2016/09/14	100	80 - 120	100	80 - 120	<0.050	ug/L				
8397762	Total Tin (Sn)	2016/09/14	104	80 - 120	104	80 - 120	<5.0	ug/L				
8397762	Total Titanium (Ti)	2016/09/14	109	80 - 120	100	80 - 120	<5.0	ug/L				
8397762	Total Uranium (U)	2016/09/14	105	80 - 120	105	80 - 120	<0.10	ug/L				
8397762	Total Vanadium (V)	2016/09/14	101	80 - 120	103	80 - 120	<5.0	ug/L				
8397762	Total Zinc (Zn)	2016/09/14	107	80 - 120	110	80 - 120	<5.0	ug/L	NC	20		
8397762	Total Zirconium (Zr)	2016/09/14					<0.50	ug/L				
8397832	Total Mercury (Hg)	2016/09/14	95	80 - 120	99	80 - 120	<0.010	ug/L	NC	20		
8397837	Total Mercury (Hg)	2016/09/14	96	80 - 120	100	80 - 120	<0.010	ug/L	NC	20		
8397844	Dissolved Mercury (Hg)	2016/09/14	97	80 - 120	104	80 - 120	<0.010	ug/L	NC	20		
8400311	Dissolved Barium (Ba)	2016/09/16			99	80 - 120	<1.0	ug/L				
8400311	Dissolved Iron (Fe)	2016/09/16			104	80 - 120	<5.0	ug/L				

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2 \times \text{RDL}$).

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

Maxxam Job #: B677964
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000
Site Location: NORTH RIM
Sampler Initials: DK, DP

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Anna Koksharova, M.Sc., Organics Senior Analyst



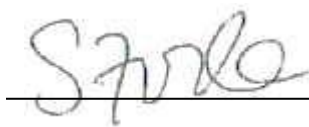
David Huang, M.Sc., P.Chem., QP, Scientific Services Manager



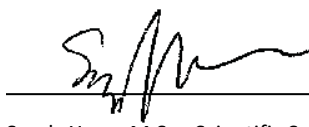
Justin Geisel, B.Sc., Organics Supervisor



Maria Magdalena Florescu, Ph.D., P.Chem., QP, Inorganics Senior Analyst



Suwan Fock, B.Sc., QP, Inorganics Senior Analyst



Sandy Yuan, M.Sc., Scientific Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

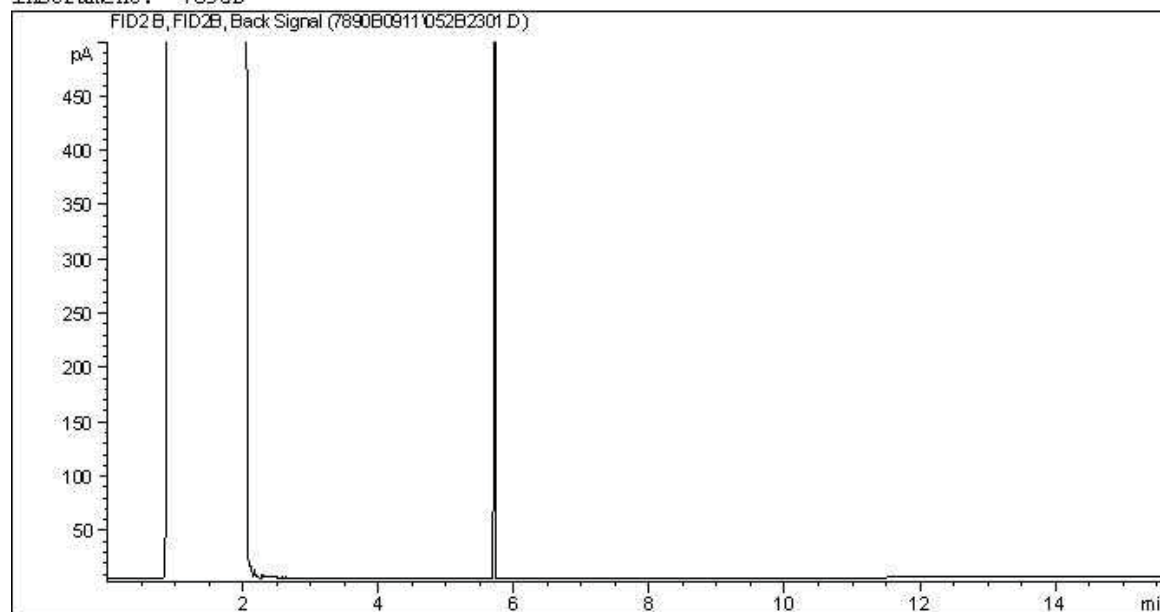
Maxxam Analytics International Corporation o/a Maxxam Analytics										Chain Of Custody Record									
Unit 105 - 349 Old Airport Road, Yellowknife, North West Territories Canada X1A 3X6 Tel (867) 445-2448 Toll-free 800-563-6266 Fax (905) 817-5779 www.maxxam.ca										Page 2 of 2									
INVOICE TO:					Report Information					Project Information					Laboratory Use Only				
Company Name #1776 SLR CONSULTING (CANADA) LTD					Company Name					Quotation # B51186					Maxxam Job #				
Contact Name Jay Cherian KATRINA NOKLEBY					Contact Name					P.O. #					Bottle Order #				
Address #144-5022 49th St					Address					Project # 234.01016.00000					Chain Of Custody Record				
Phone 867-765-5695					Phone					Project Name GREAT BEAR LAKE					Project Manager				
Fax jcherian@slrconsulting.com; analytical@slrconsulting.c					Fax					Site #					Letitia Prefontaine				
Regulatory Criteria: knokleby@slr...					Special Instructions					ANALYSIS REQUESTED (PLEASE BE SPECIFIC)					Turnaround Time (TAT) Required:				
<input type="checkbox"/> CSR <input checked="" type="checkbox"/> CCME <input type="checkbox"/> BC Water Quality <input type="checkbox"/> Other					<input checked="" type="checkbox"/> Hold					Metals Field Filtered ? (Y/N) Alkalinity, Conductivity, pH, Turbidity, TSS, TDS Chloride, Sulphate Ammonia, Orthophosph, Dissolved phosphate, Total phosphate, Nitrate, Nitrite, DOC Total Metals in Water w/ CV Hg & Total Hardness Hexavalent Chromium (Total) Dissolved Metals in Water w/ CV Hg & Dissolved Hardness CCME BTEX/F1 in Water CCME F2-F4 in Water					Regular (Standard) TAT: (will be applied if Rush TAT is not specified): Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details. Job Specific Rush TAT (if applies to entire submission) 1 DAY <input type="checkbox"/> 2 Day <input type="checkbox"/> 3 Day <input type="checkbox"/> Date Required: <input type="checkbox"/> Rush Confirmation Number: <input type="checkbox"/> (call lab for #)				
SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM																			
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered ? (Y/N)	Alkalinity, Conductivity, pH, Turbidity, TSS, TDS	Chloride, Sulphate	Ammonia, Orthophosph, Dissolved phosphate, Total phosphate, Nitrate, Nitrite, DOC	Total Metals in Water w/ CV Hg & Total Hardness	Hexavalent Chromium (Total)	Dissolved Metals in Water w/ CV Hg & Dissolved Hardness	CCME BTEX/F1 in Water	CCME F2-F4 in Water	# of Bottles	Comments				
1	travel blank					X	X	X	X					7					
2	NO-4	09/05/2016	12:07	SWY		X	X	X	X	X	X	X	X	14					
3															RECEIVED IN YELLOWKNIFE				
4															By: Michelle Michelle				
5															2016-09-07 8:40				
6															Temp: ON ACTR				
7																			
8																			
9																			
10																			
RELINQUISHED BY: (Signature/Print)					RECEIVED BY: (Signature/Print)					Date: (YY/MM/DD)					Time				
David Peterson					David T. J. J.					2016/09/08					12:43				
Date: (YY/MM/DD)					Time					# Jars used and not submitted					Lab Use Only				
16/09/06					10:00										Time Sensitive <input type="checkbox"/> Temperature (°C) on Receipt See ACTR Custody Seal Intact on Cooler? <input type="checkbox"/> Yes <input type="checkbox"/> No				
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.															White: Maxxam Yellow: Client				

Maxxam Analytics International Corporation of a Maxxam Analytics										Chain Of Custody Record														
Unit 105 - 349 Old Airport Road, Yellowknife, North West Territories Canada X1A 3X6 Tel: (867) 445-2448 Toll-free 800-563-6266 Fax: (905) 817-5779 www.maxxam.ca										Page 1 of 2														
INVOICE TO:					Report Information					Project Information					Laboratory Use Only									
Company Name #1776 SLR CONSULTING (CANADA) LTD					Company Name					Quotation # B51186					Maxxam Job #									
Contact Name Jay Cherian KATRINA NOKLEBY					Contact Name					P.O. #					Bottle Order #									
Address SLR YELLOWKNIFE					Address					Project # 234.01016.0000					Chain Of Custody Record									
Phone					Phone					Project Name GREAT BEAR LAKE					Project Manager									
Fax					Fax					Site # Silver Bear North River					C#504160-02-01									
Report: jcherian@slrconsulting.com; analytical@slrconsulting.ca					Invoice knokleby@slrconsulting.ca					Sampled By DK/DDP					Letitia Prefontaine									
Regulatory Criteria: knokleby@slr...					Special Instructions					ANALYSIS REQUESTED (PLEASE BE SPECIFIC)										Turnaround Time (TAT) Required:				
<input type="checkbox"/> CSR <input checked="" type="checkbox"/> CCME <input type="checkbox"/> BC Water Quality <input type="checkbox"/> Other					★ Hold					Metals Field Filtered? (Y/N) Alkalinity, Conductivity, pH, Turbidity, TSS, TDS Chloride, Sulphate Ammonia, Orthophosphorus, Total phosphate, Nitrate, Nitrite, DOC Total Metals in Water w/ CV Hg & Total Hardness Hexavalent Chromium (Total) Dissolved Metals in Water w/ CV Hg & Dissolved Hardness CCME BTEX/F ¹ in Water CCME F2-F4 in Water Gross Alpha & Beta Lead-210 & Radium-226										Regular (Standard) TAT: (will be applied if Rush TAT is not specified) Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details. Job Specific Rush TAT (if applies to entire submission) 1 DAY <input type="checkbox"/> 2 Day <input type="checkbox"/> 3 Day <input type="checkbox"/> Date Required: <input type="checkbox"/> Rush Confirmation Number: (call lab for #)				
SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM																								
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered? (Y/N)	Alkalinity, Conductivity, pH, Turbidity, TSS, TDS	Chloride, Sulphate	Ammonia, Orthophosphorus, Total phosphate, Nitrate, Nitrite, DOC	Total Metals in Water w/ CV Hg & Total Hardness	Hexavalent Chromium (Total)	Dissolved Metals in Water w/ CV Hg & Dissolved Hardness	CCME BTEX/F ¹ in Water	CCME F2-F4 in Water	Gross Alpha & Beta	Lead-210 & Radium-226	# of Bottles	Comments							
1	NO-2	09/05/2016	11:36	SW	Y	X	X	X	X	X	X	X	X			14								
2	NO-11-Zm		11:07	SW	Y	X	X	X	X	X	X	X	X			14								
3	NO-1		14:07	SW	Y	X	X	X	X	X	X	X	X			14								
4	NO-7-Zm		10:51	SW	Y	X	X	X	X	X						8	RECEIVED IN YELLOWKNIFE By: Michelle Huie 8:40							
5	NO-5		13:27	SW	Y	X	X	X	X	X						8	2016 -09- 07							
6	Dup F		14:30	SW	Y	X	X	X	X	X		X	X			11	Temp: ON ACTR							
7	Dup 9		13:10	SW	Y	X	X	X	X	X		X	X			12								
8	NO-6		13:10	SW	Y	X	X	X	X	X		X	X			12								
9	NO-9		13:47	SW	Y	X	X	X	X	X		X	X			11								
10	NO-3		10:31	SW	Y	X	X	X	X	X		X	X			14								
RELINQUISHED BY: (Signature/Print)					RECEIVED BY: (Signature/Print)					Date: (YY/MM/DD)					Time									
David Peterson					David Tidman					2016/09/08					12:13									
Date: (YY/MM/DD)					Time					# jars used and not submitted					Lab Use Only									
16/09/06					10:00					0					Time Sensitive <input type="checkbox"/> Temperature (°C) on Receipt Sec ACTR Custody Seal Intact on Cooler? <input type="checkbox"/> Yes <input type="checkbox"/> No									
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.																								

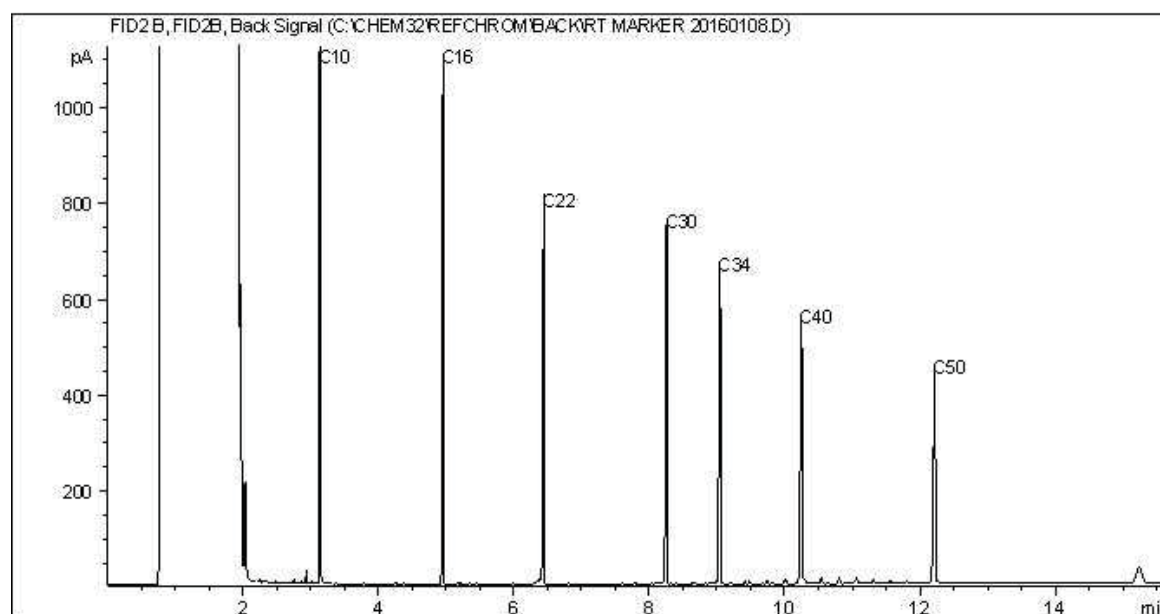
Maxxam Analytics International Corporation of a Maxxam Analytics

CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: 7890B



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

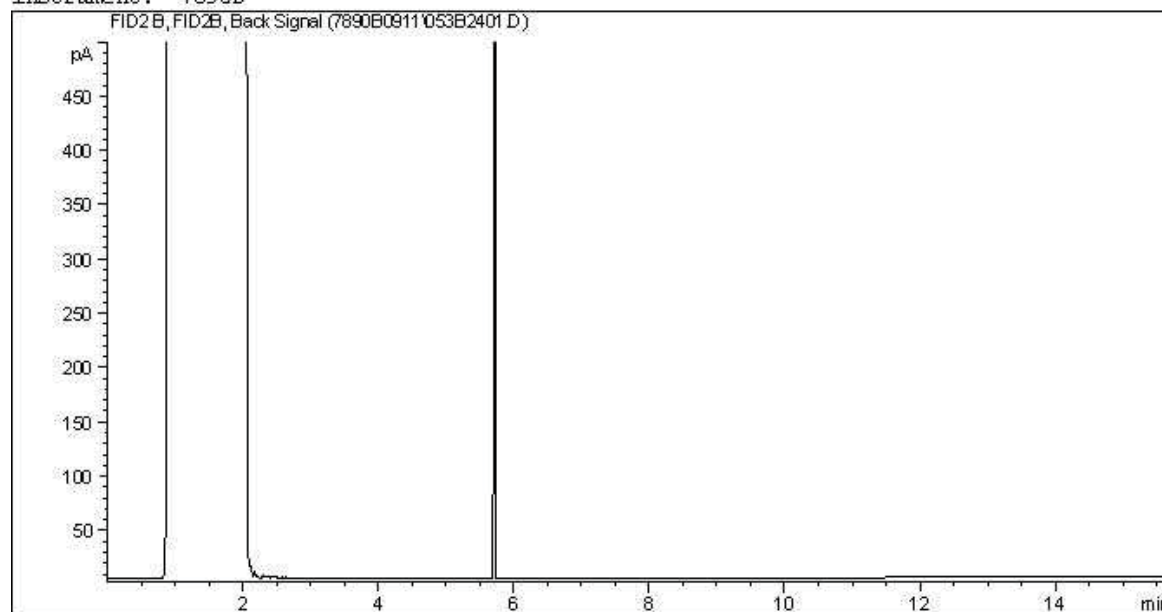
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Page 1 of 1

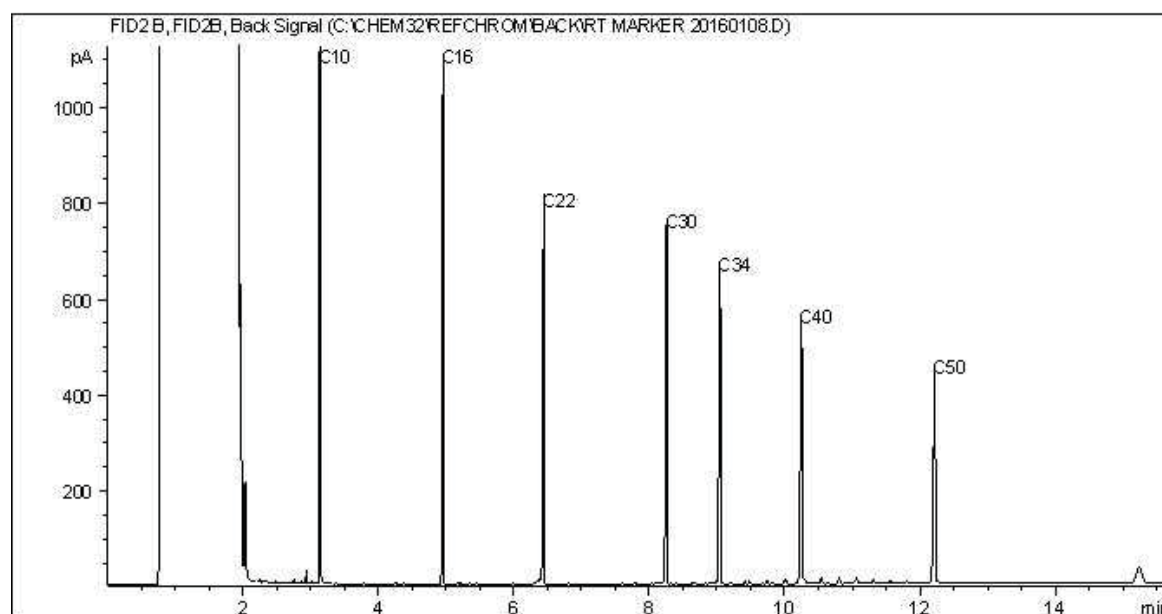
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: 7890B



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

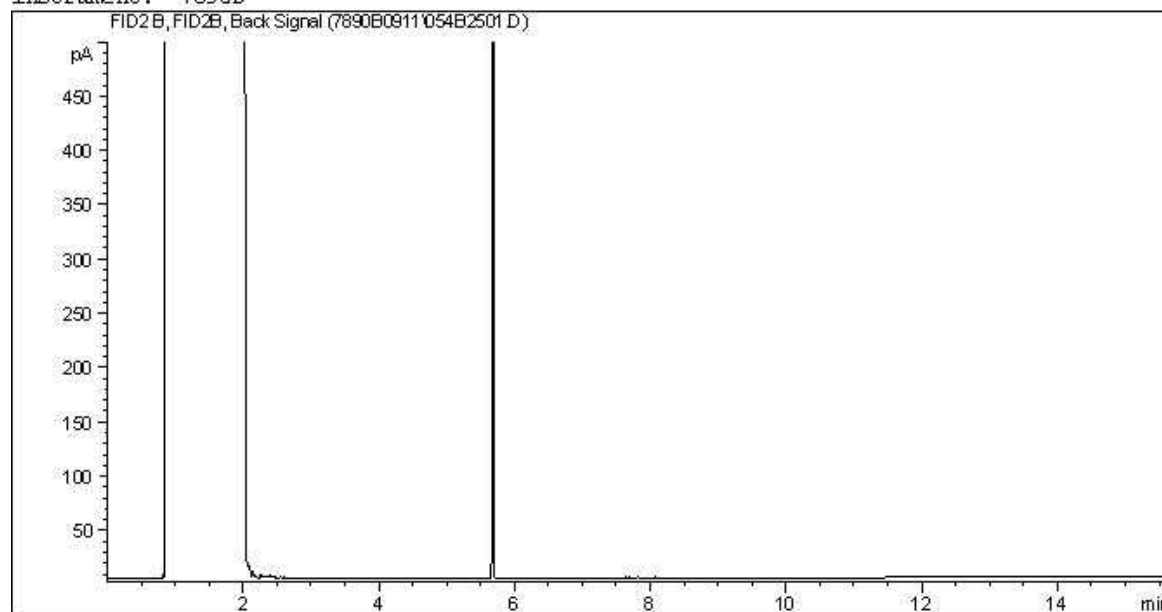
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Page 1 of 1

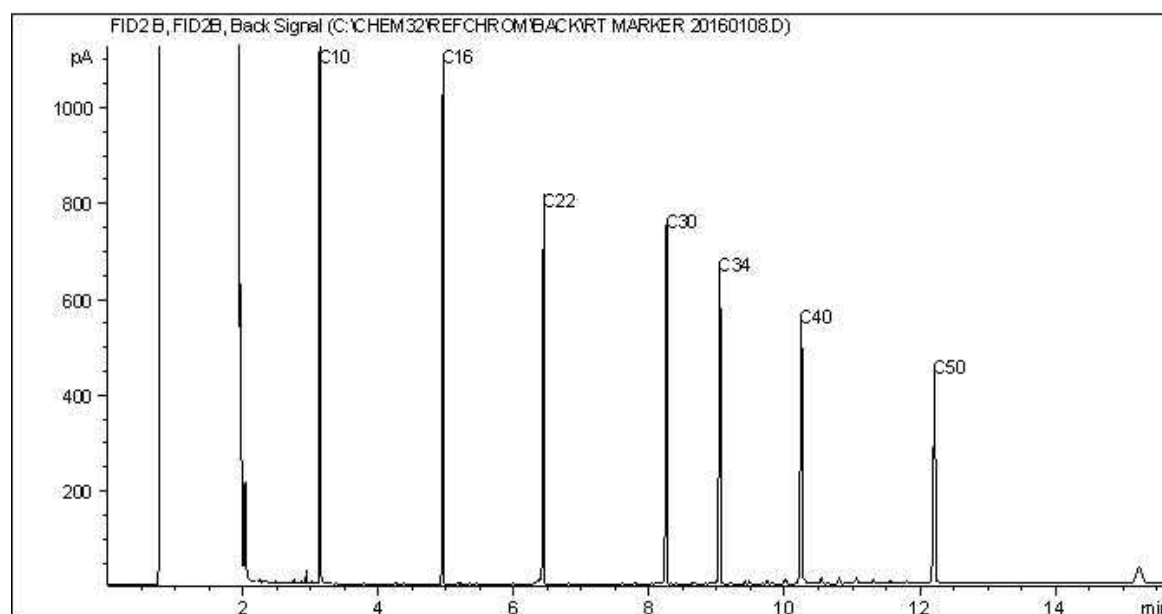
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: 7890B



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

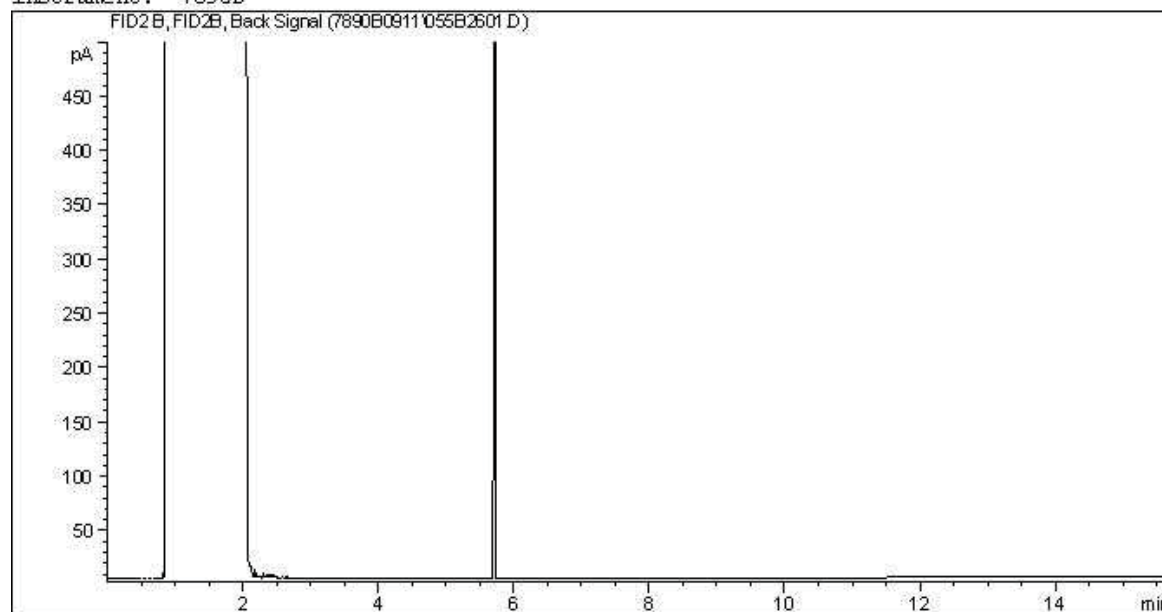
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Page 1 of 1

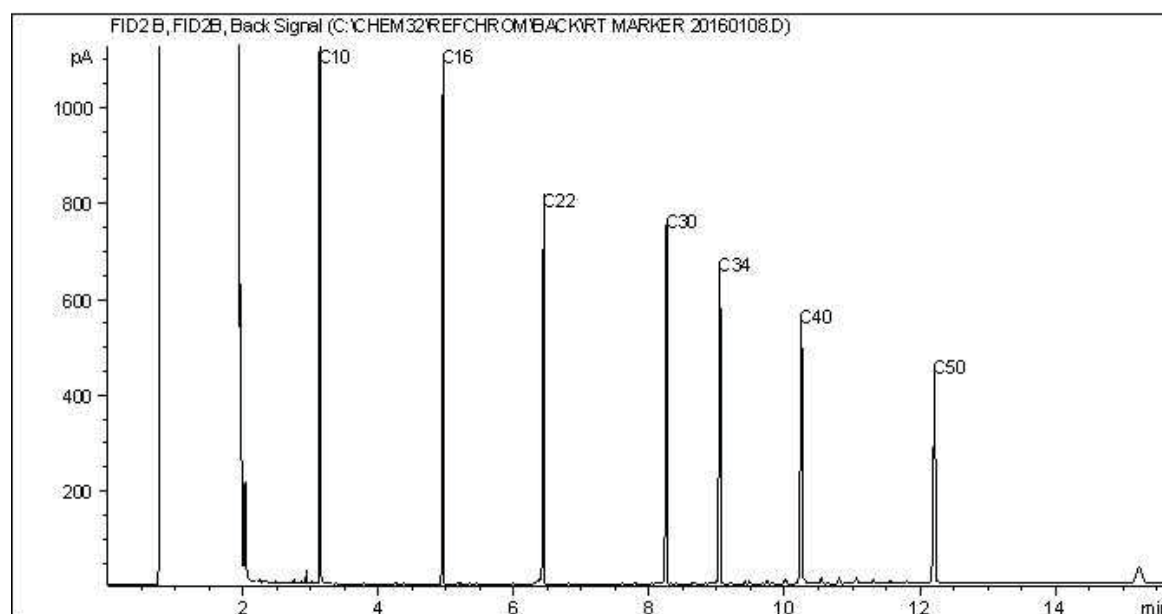
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CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: 7890B



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

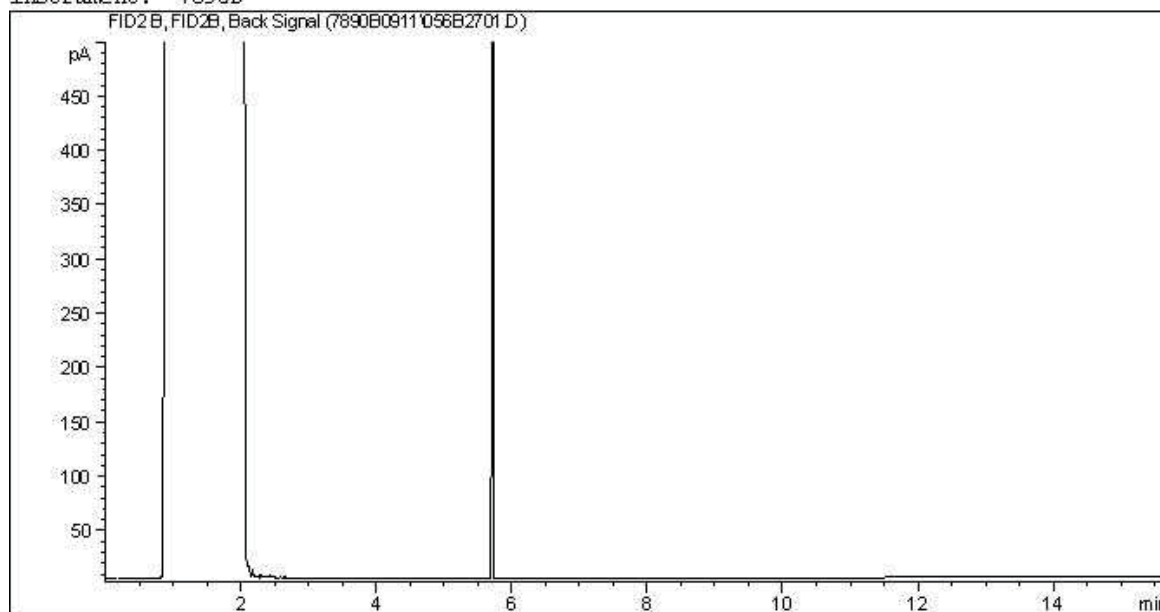
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Page 1 of 1

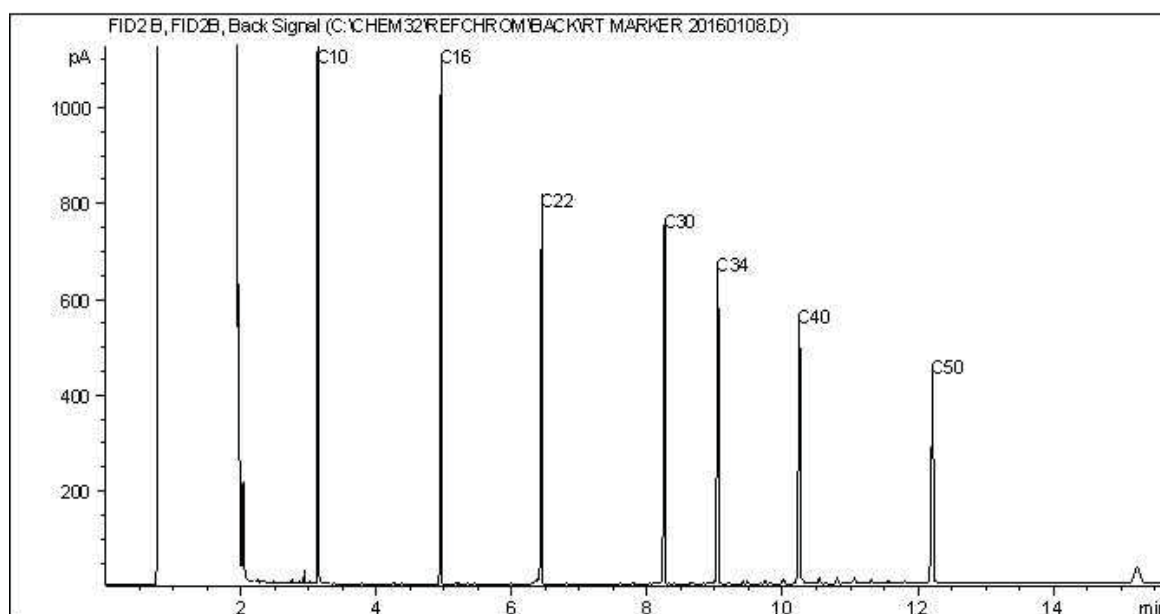
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CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: 7890B



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

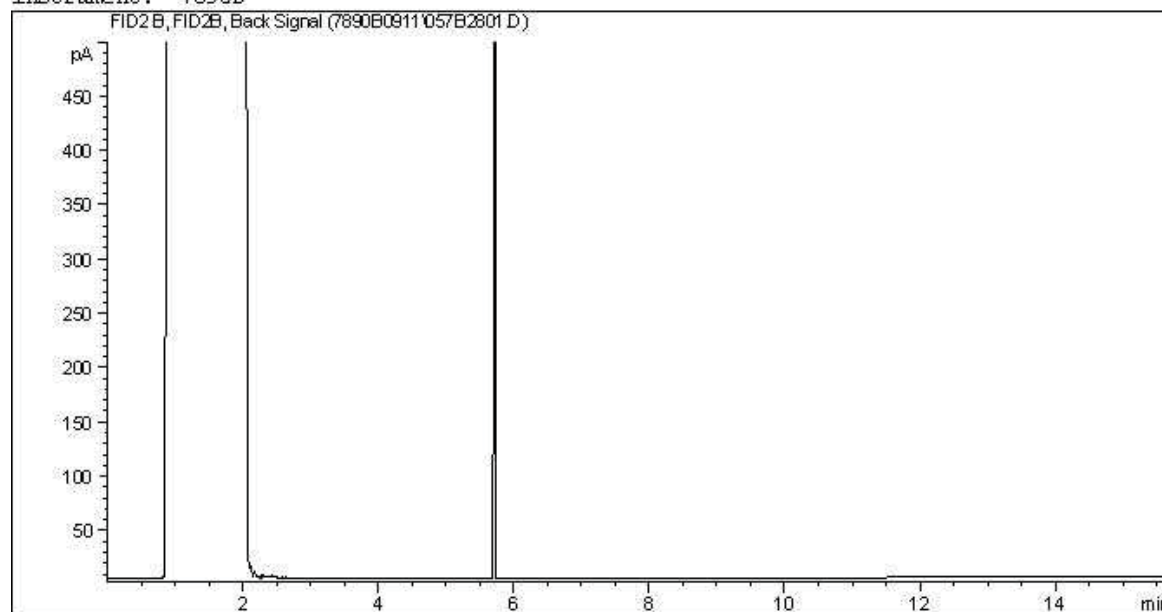
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Page 1 of 1

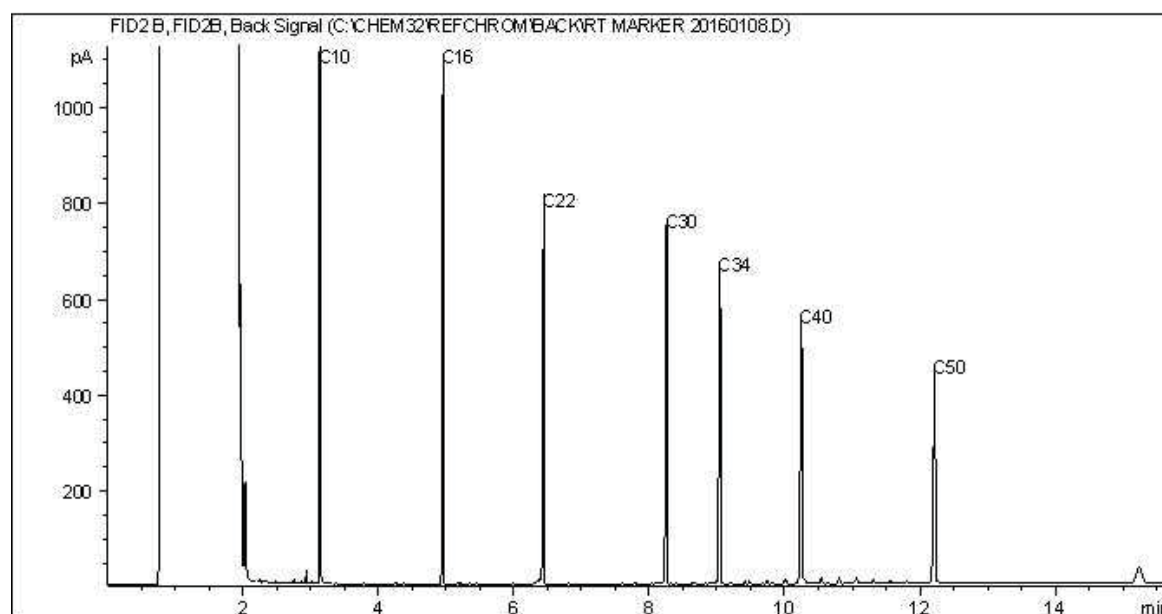
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CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: 7890B



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

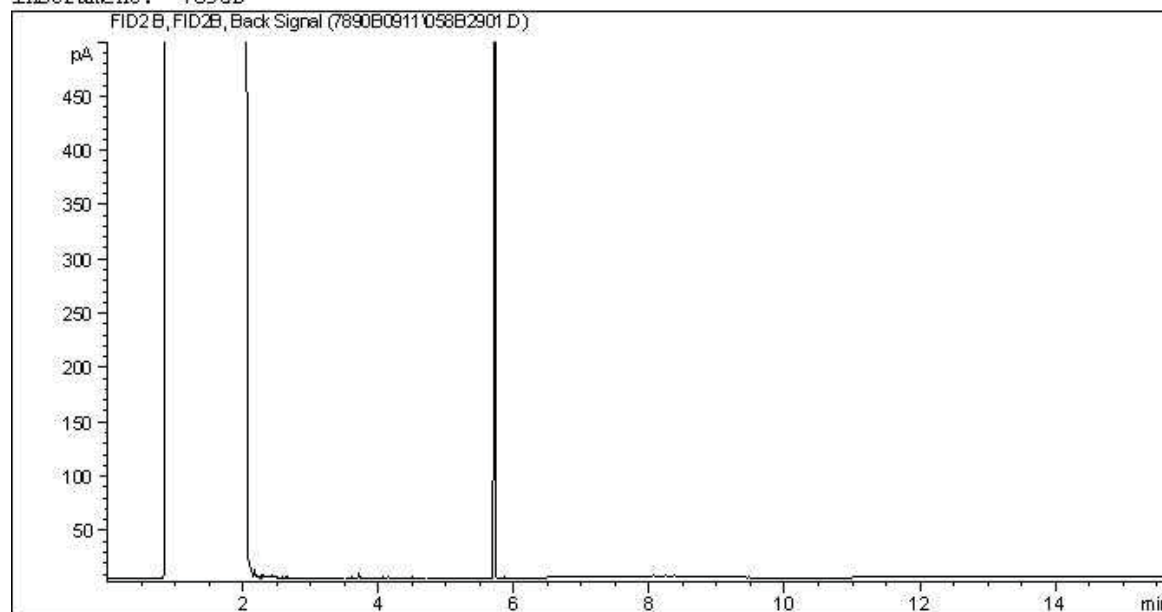
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Page 1 of 1

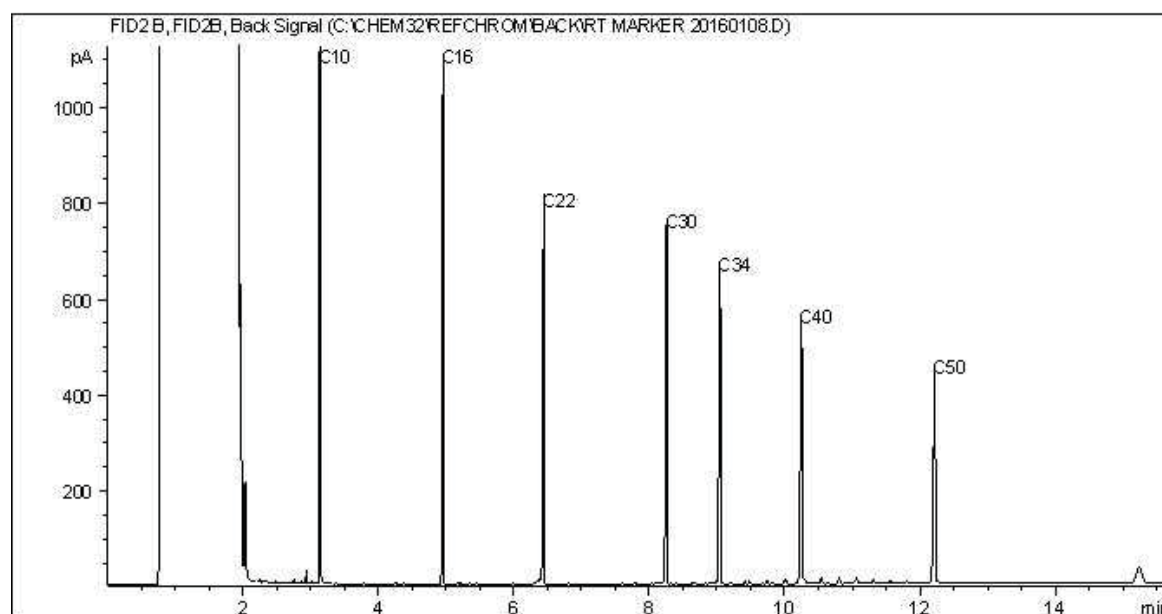
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CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: 7890B



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

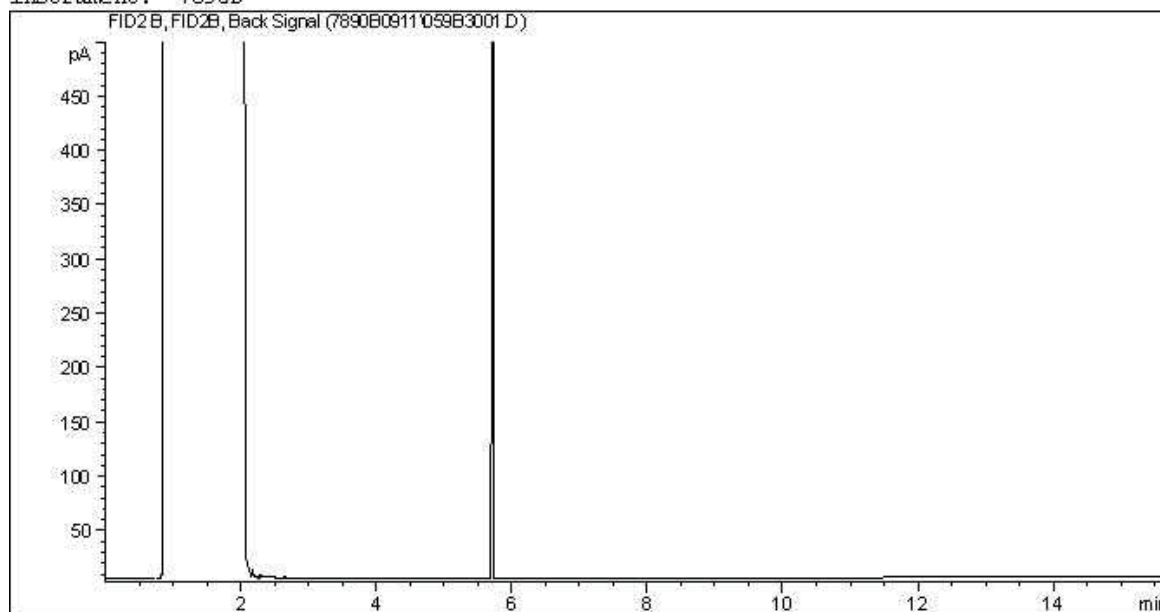
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Page 1 of 1

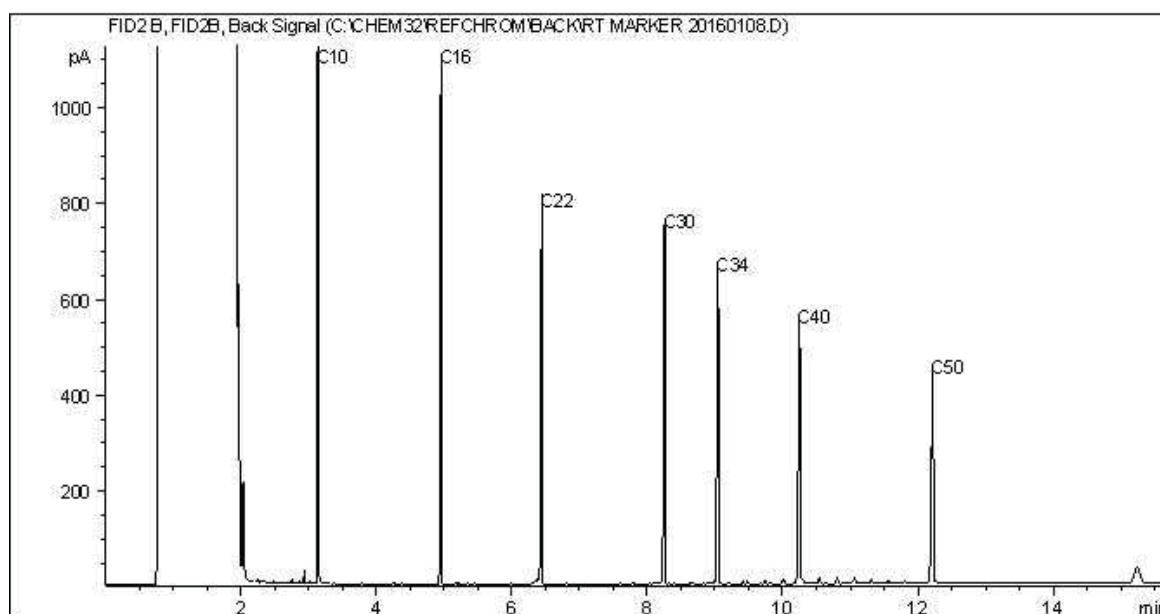
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CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: 7890B



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

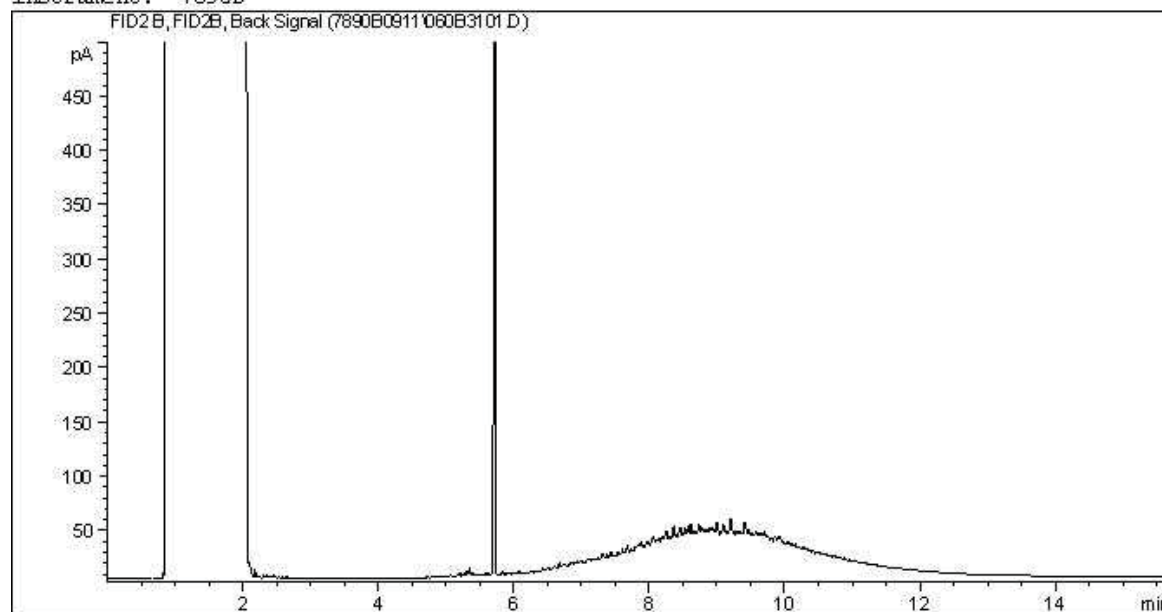
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Page 1 of 1

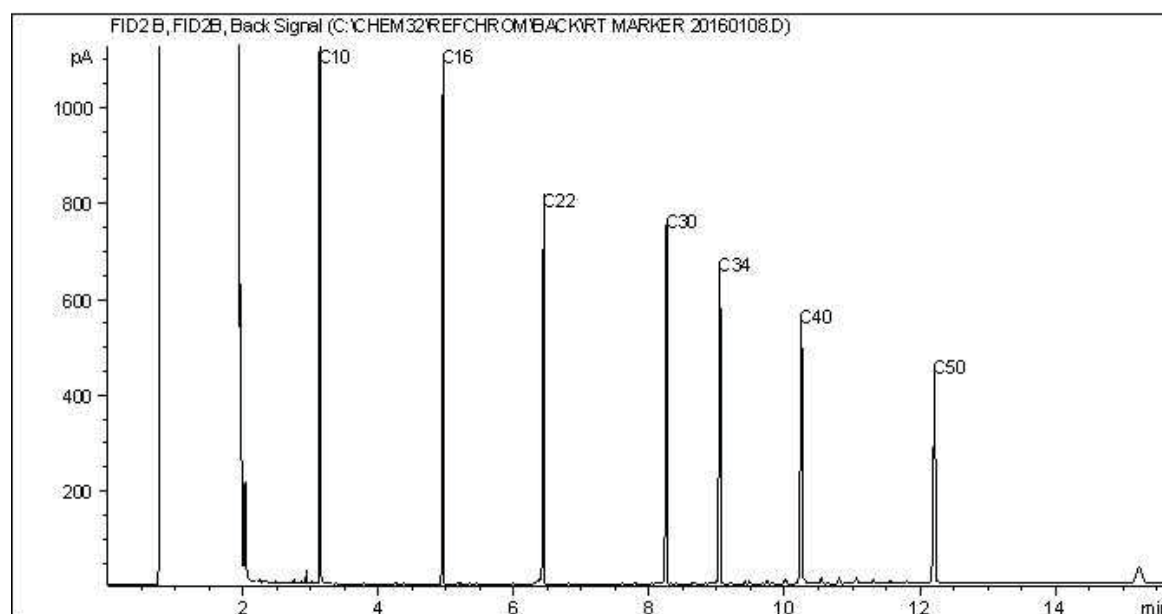
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: 7890B



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline: C4 - C12
 Varsol: C8 - C12
 Kerosene: C7 - C16

Diesel: C8 - C22
 Lubricating Oils: C20 - C40
 Crude Oils: C3 - C60+

Page 1 of 1

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

Norex Mine

Your Project #: 234.01016.00000/GREAT BEAR LAK
Site#: Norex
Site Location: NOREX
Your C.O.C. #: 504465-01-01

Attention:Katrina Nokleby

SLR CONSULTING (CANADA) LTD
#200 - 1620 WEST 8TH AVENUE
VANCOUVER, BC
Canada V6J 1V4

Report Date: 2017/04/10
Report #: R2367577
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B678004

Received: 2016/09/07, 08:40

Sample Matrix: Water
Samples Received: 10

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO ₃ ,HCO ₃ ,OH	10	N/A	2016/09/10	AB SOP-00005	SM 22 2320 B m
BTEX/F1 in Water by HS GC/MS/FID	3	N/A	2016/09/12	AB SOP-00039	CCME CWS/EPA 8260c m
Chloride by Automated Colourimetry	10	N/A	2016/09/12	AB SOP-00020	SM 22 4500-Cl G m
Chloride (Cl) and Sulphate (SO ₄) by IC	1	N/A	2016/09/12	AB SOP-00026	SM 22 4110 B m
Carbon (DOC) (2)	10	N/A	2016/09/14	EENVSOP-00060	MMCW 119 1996 m
Conductivity @25C	10	N/A	2016/09/10	AB SOP-00005	SM 22 2510 B m
CCME Hydrocarbons (F2-F4 in water) (3)	2	2016/09/11	2016/09/11	AB SOP-00037 / AB SOP-00040	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4 in water) (3)	1	2016/09/11	2016/09/12	AB SOP-00037 / AB SOP-00040	CCME PHC-CWS m
Hardness Total (calculated as CaCO ₃) (1)	10	N/A	2016/09/15	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO ₃) (1)	2	N/A	2016/09/14	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO ₃) (1)	1	N/A	2016/09/16	BBY WI-00033	Auto Calc
Mercury (Dissolved) by CVAf (1)	3	N/A	2016/09/14	BBY7SOP-00015	BCMOE BCLM Oct2013 m
Mercury (Total) by CVAf (1)	10	2016/09/14	2016/09/14	BBY7SOP-00015	BCMOE BCLM Oct2013 m
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (1)	2	N/A	2016/09/14	BBY7SOP-00002	EPA 6020A R1 m
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (1)	1	N/A	2016/09/16	BBY7SOP-00002	EPA 6020A R1 m
Elements by CRC ICPMS (dissolved) (1)	3	N/A	2016/09/14	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (1)	10	2016/09/09	2016/09/15	BBY7SOP-00002	EPA 6020A R1 m
Elements by CRC ICPMS (total) (1)	5	2016/09/14	2016/09/14	BBY7SOP-00003,	BCLM2005,EPA6020bR2m
Elements by CRC ICPMS (total) (1)	5	2016/09/14	2016/09/15	BBY7SOP-00003,	BCLM2005,EPA6020bR2m
Ammonia-N (Total)	10	N/A	2016/09/12	AB SOP-00007	EPA 350.1 R2.0 m
Nitrate and Nitrite	10	N/A	2016/09/12	AB WI-00065	Auto Calc
Nitrate + Nitrite-N (calculated)	10	N/A	2016/09/12	AB WI-00065	Auto Calc
Nitrogen, (Nitrite, Nitrate) by IC (4)	9	N/A	2016/09/11	AB SOP-00023	SM 22 4110 B m
Nitrogen, (Nitrite, Nitrate) by IC (4)	1	N/A	2016/09/12	AB SOP-00023	SM 22 4110 B m
Filter and HNO ₃ Preserve for Metals (1)	3	N/A	2016/09/10	BBY7 WI-00004	BCMOE Reqs 08/14
pH @25°C (5)	10	N/A	2016/09/10	AB SOP-00005	SM 22 4500 H+ B m
Orthophosphate by Konelab (4)	10	N/A	2016/09/10	AB SOP-00025	SM 22 4500-P A,F m
Sulphate by Automated Colourimetry	9	N/A	2016/09/12	AB SOP-00018	SM 22 4500-SO ₄ E m
Total Dissolved Solids (Filt. Residue)	10	2016/09/10	2016/09/12	AB SOP-00065	SM 22 2540 C m

Your Project #: 234.01016.00000/GREAT BEAR LAK
Site#: Norex
Site Location: NOREX
Your C.O.C. #: 504465-01-01

Attention:Katrina Nokleby

SLR CONSULTING (CANADA) LTD
#200 - 1620 WEST 8TH AVENUE
VANCOUVER, BC
Canada V6J 1V4

Report Date: 2017/04/10
Report #: R2367577
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B678004

Received: 2016/09/07, 08:40

Sample Matrix: Water
Samples Received: 10

Analyses	Date		Date Analyzed	Laboratory Method	Analytical Method
	Quantity	Extracted			
Phosphorus -P (Total, Dissolved)	10	2016/09/13	2016/09/14	AB SOP-00024	SM 22 4500-P A,B,F m
Total Phosphorus	10	2016/09/13	2016/09/14	AB SOP-00024	SM 22 4500-P A,B,F m
Total Suspended Solids (NFR)	10	2016/09/10	2016/09/13	AB SOP-00061	SM 22 2540 D m
Turbidity (4)	9	N/A	2016/09/10	EENSOP-00066	SM 22 2130 B m
Turbidity (4)	1	N/A	2016/09/12	EENSOP-00066	SM 22 2130 B m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

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

Results relate to samples tested.

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

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

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

- (1) This test was performed by Maxxam Vancouver
- (2) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: Whenever applicable, Dissolved >Total for any parameter that falls within method uncertainty for duplicates is likely equivalent. If RPD is >20% samples were reanalyzed and confirmed.
- (3) Silica gel clean up employed.
- (4) Analysis completed within 48h after laboratory receipt to a maximum of five days from sampling is satisfactory for compliance purposes.
- (5) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Maxxam endeavours to analyze samples as soon as possible after receipt.

Your Project #: 234.01016.00000/GREAT BEAR LAK
Site#: Norex
Site Location: NOREX
Your C.O.C. #: 504465-01-01

Attention:Katrina Nokleby

SLR CONSULTING (CANADA) LTD
#200 - 1620 WEST 8TH AVENUE
VANCOUVER, BC
Canada V6J 1V4

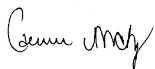
Report Date: 2017/04/10
Report #: R2367577
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B678004

Received: 2016/09/07, 08:40

Encryption Key



Carmen McKay
Project Manager
10 Apr 2017 11:31:44

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Carmen McKay, Project Manager

Email: CMcKay@maxxam.ca

Phone# (403)219-3683

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B678004
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000/GREAT BEAR LAK
Site Location: NOREX
Sampler Initials: DK, DP

AT1 BTEX AND F1-F4 IN WATER (WATER)

Maxxam ID		PL9682	PL9683		PL9689		
Sampling Date		2016/09/04 16:44	2016/09/04 16:25		2016/09/04 18:56		
COC Number		504465-01-01	504465-01-01		504465-01-01		
	UNITS	NOREX-2	NOREX-3	QC Batch	DUP E	RDL	QC Batch
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	1.3	8393923	<0.10	0.10	8393934
F3 (C16-C34 Hydrocarbons)	mg/L	<0.20	0.95	8393923	<0.20	0.20	8393934
F4 (C34-C50 Hydrocarbons)	mg/L	<0.20	<0.20	8393923	<0.20	0.20	8393934
Reached Baseline at C50	mg/L	Yes	Yes	8393923	Yes		8393934
Volatiles							
Benzene	ug/L	<0.40	<0.40	8394426	<0.40	0.40	8394426
Toluene	ug/L	<0.40	<0.40	8394426	<0.40	0.40	8394426
Ethylbenzene	ug/L	<0.40	<0.40	8394426	<0.40	0.40	8394426
m & p-Xylene	ug/L	<0.80	<0.80	8394426	<0.80	0.80	8394426
o-Xylene	ug/L	<0.40	<0.40	8394426	<0.40	0.40	8394426
Xylenes (Total)	ug/L	<0.80	<0.80	8394426	<0.80	0.80	8394426
F1 (C6-C10) - BTEX	ug/L	<100	<100	8394426	<100	100	8394426
F1 (C6-C10)	ug/L	<100	<100	8394426	<100	100	8394426
Surrogate Recovery (%)							
1,4-Difluorobenzene (sur.)	%	97	97	8394426	96		8394426
4-Bromofluorobenzene (sur.)	%	100	101	8394426	102		8394426
D4-1,2-Dichloroethane (sur.)	%	113	118	8394426	116		8394426
O-TERPHENYL (sur.)	%	95	92	8393923	92		8393934
RDL = Reportable Detection Limit							

Maxxam Job #: B678004
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000/GREAT BEAR LAK
Site Location: NOREX
Sampler Initials: DK, DP

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		PL9680			PL9681			PL9682		
Sampling Date		2016/09/04 15:48			2016/09/04 14:42			2016/09/04 16:44		
COC Number		504465-01-01			504465-01-01			504465-01-01		
	UNITS	NOREX-1	RDL	QC Batch	NOREX-6B	RDL	QC Batch	NOREX-2	RDL	QC Batch

Calculated Parameters

Filter and HNO ₃ Preservation	N/A	FIELD		ONSITE			ONSITE	FIELD		ONSITE
Dissolved Nitrate (NO ₃)	mg/L	<0.044	0.044	8393393	<0.22	0.22	8393393	1.7	0.044	8393393
Nitrate plus Nitrite (N)	mg/L	<0.020	0.020	8393394	<0.020	0.020	8393394	0.39	0.020	8393394
Dissolved Nitrite (NO ₂)	mg/L	<0.033	0.033	8393393	<0.16	0.16	8393393	<0.033	0.033	8393393

Misc. Inorganics

Conductivity	uS/cm	380	1.0	8393650	80	1.0	8393650	440	1.0	8393650
Dissolved Organic Carbon (C)	mg/L	6.3	0.50	8397504	110 (1)	10	8397504	4.6	0.50	8397504
pH	pH	8.05	N/A	8393648	4.96	N/A	8393648	7.97	N/A	8393648
Total Dissolved Solids	mg/L	180	10	8393581	300	10	8393581	240	10	8393581
Total Suspended Solids	mg/L	<1.0	1.0	8393553	26 (2)	1.5	8393553	2.0	1.0	8393553

Anions

Alkalinity (PP as CaCO ₃)	mg/L	<0.50	0.50	8393649	<0.50	0.50	8393649	<0.50	0.50	8393649
Alkalinity (Total as CaCO ₃)	mg/L	170	0.50	8393649	2.5	0.50	8393649	160	0.50	8393649
Bicarbonate (HCO ₃)	mg/L	200	0.50	8393649	3.1	0.50	8393649	190	0.50	8393649
Carbonate (CO ₃)	mg/L	<0.50	0.50	8393649	<0.50	0.50	8393649	<0.50	0.50	8393649
Hydroxide (OH)	mg/L	<0.50	0.50	8393649	<0.50	0.50	8393649	<0.50	0.50	8393649
Dissolved Sulphate (SO ₄)	mg/L	33	1.0	8393747	<0.50	0.50	8395381	68	1.0	8393747
Dissolved Chloride (Cl)	mg/L	1.2	1.0	8393743	8.3	1.0	8393743	1.3	1.0	8393743

Nutrients

Total Ammonia (N)	mg/L	0.25 (3)	0.0067	8395102	0.25 (3)	0.0067	8395102	0.034 (3)	0.0067	8395102
Orthophosphate (P)	mg/L	0.0040	0.0030	8393566	0.11	0.0030	8393566	0.015	0.0030	8393566
Dissolved Phosphorus (P)	mg/L	<0.0030	0.0030	8396069	0.0050	0.0030	8396069	0.0040	0.0030	8396069
Total Phosphorus (P)	mg/L	<0.0030	0.0030	8396141	0.56 (1)	0.015	8396141	0.0080	0.0030	8396141
Dissolved Nitrite (N)	mg/L	<0.010	0.010	8394155	<0.050 (4)	0.050	8394155	<0.010	0.010	8394155
Dissolved Nitrate (N)	mg/L	<0.010	0.010	8394155	<0.050 (4)	0.050	8394155	0.39	0.010	8394155

Physical Properties

Turbidity	NTU	3.9	0.10	8393958	12	0.10	8393958	0.42	0.10	8393958
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RDL = Reportable Detection Limit

N/A = Not Applicable

- (1) Detection limits raised due to dilution to bring analyte within the calibrated range.
- (2) Detection limit raised based on sample volume used for analysis.
- (3) Detection limit for ammonia calculated based on method detection limits (MDL) by client request.
- (4) Detection limits raised due to sample matrix.

Maxxam Job #: B678004
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000/GREAT BEAR LAK
Site Location: NOREX
Sampler Initials: DK, DP

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		PL9683		PL9684	PL9685		PL9686		
Sampling Date		2016/09/04 16:25		2016/09/04 18:38	2016/09/04 13:57		2016/09/04 14:25		
COC Number		504465-01-01		504465-01-01	504465-01-01		504465-01-01		
	UNITS	NOREX-3	RDL	NX-4A	NOREX-5	RDL	NOREX-6	RDL	QC Batch
Calculated Parameters									
Filter and HNO3 Preservation	N/A	FIELD							ONSITE
Dissolved Nitrate (NO3)	mg/L	<0.044	0.044	<0.044	0.56	0.044	0.070	0.044	8393393
Nitrate plus Nitrite (N)	mg/L	<0.020	0.020	<0.020	0.13	0.020	<0.020	0.020	8393394
Dissolved Nitrite (NO2)	mg/L	<0.033	0.033	<0.033	<0.033	0.033	<0.033	0.033	8393393
Misc. Inorganics									
Conductivity	uS/cm	640	1.0	400	220	1.0	47	1.0	8393650
Dissolved Organic Carbon (C)	mg/L	14	0.50	8.6	5.4	0.50	18 (1)	1.0	8397504
pH	pH	6.95	N/A	7.87	7.76	N/A	6.94	N/A	8393648
Total Dissolved Solids	mg/L	260 (2)	50	220	88	10	12	10	8393581
Total Suspended Solids	mg/L	5.3	1.0	5.3	2.0	1.0	110	1.0	8393553
Anions									
Alkalinity (PP as CaCO3)	mg/L	<0.50	0.50	<0.50	<0.50	0.50	<0.50	0.50	8393649
Alkalinity (Total as CaCO3)	mg/L	68	0.50	150	59	0.50	17	0.50	8393649
Bicarbonate (HCO3)	mg/L	82	0.50	190	72	0.50	20	0.50	8393649
Carbonate (CO3)	mg/L	<0.50	0.50	<0.50	<0.50	0.50	<0.50	0.50	8393649
Hydroxide (OH)	mg/L	<0.50	0.50	<0.50	<0.50	0.50	<0.50	0.50	8393649
Dissolved Sulphate (SO4)	mg/L	240 (3)	5.0	52	49	1.0	<1.0	1.0	8393747
Dissolved Chloride (Cl)	mg/L	2.5	1.0	1.3	<1.0	1.0	<1.0	1.0	8393743
Nutrients									
Total Ammonia (N)	mg/L	0.14 (4)	0.0067	0.036 (4)	0.025 (4)	0.0067	0.053 (4)	0.0067	8395102
Orthophosphate (P)	mg/L	0.0060	0.0030	<0.0030	0.012	0.0030	<0.0030	0.0030	8393566
Dissolved Phosphorus (P)	mg/L	0.0030	0.0030	<0.0030	<0.0030	0.0030	0.011	0.0030	8396069
Total Phosphorus (P)	mg/L	0.034	0.0030	0.0070	0.0080	0.0030	0.094	0.0030	8396141
Dissolved Nitrite (N)	mg/L	<0.010	0.010	<0.010	<0.010	0.010	<0.010	0.010	8394155
Dissolved Nitrate (N)	mg/L	<0.010	0.010	<0.010	0.13	0.010	0.016	0.010	8394155
Physical Properties									
Turbidity	NTU	11	0.10	0.71	0.89	0.10	23	0.10	8393958
RDL = Reportable Detection Limit N/A = Not Applicable (1) Detection limits raised due to matrix interference. (2) Detection limit raised based on sample volume used for analysis. (3) Detection limits raised due to dilution to bring analyte within the calibrated range. (4) Detection limit for ammonia calculated based on method detection limits (MDL) by client request.									

Maxxam Job #: B678004
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000/GREAT BEAR LAK
Site Location: NOREX
Sampler Initials: DK, DP

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		PL9687		PL9688		PL9689		
Sampling Date				2016/09/04 18:38		2016/09/04 18:56		
COC Number		504465-01-01		504465-01-01		504465-01-01		
	UNITS	TRIP BLANK	QC Batch	DUP 8	QC Batch	DUP E	RDL	QC Batch
Calculated Parameters								
Dissolved Nitrate (NO ₃)	mg/L	<0.044	8393393	<0.044	8393393	<0.044	0.044	8393393
Nitrate plus Nitrite (N)	mg/L	<0.020	8393394	<0.020	8393394	<0.020	0.020	8393394
Dissolved Nitrite (NO ₂)	mg/L	<0.033	8393393	<0.033	8393393	<0.033	0.033	8393393
Misc. Inorganics								
Conductivity	uS/cm	<1.0	8393650	400	8393650	<1.0	1.0	8393650
Dissolved Organic Carbon (C)	mg/L	<0.50	8397504	9.3	8397504	2.2	0.50	8397504
pH	pH	4.94	8393648	7.88	8393648	5.10	N/A	8393648
Total Dissolved Solids	mg/L	<10	8393581	200	8393581	<10	10	8393581
Total Suspended Solids	mg/L	<1.0	8393553	4.7	8393553	<1.0	1.0	8393556
Anions								
Alkalinity (PP as CaCO ₃)	mg/L	<0.50	8393649	<0.50	8393649	<0.50	0.50	8393649
Alkalinity (Total as CaCO ₃)	mg/L	<0.50	8393649	150	8393649	<0.50	0.50	8393649
Bicarbonate (HCO ₃)	mg/L	<0.50	8393649	180	8393649	<0.50	0.50	8393649
Carbonate (CO ₃)	mg/L	<0.50	8393649	<0.50	8393649	<0.50	0.50	8393649
Hydroxide (OH)	mg/L	<0.50	8393649	<0.50	8393649	<0.50	0.50	8393649
Dissolved Sulphate (SO ₄)	mg/L	<1.0	8393747	59	8393747	<1.0	1.0	8393747
Dissolved Chloride (Cl)	mg/L	<1.0	8393743	1.6	8393743	<1.0	1.0	8393743
Nutrients								
Total Ammonia (N)	mg/L	0.022 (1)	8395102	0.026 (1)	8395102	0.017 (1)	0.0067	8395102
Orthophosphate (P)	mg/L	<0.0030	8393566	<0.0030	8393566	<0.0030	0.0030	8393566
Dissolved Phosphorus (P)	mg/L	<0.0030	8396069	<0.0030	8396069	<0.0030	0.0030	8396069
Total Phosphorus (P)	mg/L	<0.0030	8396141	0.0040	8396141	<0.0030	0.0030	8396141
Dissolved Nitrite (N)	mg/L	<0.010	8394155	<0.010	8394155	<0.010	0.010	8394155
Dissolved Nitrate (N)	mg/L	<0.010	8394155	<0.010	8394155	<0.010	0.010	8394155
Physical Properties								
Turbidity	NTU	<0.10	8394335	0.94	8393958	0.10	0.10	8393958
RDL = Reportable Detection Limit								
N/A = Not Applicable								
(1) Detection limit for ammonia calculated based on method detection limits (MDL) by client request.								

Maxxam Job #: B678004
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000/GREAT BEAR LAK
Site Location: NOREX
Sampler Initials: DK, DP

CSR/CCME DISS. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL9680	PL9682		PL9683		
Sampling Date		2016/09/04 15:48	2016/09/04 16:44		2016/09/04 16:25		
COC Number		504465-01-01	504465-01-01		504465-01-01		
	UNITS	NOREX-1	NOREX-2	QC Batch	NOREX-3	RDL	QC Batch
Misc. Inorganics							
Dissolved Hardness (CaCO ₃)	mg/L	162	195	8392954	219	0.50	8399253
Elements							
Dissolved Mercury (Hg)	ug/L	0.012	<0.010	8397844	<0.010	0.010	8397844
Dissolved Metals by ICPMS							
Dissolved Aluminum (Al)	ug/L	5.3	6.8	8397229	13.4	3.0	8397229
Dissolved Antimony (Sb)	ug/L	<0.50	0.71	8397229	<0.50	0.50	8397229
Dissolved Arsenic (As)	ug/L	56.4	50.9	8397229	24.7	0.10	8397229
Dissolved Barium (Ba)	ug/L	52.6	37.9	8397229	24.2	1.0	8397229
Dissolved Beryllium (Be)	ug/L	<0.10	<0.10	8397229	<0.10	0.10	8397229
Dissolved Bismuth (Bi)	ug/L	<1.0	<1.0	8397229	<1.0	1.0	8397229
Dissolved Boron (B)	ug/L	89	86	8397229	62	50	8397229
Dissolved Cadmium (Cd)	ug/L	<0.010	0.384	8397229	<0.010	0.010	8397229
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	8397229	<1.0	1.0	8397229
Dissolved Cobalt (Co)	ug/L	1.19	11.5	8397229	22.7	0.50	8397229
Dissolved Copper (Cu)	ug/L	<0.20	3.47	8397229	<0.20	0.20	8397229
Dissolved Iron (Fe)	ug/L	1570	19.0	8397229	715	5.0	8397229
Dissolved Lead (Pb)	ug/L	1.34	5.58	8397229	1.15	0.20	8397229
Dissolved Lithium (Li)	ug/L	11.8	11.1	8397229	7.3	5.0	8397229
Dissolved Manganese (Mn)	ug/L	296	31.9	8397229	562	1.0	8397229
Dissolved Molybdenum (Mo)	ug/L	14.7	14.3	8397229	8.4 (1)	1.0	8400311
Dissolved Nickel (Ni)	ug/L	<1.0	6.6	8397229	5.7	1.0	8397229
Dissolved Selenium (Se)	ug/L	<0.10	0.18	8397229	0.12	0.10	8397229
Dissolved Silicon (Si)	ug/L	4800	4870	8397229	4160	100	8397229
Dissolved Silver (Ag)	ug/L	<0.020	<0.020	8397229	<0.020	0.020	8397229
Dissolved Strontium (Sr)	ug/L	266	257	8397229	174	1.0	8397229
Dissolved Thallium (Tl)	ug/L	<0.050	<0.050	8397229	<0.050	0.050	8397229
Dissolved Tin (Sn)	ug/L	<5.0	<5.0	8397229	<5.0	5.0	8397229
Dissolved Titanium (Ti)	ug/L	<5.0	<5.0	8397229	<5.0	5.0	8397229
Dissolved Uranium (U)	ug/L	9.37	7.60	8397229	0.89 (1)	0.10	8400311
Dissolved Vanadium (V)	ug/L	<5.0	<5.0	8397229	<5.0	5.0	8397229
RDL = Reportable Detection Limit							
(1) Dissolved greater than total. Reanalysis yields similar results.							

Maxxam Job #: B678004
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000/GREAT BEAR LAK
Site Location: NOREX
Sampler Initials: DK, DP

CSR/CCME DISS. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL9680	PL9682		PL9683		
Sampling Date		2016/09/04 15:48	2016/09/04 16:44		2016/09/04 16:25		
COC Number		504465-01-01	504465-01-01		504465-01-01		
	UNITS	NOREX-1	NOREX-2	QC Batch	NOREX-3	RDL	QC Batch
Dissolved Zinc (Zn)	ug/L	<5.0	438	8397229	14.2	5.0	8397229
Dissolved Zirconium (Zr)	ug/L	0.60	<0.50	8397229	<0.50	0.50	8397229
Dissolved Calcium (Ca)	mg/L	47.8	60.0	8392313	70.0	0.050	8399332
Dissolved Magnesium (Mg)	mg/L	10.3	11.1	8392313	10.8	0.050	8399332
Dissolved Potassium (K)	mg/L	2.46	2.46	8392313	1.65	0.050	8399332
Dissolved Sodium (Na)	mg/L	15.1	14.4	8392313	10.7 (1)	0.050	8399332
Dissolved Sulphur (S)	mg/L	12.7	22.1	8392313	47.0	3.0	8399332
RDL = Reportable Detection Limit							
(1) Dissolved greater than total. Reanalysis yields similar results.							

Maxxam Job #: B678004
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000/GREAT BEAR LAK
Site Location: NOREX
Sampler Initials: DK, DP

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL9680			PL9681			PL9682		
Sampling Date		2016/09/04 15:48			2016/09/04 14:42			2016/09/04 16:44		
COC Number		504465-01-01			504465-01-01			504465-01-01		
	UNITS	NOREX-1	RDL	QC Batch	NOREX-6B	RDL	QC Batch	NOREX-2	RDL	QC Batch
Calculated Parameters										
Total Hardness (CaCO ₃)	mg/L	167	0.50	8392870	53.0	0.50	8392870	205	0.50	8392870
Elements										
Total Mercury (Hg)	ug/L	<0.010	0.010	8397837	0.047 (1)	0.020	8397837	<0.010	0.010	8397837
Total Metals by ICPMS										
Total Aluminum (Al)	ug/L	3.6	3.0	8397762	792	3.0	8397651	4.8	3.0	8397762
Total Antimony (Sb)	ug/L	<0.50	0.50	8397762	<0.50	0.50	8397651	0.76	0.50	8397762
Total Arsenic (As)	ug/L	65.3	0.10	8397762	327	0.10	8397651	50.6	0.10	8397762
Total Barium (Ba)	ug/L	55.4	1.0	8397762	16.4	1.0	8397651	37.5	1.0	8397762
Total Beryllium (Be)	ug/L	<0.10	0.10	8397762	<0.10	0.10	8397651	<0.10	0.10	8397762
Total Bismuth (Bi)	ug/L	<1.0	1.0	8397762	1.9	1.0	8397651	<1.0	1.0	8397762
Total Boron (B)	ug/L	95	50	8397762	<50	50	8397651	85	50	8397762
Total Cadmium (Cd)	ug/L	0.011	0.010	8397762	0.400	0.010	8397651	0.620	0.010	8397762
Total Chromium (Cr)	ug/L	<1.0	1.0	8397762	2.2	1.0	8397651	<1.0	1.0	8397762
Total Cobalt (Co)	ug/L	1.18	0.50	8397762	28.2	0.50	8397651	11.8	0.50	8397762
Total Copper (Cu)	ug/L	<0.50	0.50	8397762	49.0	0.50	8397651	9.94	0.50	8397762
Total Iron (Fe)	ug/L	2010	10	8397762	2900	10	8397651	33	10	8397762
Total Lead (Pb)	ug/L	16.9	0.20	8397762	29.2	0.20	8397651	8.47	0.20	8397762
Total Lithium (Li)	ug/L	11.0	5.0	8397762	9.3	5.0	8397651	11.2	5.0	8397762
Total Manganese (Mn)	ug/L	295	1.0	8397762	361	1.0	8397651	35.2	1.0	8397762
Total Molybdenum (Mo)	ug/L	15.2	1.0	8397762	<1.0	1.0	8397651	15.2	1.0	8397762
Total Nickel (Ni)	ug/L	<1.0	1.0	8397762	18.7	1.0	8397651	7.0	1.0	8397762
Total Selenium (Se)	ug/L	<0.10	0.10	8397762	0.29	0.10	8397651	0.22	0.10	8397762
Total Silicon (Si)	ug/L	4910	100	8397762	1210	100	8397651	5010	100	8397762
Total Silver (Ag)	ug/L	<0.020	0.020	8397762	1.77	0.020	8397651	<0.020	0.020	8397762
Total Strontium (Sr)	ug/L	266	1.0	8397762	23.3	1.0	8397651	262	1.0	8397762
Total Thallium (Tl)	ug/L	<0.050	0.050	8397762	<0.050	0.050	8397651	<0.050	0.050	8397762
Total Tin (Sn)	ug/L	<5.0	5.0	8397762	<5.0	5.0	8397651	<5.0	5.0	8397762
Total Titanium (Ti)	ug/L	<5.0	5.0	8397762	<5.0	5.0	8397651	<5.0	5.0	8397762
Total Uranium (U)	ug/L	9.73	0.10	8397762	<0.10	0.10	8397651	7.95	0.10	8397762
Total Vanadium (V)	ug/L	<5.0	5.0	8397762	<5.0	5.0	8397651	<5.0	5.0	8397762
RDL = Reportable Detection Limit										
(1) sample diluted due to matrix interference										

Maxxam Job #: B678004
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000/GREAT BEAR LAK
Site Location: NOREX
Sampler Initials: DK, DP

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL9680			PL9681			PL9682		
Sampling Date		2016/09/04 15:48			2016/09/04 14:42			2016/09/04 16:44		
COC Number		504465-01-01			504465-01-01			504465-01-01		
	UNITS	NOREX-1	RDL	QC Batch	NOREX-6B	RDL	QC Batch	NOREX-2	RDL	QC Batch
Total Zinc (Zn)	ug/L	10.9	5.0	8397762	755	5.0	8397651	431	5.0	8397762
Total Zirconium (Zr)	ug/L	0.66	0.50	8397762	<0.50	0.50	8397651	<0.50	0.50	8397762
Total Calcium (Ca)	mg/L	51.0	0.050	8392257	11.4	0.050	8392257	64.5	0.050	8392257
Total Magnesium (Mg)	mg/L	9.69	0.050	8392257	5.97	0.050	8392257	10.6	0.050	8392257
Total Potassium (K)	mg/L	2.37	0.050	8392257	1.84	0.050	8392257	2.53	0.050	8392257
Total Sodium (Na)	mg/L	14.7	0.050	8392257	2.08	0.050	8392257	14.3	0.050	8392257
Total Sulphur (S)	mg/L	10.6	3.0	8392257	<3.0	3.0	8392257	23.3	3.0	8392257
RDL = Reportable Detection Limit										

Maxxam Job #: B678004
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000/GREAT BEAR LAK
Site Location: NOREX
Sampler Initials: DK, DP

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL9683	PL9684		PL9685		PL9686		
Sampling Date		2016/09/04 16:25	2016/09/04 18:38		2016/09/04 13:57		2016/09/04 14:25		
COC Number		504465-01-01	504465-01-01		504465-01-01		504465-01-01		
	UNITS	NOREX-3	NX-4A	QC Batch	NOREX-5	QC Batch	NOREX-6	RDL	QC Batch
Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L	306	200	8392870	105	8392870	27.5	0.50	8392870
Elements									
Total Mercury (Hg)	ug/L	<0.010	0.017	8397837	0.011	8397837	<0.010	0.010	8397837
Total Metals by ICPMS									
Total Aluminum (Al)	ug/L	33.4	2280	8397651	7.8	8397762	150	3.0	8397651
Total Antimony (Sb)	ug/L	0.92	<0.50	8397651	4.53	8397762	<0.50	0.50	8397651
Total Arsenic (As)	ug/L	21.2	38.8	8397651	78.1	8397762	3.88	0.10	8397651
Total Barium (Ba)	ug/L	28.1	90.5	8397651	7.2	8397762	40.3	1.0	8397651
Total Beryllium (Be)	ug/L	<0.10	0.12	8397651	<0.10	8397762	<0.10	0.10	8397651
Total Bismuth (Bi)	ug/L	<1.0	<1.0	8397651	<1.0	8397762	<1.0	1.0	8397651
Total Boron (B)	ug/L	<50	62	8397651	<50	8397762	<50	50	8397651
Total Cadmium (Cd)	ug/L	2.09	0.353	8397651	0.678	8397762	0.097	0.010	8397651
Total Chromium (Cr)	ug/L	<1.0	3.9	8397651	<1.0	8397762	<1.0	1.0	8397651
Total Cobalt (Co)	ug/L	91.0	8.69	8397651	7.21	8397762	2.23	0.50	8397651
Total Copper (Cu)	ug/L	2.23	8.40	8397651	38.5	8397762	7.92	0.50	8397651
Total Iron (Fe)	ug/L	2720	5000	8397651	36	8397762	1310	10	8397651
Total Lead (Pb)	ug/L	47.8	6.56	8397651	40.9	8397762	10.4	0.20	8397651
Total Lithium (Li)	ug/L	6.4	11.8	8397651	<5.0	8397762	<5.0	5.0	8397651
Total Manganese (Mn)	ug/L	1570	3610	8397651	54.0	8397762	119	1.0	8397651
Total Molybdenum (Mo)	ug/L	3.7	7.5	8397651	6.4	8397762	<1.0	1.0	8397651
Total Nickel (Ni)	ug/L	19.0	8.4	8397651	12.7	8397762	1.6	1.0	8397651
Total Selenium (Se)	ug/L	0.41	<0.10	8397651	1.20	8397762	<0.10	0.10	8397651
Total Silicon (Si)	ug/L	4410	9750	8397651	1680	8397762	286	100	8397651
Total Silver (Ag)	ug/L	0.033	0.023	8397651	0.365	8397762	0.065	0.020	8397651
Total Strontium (Sr)	ug/L	148	224	8397651	16.5	8397762	16.5	1.0	8397651
Total Thallium (Tl)	ug/L	<0.050	<0.050	8397651	<0.050	8397762	<0.050	0.050	8397651
Total Tin (Sn)	ug/L	<5.0	<5.0	8397651	<5.0	8397762	<5.0	5.0	8397651
Total Titanium (Ti)	ug/L	<5.0	99.3	8397651	<5.0	8397762	<5.0	5.0	8397651
Total Uranium (U)	ug/L	0.48	4.16	8397651	1.30	8397762	0.14	0.10	8397651
Total Vanadium (V)	ug/L	<5.0	5.5	8397651	<5.0	8397762	<5.0	5.0	8397651
Total Zinc (Zn)	ug/L	2630	327	8397651	587	8397762	69.4	5.0	8397651
RDL = Reportable Detection Limit									

Maxxam Job #: B678004
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000/GREAT BEAR LAK
Site Location: NOREX
Sampler Initials: DK, DP

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL9683	PL9684		PL9685		PL9686		
Sampling Date		2016/09/04 16:25	2016/09/04 18:38		2016/09/04 13:57		2016/09/04 14:25		
COC Number		504465-01-01	504465-01-01		504465-01-01		504465-01-01		
	UNITS	NOREX-3	NX-4A	QC Batch	NOREX-5	QC Batch	NOREX-6	RDL	QC Batch
Total Zirconium (Zr)	ug/L	<0.50	0.78	8397651	<0.50	8397762	<0.50	0.50	8397651
Total Calcium (Ca)	mg/L	101	61.3	8392257	31.6	8392257	7.32	0.050	8392257
Total Magnesium (Mg)	mg/L	13.1	11.4	8392257	6.39	8392257	2.25	0.050	8392257
Total Potassium (K)	mg/L	2.58	2.01	8392257	0.897	8392257	1.65	0.050	8392257
Total Sodium (Na)	mg/L	8.72	12.5	8392257	1.05	8392257	2.40	0.050	8392257
Total Sulphur (S)	mg/L	79.9	14.2	8392257	17.1	8392257	<3.0	3.0	8392257
RDL = Reportable Detection Limit									

Maxxam Job #: B678004
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000/GREAT BEAR LAK
Site Location: NOREX
Sampler Initials: DK, DP

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL9687		PL9688		PL9689		
Sampling Date				2016/09/04 18:38		2016/09/04 18:56		
COC Number		504465-01-01		504465-01-01		504465-01-01		
	UNITS	TRIP BLANK	QC Batch	DUP 8	QC Batch	DUP E	RDL	QC Batch
Calculated Parameters								
Total Hardness (CaCO ₃)	mg/L	<0.50	8392870	197	8392870	<0.50	0.50	8392870
Elements								
Total Mercury (Hg)	ug/L	<0.010	8397837	<0.010	8397837	<0.010	0.010	8397837
Total Metals by ICPMS								
Total Aluminum (Al)	ug/L	<3.0	8397762	2470	8397651	<3.0	3.0	8397762
Total Antimony (Sb)	ug/L	<0.50	8397762	<0.50	8397651	<0.50	0.50	8397762
Total Arsenic (As)	ug/L	<0.10	8397762	41.1	8397651	<0.10	0.10	8397762
Total Barium (Ba)	ug/L	<1.0	8397762	89.9	8397651	<1.0	1.0	8397762
Total Beryllium (Be)	ug/L	<0.10	8397762	0.11	8397651	<0.10	0.10	8397762
Total Bismuth (Bi)	ug/L	<1.0	8397762	<1.0	8397651	<1.0	1.0	8397762
Total Boron (B)	ug/L	<50	8397762	62	8397651	<50	50	8397762
Total Cadmium (Cd)	ug/L	<0.010	8397762	0.283	8397651	<0.010	0.010	8397762
Total Chromium (Cr)	ug/L	<1.0	8397762	4.4	8397651	<1.0	1.0	8397762
Total Cobalt (Co)	ug/L	<0.50	8397762	8.60	8397651	<0.50	0.50	8397762
Total Copper (Cu)	ug/L	<0.50	8397762	7.94	8397651	<0.50	0.50	8397762
Total Iron (Fe)	ug/L	<10	8397762	5260	8397651	<10	10	8397762
Total Lead (Pb)	ug/L	<0.20	8397762	6.17	8397651	<0.20	0.20	8397762
Total Lithium (Li)	ug/L	<5.0	8397762	12.1	8397651	<5.0	5.0	8397762
Total Manganese (Mn)	ug/L	<1.0	8397762	3590	8397651	<1.0	1.0	8397762
Total Molybdenum (Mo)	ug/L	<1.0	8397762	9.0	8397651	<1.0	1.0	8397762
Total Nickel (Ni)	ug/L	<1.0	8397762	8.3	8397651	<1.0	1.0	8397762
Total Selenium (Se)	ug/L	<0.10	8397762	0.12	8397651	<0.10	0.10	8397762
Total Silicon (Si)	ug/L	<100	8397762	9980	8397651	<100	100	8397762
Total Silver (Ag)	ug/L	<0.020	8397762	0.024	8397651	<0.020	0.020	8397762
Total Strontium (Sr)	ug/L	<1.0	8397762	224	8397651	<1.0	1.0	8397762
Total Thallium (Tl)	ug/L	<0.050	8397762	<0.050	8397651	<0.050	0.050	8397762
Total Tin (Sn)	ug/L	<5.0	8397762	<5.0	8397651	<5.0	5.0	8397762
Total Titanium (Ti)	ug/L	<5.0	8397762	108	8397651	<5.0	5.0	8397762
Total Uranium (U)	ug/L	<0.10	8397762	3.95	8397651	<0.10	0.10	8397762
Total Vanadium (V)	ug/L	<5.0	8397762	5.8	8397651	<5.0	5.0	8397762
Total Zinc (Zn)	ug/L	<5.0	8397762	310	8397651	<5.0	5.0	8397762
RDL = Reportable Detection Limit								

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SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000/GREAT BEAR LAK
Site Location: NOREX
Sampler Initials: DK, DP

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL9687		PL9688		PL9689		
Sampling Date				2016/09/04 18:38		2016/09/04 18:56		
COC Number		504465-01-01		504465-01-01		504465-01-01		
	UNITS	TRIP BLANK	QC Batch	DUP 8	QC Batch	DUP E	RDL	QC Batch
Total Zirconium (Zr)	ug/L	<0.50	8397762	0.62	8397651	<0.50	0.50	8397762
Total Calcium (Ca)	mg/L	<0.050	8392257	59.4	8392257	0.135	0.050	8392257
Total Magnesium (Mg)	mg/L	<0.050	8392257	11.8	8392257	<0.050	0.050	8392257
Total Potassium (K)	mg/L	<0.050	8392257	2.02	8392257	<0.050	0.050	8392257
Total Sodium (Na)	mg/L	<0.050	8392257	13.2	8392257	<0.050	0.050	8392257
Total Sulphur (S)	mg/L	<3.0	8392257	16.4	8392257	<3.0	3.0	8392257
RDL = Reportable Detection Limit								

Maxxam Job #: B678004
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000/GREAT BEAR LAK
Site Location: NOREX
Sampler Initials: DK, DP

GENERAL COMMENTS

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

Package 1	7.0°C
Package 2	3.7°C
Package 3	2.7°C
Package 4	6.0°C
Package 5	4.7°C
Package 6	6.0°C
Package 7	3.3°C
Package 8	3.3°C
Package 9	4.0°C
Package 10	5.3°C
Package 11	5.7°C
Package 12	5.0°C

Detection limit for ammonia calculated based on method detection limits (MDL) by client request.

Report revised to include updated detection limits for Ammonia, per client request 2017/04/10

Sample PL9680 [NOREX-1] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL9681 [NOREX-6B] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL9682 [NOREX-2] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL9683 [NOREX-3] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL9684 [NX-4A] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL9685 [NOREX-5] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL9686 [NOREX-6] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL9688 [DUP 8] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

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SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000/GREAT BEAR LAK
Site Location: NOREX
Sampler Initials: DK, DP

Sample PL9689 [DUP E] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL9683, Elements by CRC ICPMS (dissolved): Test repeated.

Results relate only to the items tested.

Maxxam Job #: B678004
Report Date: 2017/04/10

QUALITY ASSURANCE REPORT

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000/GREAT BEAR LAK
Site Location: NOREX
Sampler Initials: DK, DP

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8393923	O-TERPHENYL (sur.)	2016/09/11	96	60 - 130	103	60 - 130	95	%				
8393934	O-TERPHENYL (sur.)	2016/09/12	118	60 - 130	112	60 - 130	101	%				
8394426	1,4-Difluorobenzene (sur.)	2016/09/12	93	70 - 130	94	70 - 130	96	%				
8394426	4-Bromofluorobenzene (sur.)	2016/09/12	101	70 - 130	100	70 - 130	100	%				
8394426	D4-1,2-Dichloroethane (sur.)	2016/09/12	115	70 - 130	114	70 - 130	111	%				
8393553	Total Suspended Solids	2016/09/13	98	80 - 120	99	80 - 120	<1.0	mg/L	0	20		
8393556	Total Suspended Solids	2016/09/13	NC	80 - 120	100	80 - 120	<1.0	mg/L	1.6	20		
8393566	Orthophosphate (P)	2016/09/10	101	80 - 120	103	80 - 120	<0.0030	mg/L	NC	20		
8393581	Total Dissolved Solids	2016/09/12	100	80 - 120	97	80 - 120	<10	mg/L	NC	20		
8393648	pH	2016/09/10			100	97 - 103			0.18	N/A		
8393649	Alkalinity (PP as CaCO3)	2016/09/10					<0.50	mg/L	NC	20		
8393649	Alkalinity (Total as CaCO3)	2016/09/10			98	80 - 120	<0.50	mg/L	1.3	20		
8393649	Bicarbonate (HCO3)	2016/09/10					<0.50	mg/L	1.3	20		
8393649	Carbonate (CO3)	2016/09/10					<0.50	mg/L	NC	20		
8393649	Hydroxide (OH)	2016/09/10					<0.50	mg/L	NC	20		
8393650	Conductivity	2016/09/10			100	90 - 110	<1.0	uS/cm	0	10		
8393743	Dissolved Chloride (Cl)	2016/09/12	115	80 - 120	104	80 - 120	<1.0	mg/L	8.1	20		
8393747	Dissolved Sulphate (SO4)	2016/09/12	NC	80 - 120	107	80 - 120	<1.0	mg/L	0.0030	20		
8393923	F2 (C10-C16 Hydrocarbons)	2016/09/11	101	60 - 130	108	70 - 130	<0.10	mg/L	NC	30		
8393923	F3 (C16-C34 Hydrocarbons)	2016/09/11	101	60 - 130	109	70 - 130	<0.20	mg/L	NC	30		
8393923	F4 (C34-C50 Hydrocarbons)	2016/09/11	95	60 - 130	101	70 - 130	<0.20	mg/L	NC	30		
8393934	F2 (C10-C16 Hydrocarbons)	2016/09/12	129	60 - 130	121	70 - 130	<0.10	mg/L	NC	30		
8393934	F3 (C16-C34 Hydrocarbons)	2016/09/12	125	60 - 130	120	70 - 130	<0.20	mg/L	NC	30		
8393934	F4 (C34-C50 Hydrocarbons)	2016/09/12	114	60 - 130	108	70 - 130	<0.20	mg/L	NC	30		
8393958	Turbidity	2016/09/10			100	80 - 120	<0.10	NTU	0.96	20		
8394155	Dissolved Nitrate (N)	2016/09/12	105	80 - 120	103	80 - 120	<0.010	mg/L	NC	20		
8394155	Dissolved Nitrite (N)	2016/09/12	106	80 - 120	102	80 - 120	<0.010	mg/L	NC	20		
8394335	Turbidity	2016/09/12			100	80 - 120	<0.10	NTU	NC	20		
8394426	Benzene	2016/09/12	98	70 - 130	96	70 - 130	<0.40	ug/L	NC	30		
8394426	Ethylbenzene	2016/09/12	91	70 - 130	89	70 - 130	<0.40	ug/L	NC	30		
8394426	F1 (C6-C10) - BTEX	2016/09/12					<100	ug/L	NC	30		

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QUALITY ASSURANCE REPORT(CONT'D)

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000/GREAT BEAR LAK
Site Location: NOREX
Sampler Initials: DK, DP

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8394426	F1 (C6-C10)	2016/09/12	96	70 - 130	88	70 - 130	<100	ug/L	NC	30		
8394426	m & p-Xylene	2016/09/12	91	70 - 130	90	70 - 130	<0.80	ug/L	NC	30		
8394426	o-Xylene	2016/09/12	95	70 - 130	94	70 - 130	<0.40	ug/L	NC	30		
8394426	Toluene	2016/09/12	91	70 - 130	89	70 - 130	<0.40	ug/L	NC	30		
8394426	Xylenes (Total)	2016/09/12					<0.80	ug/L	NC	30		
8395102	Total Ammonia (N)	2016/09/12	103	80 - 120	101	80 - 120	<0.050	mg/L	11	20		
8395381	Dissolved Sulphate (SO4)	2016/09/12	103	80 - 120	102	80 - 120	<0.50	mg/L	NC	20		
8396069	Dissolved Phosphorus (P)	2016/09/14	93	80 - 120	95	80 - 120	<0.0030	mg/L	NC	20	87	80 - 120
8396141	Total Phosphorus (P)	2016/09/14	89	80 - 120	100	80 - 120	<0.0030	mg/L	NC	20	92	80 - 120
8397229	Dissolved Aluminum (Al)	2016/09/14	106	80 - 120	111	80 - 120	<3.0	ug/L	3.9	20		
8397229	Dissolved Antimony (Sb)	2016/09/14	103	80 - 120	103	80 - 120	<0.50	ug/L	NC	20		
8397229	Dissolved Arsenic (As)	2016/09/14	102	80 - 120	101	80 - 120	<0.10	ug/L	13	20		
8397229	Dissolved Barium (Ba)	2016/09/14	NC	80 - 120	102	80 - 120	<1.0	ug/L	1.4	20		
8397229	Dissolved Beryllium (Be)	2016/09/14	106	80 - 120	109	80 - 120	<0.10	ug/L	NC	20		
8397229	Dissolved Bismuth (Bi)	2016/09/14	106	80 - 120	105	80 - 120	<1.0	ug/L	NC	20		
8397229	Dissolved Boron (B)	2016/09/14	101	80 - 120	105	80 - 120	<50	ug/L	NC	20		
8397229	Dissolved Cadmium (Cd)	2016/09/14	100	80 - 120	100	80 - 120	<0.010	ug/L	6.4	20		
8397229	Dissolved Chromium (Cr)	2016/09/14	97	80 - 120	98	80 - 120	<1.0	ug/L	NC	20		
8397229	Dissolved Cobalt (Co)	2016/09/14	96	80 - 120	99	80 - 120	<0.50	ug/L	NC	20		
8397229	Dissolved Copper (Cu)	2016/09/14	93	80 - 120	97	80 - 120	<0.20	ug/L	0.97	20		
8397229	Dissolved Iron (Fe)	2016/09/14	105	80 - 120	110	80 - 120	<5.0	ug/L	14	20		
8397229	Dissolved Lead (Pb)	2016/09/14	106	80 - 120	108	80 - 120	<0.20	ug/L	NC	20		
8397229	Dissolved Lithium (Li)	2016/09/14	102	80 - 120	110	80 - 120	<5.0	ug/L	NC	20		
8397229	Dissolved Manganese (Mn)	2016/09/14	NC	80 - 120	97	80 - 120	<1.0	ug/L	0.79	20		
8397229	Dissolved Molybdenum (Mo)	2016/09/14	NC	80 - 120	104	80 - 120	<1.0	ug/L	NC	20		
8397229	Dissolved Nickel (Ni)	2016/09/14	100	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
8397229	Dissolved Selenium (Se)	2016/09/14	100	80 - 120	103	80 - 120	<0.10	ug/L	NC	20		
8397229	Dissolved Silicon (Si)	2016/09/14					<100	ug/L	5.4	20		
8397229	Dissolved Silver (Ag)	2016/09/14	104	80 - 120	107	80 - 120	<0.020	ug/L	NC	20		
8397229	Dissolved Strontium (Sr)	2016/09/14	NC	80 - 120	107	80 - 120	<1.0	ug/L	2.7	20		
8397229	Dissolved Thallium (Tl)	2016/09/14	103	80 - 120	103	80 - 120	<0.050	ug/L	NC	20		

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QUALITY ASSURANCE REPORT(CONT'D)

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000/GREAT BEAR LAK
Site Location: NOREX
Sampler Initials: DK, DP

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8397229	Dissolved Tin (Sn)	2016/09/14	101	80 - 120	96	80 - 120	<5.0	ug/L	NC	20		
8397229	Dissolved Titanium (Ti)	2016/09/14	94	80 - 120	104	80 - 120	<5.0	ug/L	NC	20		
8397229	Dissolved Uranium (U)	2016/09/14	104	80 - 120	105	80 - 120	<0.10	ug/L	4.4	20		
8397229	Dissolved Vanadium (V)	2016/09/14	97	80 - 120	99	80 - 120	<5.0	ug/L	NC	20		
8397229	Dissolved Zinc (Zn)	2016/09/14	NC	80 - 120	101	80 - 120	<5.0	ug/L	2.3	20		
8397229	Dissolved Zirconium (Zr)	2016/09/14					<0.50	ug/L	NC	20		
8397504	Dissolved Organic Carbon (C)	2016/09/14	NC	80 - 120	103	80 - 120	<0.50	mg/L	8.5	20		
8397651	Total Aluminum (Al)	2016/09/15	NC	80 - 120	116	80 - 120	3.1, RDL=3.0	ug/L	33 (1)	20		
8397651	Total Antimony (Sb)	2016/09/15	109	80 - 120	102	80 - 120	<0.50	ug/L	NC	20		
8397651	Total Arsenic (As)	2016/09/15	107	80 - 120	104	80 - 120	<0.10	ug/L	8.2	20		
8397651	Total Barium (Ba)	2016/09/15	NC	80 - 120	98	80 - 120	<1.0	ug/L	9.0	20		
8397651	Total Beryllium (Be)	2016/09/15	109	80 - 120	107	80 - 120	<0.10	ug/L	NC	20		
8397651	Total Bismuth (Bi)	2016/09/15	101	80 - 120	98	80 - 120	<1.0	ug/L	NC	20		
8397651	Total Boron (B)	2016/09/15	90	80 - 120	103	80 - 120	<50	ug/L	NC	20		
8397651	Total Cadmium (Cd)	2016/09/15	106	80 - 120	107	80 - 120	<0.010	ug/L	17	20		
8397651	Total Chromium (Cr)	2016/09/15	103	80 - 120	100	80 - 120	<1.0	ug/L	NC	20		
8397651	Total Cobalt (Co)	2016/09/15	104	80 - 120	100	80 - 120	<0.50	ug/L	NC	20		
8397651	Total Copper (Cu)	2016/09/15	98	80 - 120	107	80 - 120	<0.50	ug/L	7.4	20		
8397651	Total Iron (Fe)	2016/09/15	NC	80 - 120	110	80 - 120	<10	ug/L	9.2	20		
8397651	Total Lead (Pb)	2016/09/15	101	80 - 120	104	80 - 120	<0.20	ug/L	15	20		
8397651	Total Lithium (Li)	2016/09/15	102	80 - 120	102	80 - 120	<5.0	ug/L	NC	20		
8397651	Total Manganese (Mn)	2016/09/15	NC	80 - 120	105	80 - 120	<1.0	ug/L	8.1	20		
8397651	Total Molybdenum (Mo)	2016/09/15	111	80 - 120	108	80 - 120	<1.0	ug/L	NC	20		
8397651	Total Nickel (Ni)	2016/09/15	101	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
8397651	Total Selenium (Se)	2016/09/15	112	80 - 120	110	80 - 120	<0.10	ug/L	NC	20		
8397651	Total Silicon (Si)	2016/09/15					<100	ug/L	1.5	20		
8397651	Total Silver (Ag)	2016/09/15	105	80 - 120	107	80 - 120	<0.020	ug/L	NC	20		
8397651	Total Strontium (Sr)	2016/09/15	NC	80 - 120	103	80 - 120	<1.0	ug/L	0.77	20		
8397651	Total Thallium (Tl)	2016/09/15	99	80 - 120	100	80 - 120	<0.050	ug/L	NC	20		
8397651	Total Tin (Sn)	2016/09/15	101	80 - 120	110	80 - 120	<5.0	ug/L	NC	20		
8397651	Total Titanium (Ti)	2016/09/15	93	80 - 120	97	80 - 120	<5.0	ug/L	NC	20		

Maxxam Job #: B678004
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QUALITY ASSURANCE REPORT(CONT'D)

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000/GREAT BEAR LAK
Site Location: NOREX
Sampler Initials: DK, DP

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8397651	Total Uranium (U)	2016/09/15	103	80 - 120	103	80 - 120	<0.10	ug/L	0.27	20		
8397651	Total Vanadium (V)	2016/09/15	102	80 - 120	99	80 - 120	<5.0	ug/L	NC	20		
8397651	Total Zinc (Zn)	2016/09/15	NC	80 - 120	119	80 - 120	<5.0	ug/L	NC	20		
8397651	Total Zirconium (Zr)	2016/09/15					<0.50	ug/L	NC	20		
8397762	Total Aluminum (Al)	2016/09/14	107	80 - 120	112	80 - 120	<3.0	ug/L	1.1	20		
8397762	Total Antimony (Sb)	2016/09/14	103	80 - 120	102	80 - 120	<0.50	ug/L				
8397762	Total Arsenic (As)	2016/09/14	104	80 - 120	107	80 - 120	<0.10	ug/L	6.1	20		
8397762	Total Barium (Ba)	2016/09/14	99	80 - 120	99	80 - 120	<1.0	ug/L				
8397762	Total Beryllium (Be)	2016/09/14	105	80 - 120	100	80 - 120	<0.10	ug/L				
8397762	Total Bismuth (Bi)	2016/09/14	101	80 - 120	104	80 - 120	<1.0	ug/L				
8397762	Total Boron (B)	2016/09/14	105	80 - 120	102	80 - 120	<50	ug/L	NC	20		
8397762	Total Cadmium (Cd)	2016/09/14	103	80 - 120	103	80 - 120	<0.010	ug/L	NC	20		
8397762	Total Chromium (Cr)	2016/09/14	100	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
8397762	Total Cobalt (Co)	2016/09/14	97	80 - 120	104	80 - 120	<0.50	ug/L	NC	20		
8397762	Total Copper (Cu)	2016/09/14	94	80 - 120	102	80 - 120	<0.50	ug/L	NC	20		
8397762	Total Iron (Fe)	2016/09/14	110	80 - 120	113	80 - 120	<10	ug/L	6.1	20		
8397762	Total Lead (Pb)	2016/09/14	104	80 - 120	108	80 - 120	<0.20	ug/L	NC	20		
8397762	Total Lithium (Li)	2016/09/14	104	80 - 120	100	80 - 120	<5.0	ug/L				
8397762	Total Manganese (Mn)	2016/09/14	100	80 - 120	107	80 - 120	<1.0	ug/L	3.4	20		
8397762	Total Molybdenum (Mo)	2016/09/14	107	80 - 120	106	80 - 120	<1.0	ug/L	NC	20		
8397762	Total Nickel (Ni)	2016/09/14	97	80 - 120	108	80 - 120	<1.0	ug/L	NC	20		
8397762	Total Selenium (Se)	2016/09/14	106	80 - 120	103	80 - 120	<0.10	ug/L	NC	20		
8397762	Total Silicon (Si)	2016/09/14					<100	ug/L				
8397762	Total Silver (Ag)	2016/09/14	102	80 - 120	106	80 - 120	<0.020	ug/L	NC	20		
8397762	Total Strontium (Sr)	2016/09/14	NC	80 - 120	104	80 - 120	<1.0	ug/L				
8397762	Total Thallium (Tl)	2016/09/14	100	80 - 120	100	80 - 120	<0.050	ug/L				
8397762	Total Tin (Sn)	2016/09/14	104	80 - 120	104	80 - 120	<5.0	ug/L				
8397762	Total Titanium (Ti)	2016/09/14	109	80 - 120	100	80 - 120	<5.0	ug/L				
8397762	Total Uranium (U)	2016/09/14	105	80 - 120	105	80 - 120	<0.10	ug/L				
8397762	Total Vanadium (V)	2016/09/14	101	80 - 120	103	80 - 120	<5.0	ug/L				
8397762	Total Zinc (Zn)	2016/09/14	107	80 - 120	110	80 - 120	<5.0	ug/L	NC	20		

Maxxam Job #: B678004
Report Date: 2017/04/10

QUALITY ASSURANCE REPORT(CONT'D)

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000/GREAT BEAR LAK
Site Location: NOREX
Sampler Initials: DK, DP

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8397762	Total Zirconium (Zr)	2016/09/14					<0.50	ug/L				
8397837	Total Mercury (Hg)	2016/09/14	96	80 - 120	100	80 - 120	<0.010	ug/L	NC	20		
8397844	Dissolved Mercury (Hg)	2016/09/14	97	80 - 120	104	80 - 120	<0.010	ug/L	NC	20		
8400311	Dissolved Molybdenum (Mo)	2016/09/16			98	80 - 120	<1.0	ug/L				
8400311	Dissolved Uranium (U)	2016/09/16			99	80 - 120	<0.10	ug/L				

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

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

Maxxam Job #: B678004
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00000/GREAT BEAR LAK
Site Location: NOREX
Sampler Initials: DK, DP

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Anna Koksharova, M.Sc., Organics Senior Analyst



Andy Lu, Ph.D., P.Chem., Scientific Specialist



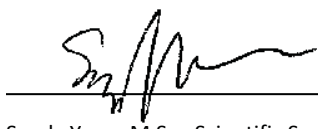
Justin Geisel, B.Sc., Organics Supervisor



Maria Magdalena Florescu, Ph.D., P.Chem., QP, Inorganics Senior Analyst



Suwan Fock, B.Sc., QP, Inorganics Senior Analyst



Sandy Yuan, M.Sc., Scientific Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Analytics International Corporation o/a Maxxam Analytics
Unit 105 - 349 Old Airport Road, Yellowknife, North West Territories Canada X1A 3X6 Tel (867) 445-2448 Toll-free 800-563-6266 Fax (867) 417-5779 www.maxxam.ca

333 (127)

Chain Of Custody Record Page 1 of 1

INVOICE TO:		Report Information		Project Information		Laboratory Use Only									
Company Name	#1776 SLR CONSULTING (CANADA) LTD	Company Name		Quotation #	B51186	Maxxam Job #	B678004 KJC								
Contact Name	Jay Cherian KATHA NOKLEBY	Contact Name		P.O. #		Bottle Order #:	504465								
Address	SLR YELLOWKNIFE	Address		Project #	34.01016.60000	Chain Of Custody Record	Project Manager								
Phone		Phone		Project Name	Norex	Letitia Prefontaine									
Fax		Fax		Site #	DP/DK										
Email	jcherian@slrconsulting.com; analytical@slrconsulting.ca	Email	knokleby@slr...	Sampled By											
Regulatory Criteria:	CSR <input type="checkbox"/> CCME <input checked="" type="checkbox"/> BC Water Quality <input type="checkbox"/> Other <input type="checkbox"/>	Special Instructions	ANALYSIS REQUESTED (PLEASE BE SPECIFIC)				Turnaround Time (TAT) Required:								
			Metals Field Filtered ? (Y/N) Alkalinity, Conductivity, pH, Turbidity, TSS, TDS Chloride, Sulphate Ammonia, Orthophosph, Dissolved phosphate, Total phosphate, Nitrate, Nitrite, DOC Total Metals in Water w/ CV Hg & Total Hardness Hexavalent Chromium (Total) Dissolved Metals in Water w/ CV Hg & Dissolved Hardness CCME BTEX/F ¹ in Water CCME F2-F4 in Water				Regular (Standard) TAT: (will be applied if Rush TAT is not specified) Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details. Job Specific Rush TAT (if applies to entire submission) 1 DAY <input type="checkbox"/> 2 Day <input type="checkbox"/> 3 Day <input type="checkbox"/> Date Required: <input type="checkbox"/> Rush Confirmation Number: <input type="checkbox"/> (call lab for #)								
SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM															
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered ? (Y/N)	Alkalinity, Conductivity, pH, Turbidity, TSS, TDS	Chloride, Sulphate	Ammonia, Orthophosph, Dissolved phosphate, Total phosphate, Nitrate, Nitrite, DOC	Total Metals in Water w/ CV Hg & Total Hardness	Hexavalent Chromium (Total)	Dissolved Metals in Water w/ CV Hg & Dissolved Hardness	CCME BTEX/F ¹ in Water	CCME F2-F4 in Water	# of Bottles	Comments
1	Norex-1	09/04/2016	15:48	SW	Y	X	X	X	X	X	X			10	
2	Norex-1B	09/04/2016	14:42	SW	Y	X	X	X	X	X	X			7	
3	Norex-2	09/04/2016	16:44	SW	Y	X	X	X	X	X	X	X	X	14	
4	Norex-3	09/04/2016	16:25	SW	Y	X	X	X	X	X	X	X	X	14	
5	NX-4A	09/04/2016	18:38	SW	Y	X	X	X	X	X	X			7	
6	Norex -5	09/04/2016	13:57	SW	Y	X	X	X	X	X	X			7	
7	Norex -6	09/04/2016	14:25	SW	Y	X	X	X	X	X	X			7	
8	Norex-12				Y	X	X	X	X	X	X	X	X	8/11	
9	Duplicate	09/04/2016	18:38	SW	Y	X	X	X	X	X	X			7	
10	field blank	09/04/2016	18:56	SW	Y	X	X	X	X	X	X	X	X	8/11	
RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	# jars used and not submitted		Lab Use Only					
Daleen Petersen		16/09/06	10:00	David T. Amun		20/09/08	12:43			Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?			
										<input type="checkbox"/>	See ACTR	<input type="checkbox"/> Yes <input type="checkbox"/> No			

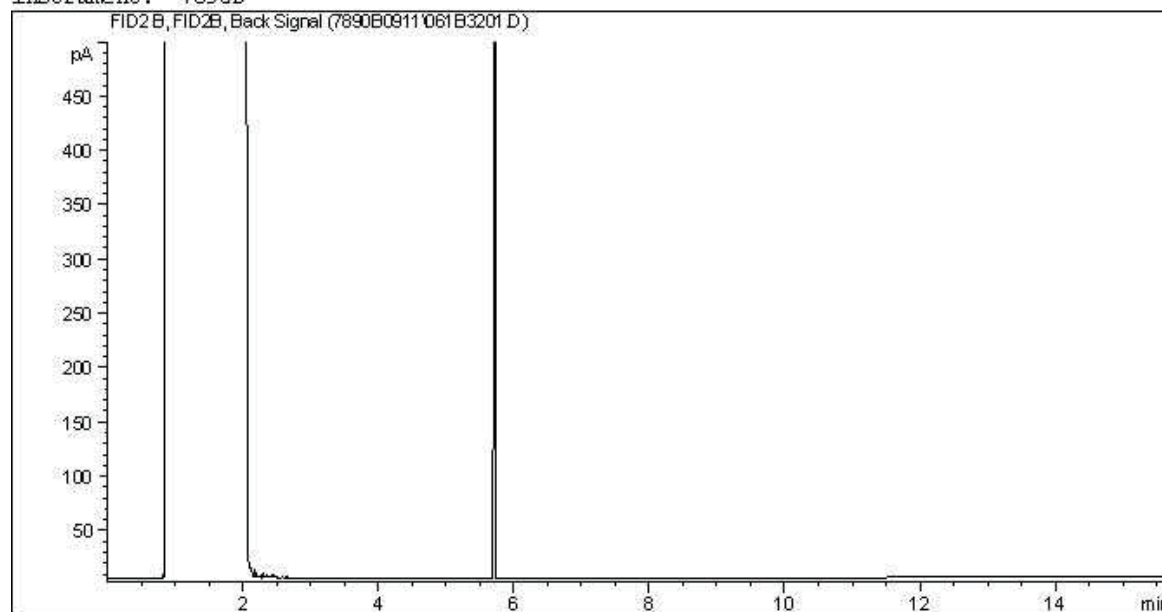
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

White Maxxam Yellow Client

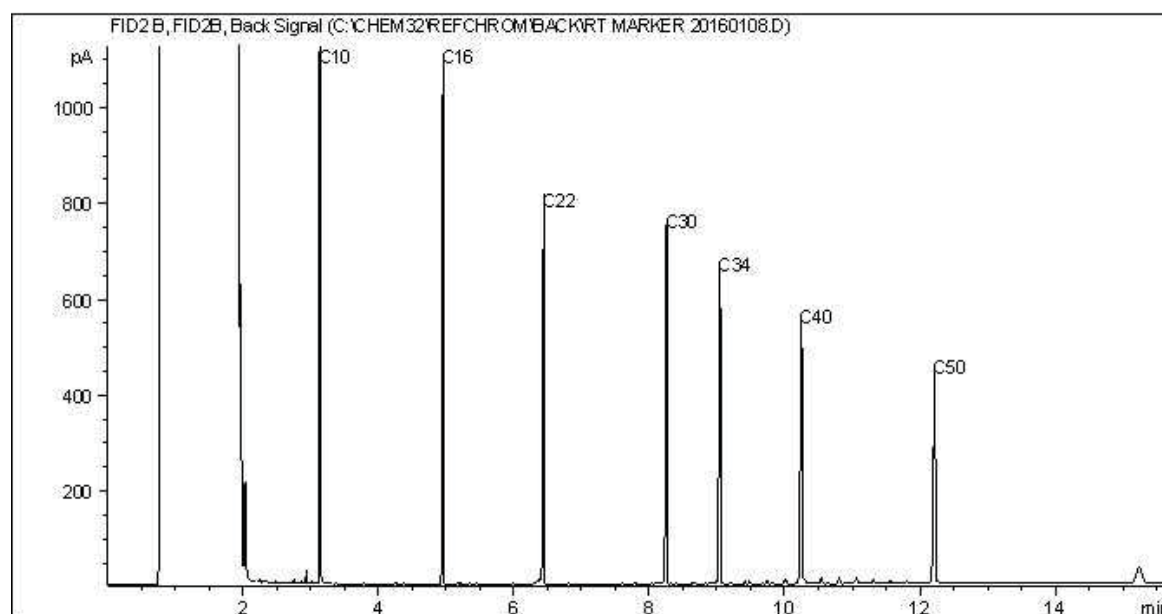
Maxxam Analytics International Corporation o/a Maxxam Analytics

CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: 7890B



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

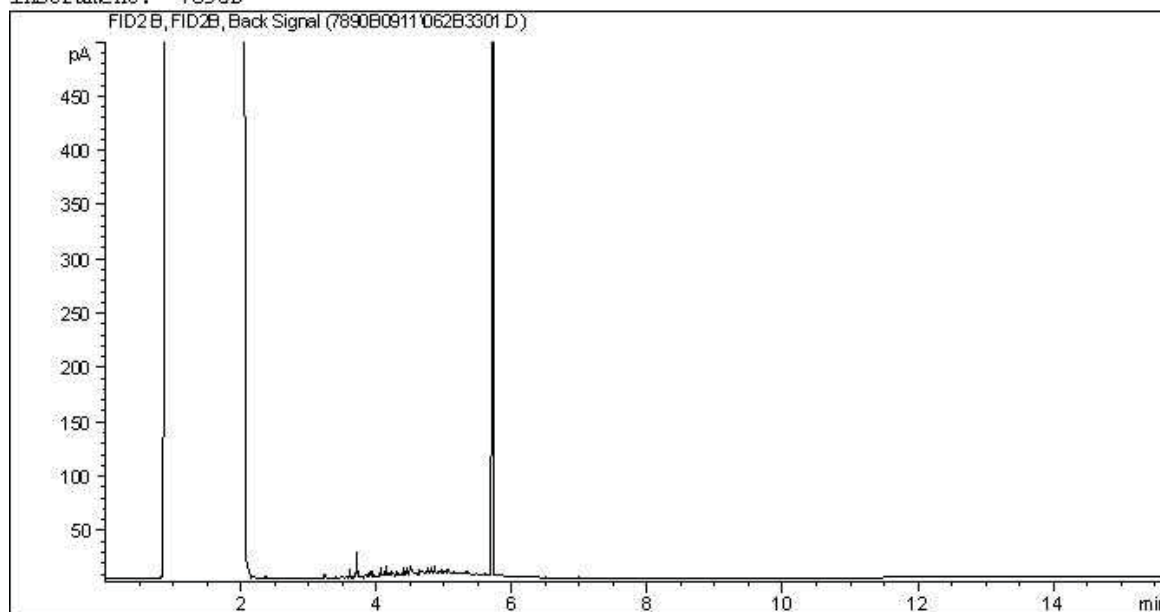
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Page 1 of 1

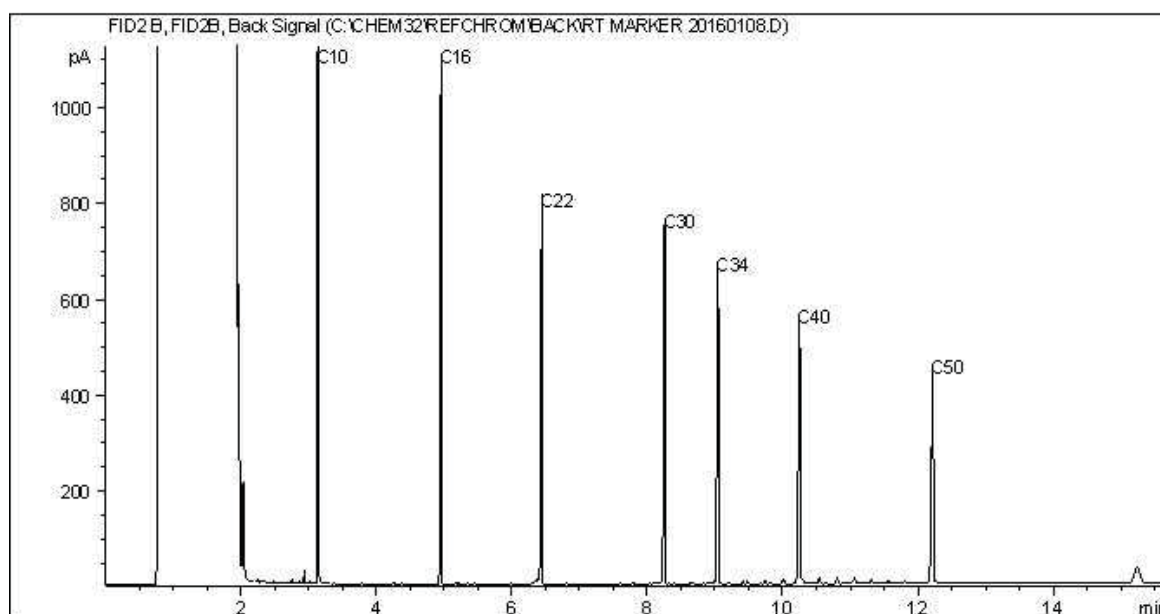
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in water) Chromatogram

Instrument: 7890B



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

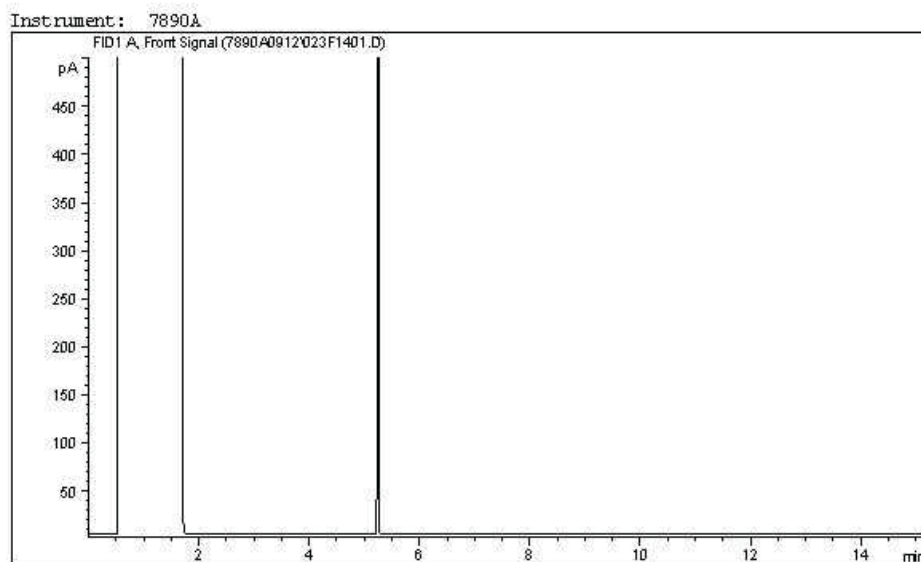
Gasoline: C4 - C12
 Varsol: C8 - C12
 Kerosene: C7 - C16

Diesel: C8 - C22
 Lubricating Oils: C20 - C40
 Crude Oils: C3 - C60+

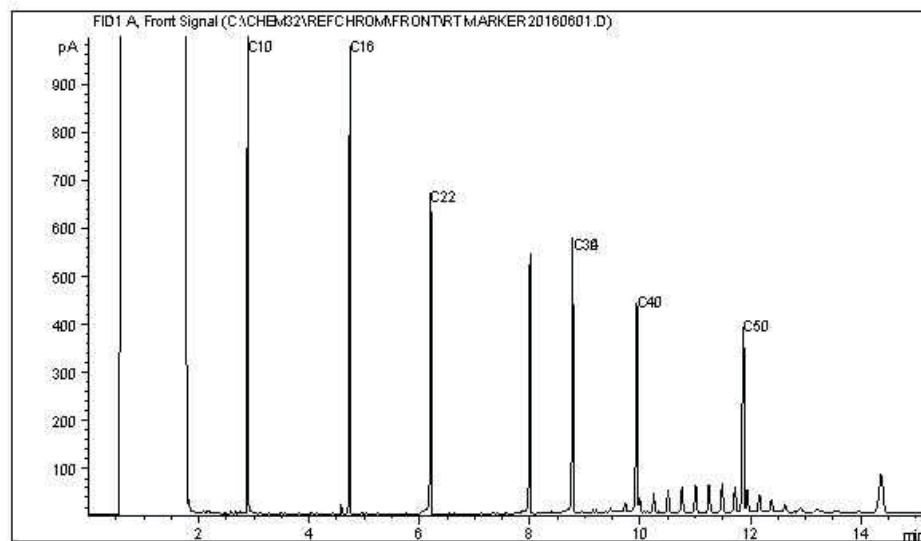
Page 1 of 1

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

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

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Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

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

Smallwood Mine

Your Project #: 234.01016.00020
Site#: SMALLWOOD
Site Location: SMALLWOOD
Your C.O.C. #: 503995-03-01

Attention:Katrina Nokleby

SLR CONSULTING (CANADA) LTD
#200 - 1620 WEST 8TH AVENUE
VANCOUVER, BC
Canada V6J 1V4

Report Date: 2017/04/10
Report #: R2367579
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B677943

Received: 2016/09/07, 08:40

Sample Matrix: Water
Samples Received: 9

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO ₃ ,HCO ₃ ,OH	9	N/A	2016/09/10	AB SOP-00005	SM 22 2320 B m
Chloride by Automated Colourimetry	9	N/A	2016/09/12	AB SOP-00020	SM 22 4500-Cl G m
Carbon (DOC) (2)	9	N/A	2016/09/14	EENV SOP-00060	MMCW 119 1996 m
Conductivity @25C	9	N/A	2016/09/10	AB SOP-00005	SM 22 2510 B m
Hardness Total (calculated as CaCO ₃) (1)	9	N/A	2016/09/15	BBY WI-00033	Auto Calc
Hardness (calculated as CaCO ₃) (1)	1	N/A	2016/09/14	BBY WI-00033	Auto Calc
Mercury (Dissolved) by CVAF (1)	1	N/A	2016/09/14	BBY7SOP-00015	BCMOE BCLM Oct2013 m
Mercury (Total) by CVAF (1)	9	2016/09/14	2016/09/14	BBY7SOP-00015	BCMOE BCLM Oct2013 m
Na, K, Ca, Mg, S by CRC ICPMS (diss.) (1)	1	N/A	2016/09/14	BBY7SOP-00002	EPA 6020A R1 m
Elements by CRC ICPMS (dissolved) (1)	1	N/A	2016/09/14	BBY7SOP-00002	EPA 6020B R2 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (1)	9	2016/09/09	2016/09/15	BBY7SOP-00002	EPA 6020A R1 m
Elements by CRC ICPMS (total) (1)	1	2016/09/14	2016/09/14	BBY7SOP-00003,	BCLM2005,EPA6020bR2m
Elements by CRC ICPMS (total) (1)	8	2016/09/14	2016/09/15	BBY7SOP-00003,	BCLM2005,EPA6020bR2m
Ammonia-N (Total)	9	N/A	2016/09/12	AB SOP-00007	EPA 350.1 R2.0 m
Nitrate and Nitrite	9	N/A	2016/09/11	AB WI-00065	Auto Calc
Nitrate + Nitrite-N (calculated)	9	N/A	2016/09/11	AB WI-00065	Auto Calc
Nitrogen, (Nitrite, Nitrate) by IC (3)	9	N/A	2016/09/10	AB SOP-00023	SM 22 4110 B m
Filter and HNO ₃ Preserve for Metals (1)	1	N/A	2016/09/15	BBY7 WI-00004	BCMOE Reqs 08/14
pH @25°C (4)	9	N/A	2016/09/10	AB SOP-00005	SM 22 4500 H+ B m
Orthophosphate by Konelab (3)	9	N/A	2016/09/10	AB SOP-00025	SM 22 4500-P A,F m
Sulphate by Automated Colourimetry	9	N/A	2016/09/12	AB SOP-00018	SM 22 4500-SO4 E m
Total Dissolved Solids (Filt. Residue)	9	2016/09/10	2016/09/12	AB SOP-00065	SM 22 2540 C m
Phosphorus -P (Total, Dissolved)	9	2016/09/13	2016/09/14	AB SOP-00024	SM 22 4500-P A,B,F m
Total Phosphorus	9	2016/09/13	2016/09/14	AB SOP-00024	SM 22 4500-P A,B,F m
Total Suspended Solids (NFR)	9	2016/09/10	2016/09/13	AB SOP-00061	SM 22 2540 D m
Turbidity (3)	8	N/A	2016/09/10	EENV SOP-00066	SM 22 2130 B m
Turbidity (3)	1	N/A	2016/09/12	EENV SOP-00066	SM 22 2130 B m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

Your Project #: 234.01016.00020
Site#: SMALLWOOD
Site Location: SMALLWOOD
Your C.O.C. #: 503995-03-01

Attention:Katrina Nokleby

SLR CONSULTING (CANADA) LTD
#200 - 1620 WEST 8TH AVENUE
VANCOUVER, BC
Canada V6J 1V4

Report Date: 2017/04/10
Report #: R2367579
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B677943

Received: 2016/09/07, 08:40

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

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

Results relate to samples tested.

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

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

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

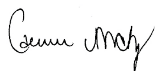
(1) This test was performed by Maxxam Vancouver

(2) DOC present in the sample should be considered as non-purgeable DOC. Dissolved > Total Imbalance: Whenever applicable, Dissolved >Total for any parameter that falls within method uncertainty for duplicates is likely equivalent. If RPD is >20% samples were reanalyzed and confirmed.

(3) Analysis completed within 48h after laboratory receipt to a maximum of five days from sampling is satisfactory for compliance purposes.

(4) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Maxxam endeavours to analyze samples as soon as possible after receipt.

Encryption Key



Carmen McKay
Project Manager
10 Apr 2017 11:32:38

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Carmen McKay, Project Manager

Email: CMcKay@maxxam.ca

Phone# (403)219-3683

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B677943
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00020
Site Location: SMALLWOOD
Sampler Initials: DK, DP

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		PL9418		PL9419	PL9420	PL9421	PL9422		
Sampling Date				2016/09/04 12:31	2016/09/04 10:52	2016/09/04 11:41	2016/09/04 11:41		
COC Number		503995-03-01		503995-03-01	503995-03-01	503995-03-01	503995-03-01		
	UNITS	TRIP BLANK	QC Batch	DUP G	SM-7-2M	SM-1	DUP 10	RDL	QC Batch
Calculated Parameters									
Dissolved Nitrate (NO ₃)	mg/L	<0.044	8393317	<0.044	<0.044	<0.044	<0.044	0.044	8393317
Nitrate plus Nitrite (N)	mg/L	<0.020	8393318	<0.020	<0.020	<0.020	<0.020	0.020	8393318
Dissolved Nitrite (NO ₂)	mg/L	<0.033	8393317	<0.033	<0.033	<0.033	<0.033	0.033	8393317
Misc. Inorganics									
Conductivity	uS/cm	<1.0	8393650	<1.0	110	110	110	1.0	8393650
Dissolved Organic Carbon (C)	mg/L	<0.50	8397304	<0.50	5.6	5.9	5.4	0.50	8397304
pH	pH	4.77	8393648	4.76	7.68	7.73	7.75	N/A	8393648
Total Dissolved Solids	mg/L	<10	8393581	<10	28	12	28	10	8393581
Total Suspended Solids	mg/L	<1.0	8393553	<1.0	<1.0	2.7	3.3	1.0	8393553
Anions									
Alkalinity (PP as CaCO ₃)	mg/L	<0.50	8393649	<0.50	<0.50	<0.50	<0.50	0.50	8393649
Alkalinity (Total as CaCO ₃)	mg/L	<0.50	8393649	<0.50	39	43	40	0.50	8393649
Bicarbonate (HCO ₃)	mg/L	<0.50	8393649	<0.50	47	52	49	0.50	8393649
Carbonate (CO ₃)	mg/L	<0.50	8393649	<0.50	<0.50	<0.50	<0.50	0.50	8393649
Hydroxide (OH)	mg/L	<0.50	8393649	<0.50	<0.50	<0.50	<0.50	0.50	8393649
Dissolved Sulphate (SO ₄)	mg/L	<1.0	8393747	<1.0	14	15	15	1.0	8393747
Dissolved Chloride (Cl)	mg/L	<1.0	8393743	<1.0	<1.0	<1.0	<1.0	1.0	8393743
Nutrients									
Total Ammonia (N)	mg/L	0.016 (1)	8395093	0.0090 (1)	0.035 (1)	0.020 (1)	0.021 (1)	0.0067	8395093
Orthophosphate (P)	mg/L	<0.0030	8393566	<0.0030	<0.0030	<0.0030	<0.0030	0.0030	8393566
Dissolved Phosphorus (P)	mg/L	<0.0030	8396043	<0.0030	<0.0030	<0.0030	<0.0030	0.0030	8396043
Total Phosphorus (P)	mg/L	<0.0030	8396091	<0.0030	0.0030	0.0030	0.0030	0.0030	8396091
Dissolved Nitrite (N)	mg/L	<0.010	8393742	<0.010	<0.010	<0.010	<0.010	0.010	8393742
Dissolved Nitrate (N)	mg/L	<0.010	8393742	<0.010	<0.010	<0.010	<0.010	0.010	8393742
Physical Properties									
Turbidity	NTU	<0.10	8394335	0.18	0.53	0.67	0.49	0.10	8393958
RDL = Reportable Detection Limit									
N/A = Not Applicable									
(1) Detection limit for ammonia calculated based on method detection limits (MDL) by client request.									

Maxxam Job #: B677943
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00020
Site Location: SMALLWOOD
Sampler Initials: DK, DP

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		PL9423		PL9424		PL9425	PL9426		
Sampling Date		2016/09/04 11:17		2016/09/04 12:10		2016/09/04 12:22	2016/09/04 11:55		
COC Number		503995-03-01		503995-03-01		503995-03-01	503995-03-01		
	UNITS	SM-7-7.5M	QC Batch	SM-6-4.5M	QC Batch	SM-2	SM-6-2M	RDL	QC Batch
Calculated Parameters									
Filter and HNO ₃ Preservation	N/A	FIELD	ONSITE		ONSITE				ONSITE
Dissolved Nitrate (NO ₃)	mg/L	<0.044	8393317	<0.044	8393317	<0.044	<0.044	0.044	8393317
Nitrate plus Nitrite (N)	mg/L	<0.020	8393318	<0.020	8393318	<0.020	<0.020	0.020	8393318
Dissolved Nitrite (NO ₂)	mg/L	<0.033	8393317	<0.033	8393317	<0.033	<0.033	0.033	8393317
Misc. Inorganics									
Conductivity	uS/cm	110	8393650	110	8393650	110	110	1.0	8393650
Dissolved Organic Carbon (C)	mg/L	5.8	8397304	6.1	8397304	5.7	6.6	0.50	8397304
pH	pH	7.38	8393648	7.72	8393648	7.75	7.75	N/A	8393648
Total Dissolved Solids	mg/L	32	8393581	16	8393581	28	12	10	8393581
Total Suspended Solids	mg/L	2.7	8393553	<1.0	8393553	<1.0	1.3	1.0	8393553
Anions									
Alkalinity (PP as CaCO ₃)	mg/L	<0.50	8393649	<0.50	8393649	<0.50	<0.50	0.50	8393649
Alkalinity (Total as CaCO ₃)	mg/L	42	8393649	41	8393649	41	42	0.50	8393649
Bicarbonate (HCO ₃)	mg/L	51	8393649	50	8393649	50	52	0.50	8393649
Carbonate (CO ₃)	mg/L	<0.50	8393649	<0.50	8393649	<0.50	<0.50	0.50	8393649
Hydroxide (OH)	mg/L	<0.50	8393649	<0.50	8393649	<0.50	<0.50	0.50	8393649
Dissolved Sulphate (SO ₄)	mg/L	14	8393747	14	8393747	14	14	1.0	8393747
Dissolved Chloride (Cl)	mg/L	<1.0	8393743	<1.0	8393743	<1.0	<1.0	1.0	8393743
Nutrients									
Total Ammonia (N)	mg/L	0.022 (1)	8395093	0.020 (1)	8395093	0.025 (1)	0.021 (1)	0.0067	8395093
Orthophosphate (P)	mg/L	<0.0030	8393566	<0.0030	8393566	<0.0030	<0.0030	0.0030	8393566
Dissolved Phosphorus (P)	mg/L	<0.0030	8396043	<0.0030	8396043	<0.0030	<0.0030	0.0030	8396043
Total Phosphorus (P)	mg/L	0.013	8396091	0.0030	8396141	<0.0030	0.0030	0.0030	8396091
Dissolved Nitrite (N)	mg/L	<0.010	8393742	<0.010	8393742	<0.010	<0.010	0.010	8393742
Dissolved Nitrate (N)	mg/L	<0.010	8393742	<0.010	8393742	<0.010	<0.010	0.010	8393742
Physical Properties									
Turbidity	NTU	1.3	8393958	0.55	8393958	0.66	0.53	0.10	8393958
RDL = Reportable Detection Limit									
N/A = Not Applicable									
(1) Detection limit for ammonia calculated based on method detection limits (MDL) by client request.									

Maxxam Job #: B677943
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00020
Site Location: SMALLWOOD
Sampler Initials: DK, DP

CSR/CCME DISS. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL9423		
Sampling Date		2016/09/04 11:17		
COC Number		503995-03-01		
	UNITS	SM-7-7.5M	RDL	QC Batch
Misc. Inorganics				
Dissolved Hardness (CaCO3)	mg/L	48.5	0.50	8392954
Elements				
Dissolved Mercury (Hg)	ug/L	<0.010	0.010	8397844
Dissolved Metals by ICPMS				
Dissolved Aluminum (Al)	ug/L	6.4	3.0	8397229
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	8397229
Dissolved Arsenic (As)	ug/L	0.31	0.10	8397229
Dissolved Barium (Ba)	ug/L	7.7	1.0	8397229
Dissolved Beryllium (Be)	ug/L	<0.10	0.10	8397229
Dissolved Bismuth (Bi)	ug/L	<1.0	1.0	8397229
Dissolved Boron (B)	ug/L	<50	50	8397229
Dissolved Cadmium (Cd)	ug/L	0.017	0.010	8397229
Dissolved Chromium (Cr)	ug/L	<1.0	1.0	8397229
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	8397229
Dissolved Copper (Cu)	ug/L	1.64	0.20	8397229
Dissolved Iron (Fe)	ug/L	10.4	5.0	8397229
Dissolved Lead (Pb)	ug/L	<0.20	0.20	8397229
Dissolved Lithium (Li)	ug/L	<5.0	5.0	8397229
Dissolved Manganese (Mn)	ug/L	28.2	1.0	8397229
Dissolved Molybdenum (Mo)	ug/L	<1.0	1.0	8397229
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	8397229
Dissolved Selenium (Se)	ug/L	<0.10	0.10	8397229
Dissolved Silicon (Si)	ug/L	932	100	8397229
Dissolved Silver (Ag)	ug/L	<0.020	0.020	8397229
Dissolved Strontium (Sr)	ug/L	25.6	1.0	8397229
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	8397229
Dissolved Tin (Sn)	ug/L	<5.0	5.0	8397229
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	8397229
Dissolved Uranium (U)	ug/L	0.20	0.10	8397229
Dissolved Vanadium (V)	ug/L	<5.0	5.0	8397229
Dissolved Zinc (Zn)	ug/L	14.3	5.0	8397229
RDL = Reportable Detection Limit				

Maxxam Job #: B677943
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00020
Site Location: SMALLWOOD
Sampler Initials: DK, DP

CSR/CCME DISS. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL9423		
Sampling Date		2016/09/04 11:17		
COC Number		503995-03-01		
	UNITS	SM-7-7.5M	RDL	QC Batch
Dissolved Zirconium (Zr)	ug/L	<0.50	0.50	8397229
Dissolved Calcium (Ca)	mg/L	12.9	0.050	8392313
Dissolved Magnesium (Mg)	mg/L	3.98	0.050	8392313
Dissolved Potassium (K)	mg/L	0.725	0.050	8392313
Dissolved Sodium (Na)	mg/L	2.58	0.050	8392313
Dissolved Sulphur (S)	mg/L	4.2	3.0	8392313
RDL = Reportable Detection Limit				

Maxxam Job #: B677943
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00020
Site Location: SMALLWOOD
Sampler Initials: DK, DP

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL9418	PL9419	PL9420		PL9421		PL9422		
Sampling Date			2016/09/04 12:31	2016/09/04 10:52		2016/09/04 11:41		2016/09/04 11:41		
COC Number		503995-03-01	503995-03-01	503995-03-01		503995-03-01		503995-03-01		
	UNITS	TRIP BLANK	DUP G	SM-7-2M	QC Batch	SM-1	QC Batch	DUP 10	RDL	QC Batch
Calculated Parameters										
Total Hardness (CaCO ₃)	mg/L	<0.50	<0.50	51.4	8392870	51.8	8392870	52.8	0.50	8392870
Elements										
Total Mercury (Hg)	ug/L	<0.010	<0.010	0.013	8397832	<0.010	8397832	<0.010	0.010	8397832
Total Metals by ICPMS										
Total Aluminum (Al)	ug/L	<3.0	<3.0	13.0	8397573	19.0	8397762	28.0	3.0	8397573
Total Antimony (Sb)	ug/L	<0.50	<0.50	<0.50	8397573	<0.50	8397762	<0.50	0.50	8397573
Total Arsenic (As)	ug/L	<0.10	<0.10	0.51	8397573	0.54	8397762	0.65	0.10	8397573
Total Barium (Ba)	ug/L	<1.0	<1.0	6.9	8397573	6.9	8397762	6.8	1.0	8397573
Total Beryllium (Be)	ug/L	<0.10	<0.10	<0.10	8397573	<0.10	8397762	<0.10	0.10	8397573
Total Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0	8397573	<1.0	8397762	<1.0	1.0	8397573
Total Boron (B)	ug/L	<50	<50	<50	8397573	<50	8397762	<50	50	8397573
Total Cadmium (Cd)	ug/L	<0.010	<0.010	0.011	8397573	0.031	8397762	0.042	0.010	8397573
Total Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	8397573	<1.0	8397762	<1.0	1.0	8397573
Total Cobalt (Co)	ug/L	<0.50	<0.50	<0.50	8397573	<0.50	8397762	<0.50	0.50	8397573
Total Copper (Cu)	ug/L	<0.50	<0.50	1.62	8397573	1.57	8397762	1.73	0.50	8397573
Total Iron (Fe)	ug/L	<10	<10	22	8397573	35	8397762	54	10	8397573
Total Lead (Pb)	ug/L	<0.20	<0.20	<0.20	8397573	<0.20	8397762	0.29	0.20	8397573
Total Lithium (Li)	ug/L	<5.0	<5.0	<5.0	8397573	<5.0	8397762	<5.0	5.0	8397573
Total Manganese (Mn)	ug/L	<1.0	<1.0	11.5	8397573	15.0	8397762	18.2	1.0	8397573
Total Molybdenum (Mo)	ug/L	<1.0	<1.0	1.1	8397573	1.1	8397762	1.1	1.0	8397573
Total Nickel (Ni)	ug/L	<1.0	<1.0	<1.0	8397573	<1.0	8397762	<1.0	1.0	8397573
Total Selenium (Se)	ug/L	<0.10	<0.10	<0.10	8397573	<0.10	8397762	<0.10	0.10	8397573
Total Silicon (Si)	ug/L	<100	<100	598	8397573	610	8397762	617	100	8397573
Total Silver (Ag)	ug/L	<0.020	<0.020	<0.020	8397573	<0.020	8397762	<0.020	0.020	8397573
Total Strontium (Sr)	ug/L	<1.0	<1.0	26.7	8397573	26.5	8397762	26.7	1.0	8397573
Total Thallium (Tl)	ug/L	<0.050	<0.050	<0.050	8397573	<0.050	8397762	<0.050	0.050	8397573
Total Tin (Sn)	ug/L	<5.0	<5.0	<5.0	8397573	<5.0	8397762	<5.0	5.0	8397573
Total Titanium (Ti)	ug/L	<5.0	<5.0	<5.0	8397573	<5.0	8397762	<5.0	5.0	8397573
Total Uranium (U)	ug/L	<0.10	<0.10	0.33	8397573	0.34	8397762	0.34	0.10	8397573
Total Vanadium (V)	ug/L	<5.0	<5.0	<5.0	8397573	<5.0	8397762	<5.0	5.0	8397573
Total Zinc (Zn)	ug/L	<5.0	<5.0	13.0	8397573	22.6	8397762	41.9	5.0	8397573
RDL = Reportable Detection Limit										

Maxxam Job #: B677943
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00020
Site Location: SMALLWOOD
Sampler Initials: DK, DP

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL9418	PL9419	PL9420		PL9421		PL9422		
Sampling Date			2016/09/04 12:31	2016/09/04 10:52		2016/09/04 11:41		2016/09/04 11:41		
COC Number		503995-03-01	503995-03-01	503995-03-01		503995-03-01		503995-03-01		
	UNITS	TRIP BLANK	DUP G	SM-7-2M	QC Batch	SM-1	QC Batch	DUP 10	RDL	QC Batch
Total Zirconium (Zr)	ug/L	<0.50	<0.50	<0.50	8397573	<0.50	8397762	<0.50	0.50	8397573
Total Calcium (Ca)	mg/L	<0.050	0.121	13.8	8392257	14.0	8392257	14.6	0.050	8392257
Total Magnesium (Mg)	mg/L	<0.050	<0.050	4.08	8392257	4.07	8392257	3.96	0.050	8392257
Total Potassium (K)	mg/L	<0.050	<0.050	0.755	8392257	0.753	8392257	0.751	0.050	8392257
Total Sodium (Na)	mg/L	<0.050	<0.050	2.68	8392257	2.63	8392257	2.70	0.050	8392257
Total Sulphur (S)	mg/L	<3.0	<3.0	4.5	8392257	4.9	8392257	4.6	3.0	8392257
RDL = Reportable Detection Limit										

Maxxam Job #: B677943
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00020
Site Location: SMALLWOOD
Sampler Initials: DK, DP

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL9423	PL9424	PL9425	PL9426		
Sampling Date		2016/09/04 11:17	2016/09/04 12:10	2016/09/04 12:22	2016/09/04 11:55		
COC Number		503995-03-01	503995-03-01	503995-03-01	503995-03-01		
	UNITS	SM-7-7.5M	SM-6-4.5M	SM-2	SM-6-2M	RDL	QC Batch
Calculated Parameters							
Total Hardness (CaCO ₃)	mg/L	51.1	52.5	50.6	50.2	0.50	8392870
Elements							
Total Mercury (Hg)	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	8397832
Total Metals by ICPMS							
Total Aluminum (Al)	ug/L	21.4	16.8	18.8	14.2	3.0	8397573
Total Antimony (Sb)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	8397573
Total Arsenic (As)	ug/L	0.39	0.54	0.50	0.50	0.10	8397573
Total Barium (Ba)	ug/L	8.2	6.4	6.6	6.4	1.0	8397573
Total Beryllium (Be)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	8397573
Total Bismuth (Bi)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	8397573
Total Boron (B)	ug/L	<50	<50	<50	<50	50	8397573
Total Cadmium (Cd)	ug/L	0.023	0.011	0.014	0.010	0.010	8397573
Total Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	8397573
Total Cobalt (Co)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	8397573
Total Copper (Cu)	ug/L	1.76	1.77	1.59	1.60	0.50	8397573
Total Iron (Fe)	ug/L	67	27	22	21	10	8397573
Total Lead (Pb)	ug/L	<0.20	<0.20	0.25	<0.20	0.20	8397573
Total Lithium (Li)	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	8397573
Total Manganese (Mn)	ug/L	60.9	11.6	10.8	11.1	1.0	8397573
Total Molybdenum (Mo)	ug/L	<1.0	1.0	1.0	1.0	1.0	8397573
Total Nickel (Ni)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	8397573
Total Selenium (Se)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	8397573
Total Silicon (Si)	ug/L	931	603	588	582	100	8397573
Total Silver (Ag)	ug/L	<0.020	<0.020	<0.020	<0.020	0.020	8397573
Total Strontium (Sr)	ug/L	25.1	25.7	25.8	26.2	1.0	8397573
Total Thallium (Tl)	ug/L	<0.050	<0.050	<0.050	<0.050	0.050	8397573
Total Tin (Sn)	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	8397573
Total Titanium (Ti)	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	8397573
Total Uranium (U)	ug/L	0.21	0.32	0.32	0.32	0.10	8397573
Total Vanadium (V)	ug/L	<5.0	<5.0	<5.0	<5.0	5.0	8397573
Total Zinc (Zn)	ug/L	24.3	15.9	19.3	11.0	5.0	8397573
RDL = Reportable Detection Limit							

Maxxam Job #: B677943
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00020
Site Location: SMALLWOOD
Sampler Initials: DK, DP

CSR/CCME TOT. METALS IN WATER W/ CV HG (WATER)

Maxxam ID		PL9423	PL9424	PL9425	PL9426		
Sampling Date		2016/09/04 11:17	2016/09/04 12:10	2016/09/04 12:22	2016/09/04 11:55		
COC Number		503995-03-01	503995-03-01	503995-03-01	503995-03-01		
	UNITS	SM-7-7.5M	SM-6-4.5M	SM-2	SM-6-2M	RDL	QC Batch
Total Zirconium (Zr)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	8397573
Total Calcium (Ca)	mg/L	14.1	14.1	13.8	13.5	0.050	8392257
Total Magnesium (Mg)	mg/L	3.87	4.21	3.90	3.98	0.050	8392257
Total Potassium (K)	mg/L	0.755	0.772	0.730	0.754	0.050	8392257
Total Sodium (Na)	mg/L	2.50	2.76	2.56	2.88	0.050	8392257
Total Sulphur (S)	mg/L	4.1	4.7	4.2	4.3	3.0	8392257
RDL = Reportable Detection Limit							

Maxxam Job #: B677943
Report Date: 2017/04/10

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00020
Site Location: SMALLWOOD
Sampler Initials: DK, DP

GENERAL COMMENTS

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

Package 1	7.0°C
Package 2	3.7°C
Package 3	2.7°C
Package 4	6.0°C
Package 5	4.7°C
Package 6	6.0°C
Package 7	3.3°C
Package 8	3.3°C
Package 9	4.0°C
Package 10	5.3°C
Package 11	5.7°C
Package 12	5.0°C

Report revised to include updated detection limits for Ammonia, per client request 2017/04/10

Sample PL9419 [DUP G] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL9420 [SM-7-2M] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL9421 [SM-1] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL9422 [DUP 10] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL9423 [SM-7-7.5M] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL9424 [SM-6-4.5M] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL9425 [SM-2] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Sample PL9426 [SM-6-2M] : Sample was analyzed past method specified hold time for Orthophosphate by Konelab. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised. Sample was analyzed past method specified hold time for Turbidity. Sample was analyzed past method specified hold time for Nitrogen

Results relate only to the items tested.

Maxxam Job #: B677943
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SLR CONSULTING (CANADA) LTD
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Site Location: SMALLWOOD
Sampler Initials: DK, DP

Maxxam Job #: B677943
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QUALITY ASSURANCE REPORT

SLR CONSULTING (CANADA) LTD
Client Project #: 234.01016.00020
Site Location: SMALLWOOD
Sampler Initials: DK, DP

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8393553	Total Suspended Solids	2016/09/13	98	80 - 120	99	80 - 120	<1.0	mg/L	0	20		
8393566	Orthophosphate (P)	2016/09/10	101	80 - 120	103	80 - 120	<0.0030	mg/L	NC	20		
8393581	Total Dissolved Solids	2016/09/12	100	80 - 120	97	80 - 120	<10	mg/L	NC	20		
8393648	pH	2016/09/10			100	97 - 103			0.18	N/A		
8393649	Alkalinity (PP as CaCO3)	2016/09/10					<0.50	mg/L	NC	20		
8393649	Alkalinity (Total as CaCO3)	2016/09/10			98	80 - 120	<0.50	mg/L	1.3	20		
8393649	Bicarbonate (HCO3)	2016/09/10					<0.50	mg/L	1.3	20		
8393649	Carbonate (CO3)	2016/09/10					<0.50	mg/L	NC	20		
8393649	Hydroxide (OH)	2016/09/10					<0.50	mg/L	NC	20		
8393650	Conductivity	2016/09/10			100	90 - 110	<1.0	uS/cm	0	10		
8393742	Dissolved Nitrate (N)	2016/09/10	103	80 - 120	100	80 - 120	<0.010	mg/L	NC	20		
8393742	Dissolved Nitrite (N)	2016/09/10	100	80 - 120	97	80 - 120	<0.010	mg/L	NC	20		
8393743	Dissolved Chloride (Cl)	2016/09/12	115	80 - 120	104	80 - 120	<1.0	mg/L	8.1	20		
8393747	Dissolved Sulphate (SO4)	2016/09/12	NC	80 - 120	107	80 - 120	<1.0	mg/L	0.0030	20		
8393958	Turbidity	2016/09/10			100	80 - 120	<0.10	NTU	0.96	20		
8394335	Turbidity	2016/09/12			100	80 - 120	<0.10	NTU	NC	20		
8395093	Total Ammonia (N)	2016/09/12	92	80 - 120	104	80 - 120	<0.050	mg/L	NC	20		
8396043	Dissolved Phosphorus (P)	2016/09/14	96	80 - 120	97	80 - 120	<0.0030	mg/L	NC	20	87	80 - 120
8396091	Total Phosphorus (P)	2016/09/14	97	80 - 120	100	80 - 120	<0.0030	mg/L	NC	20	92	80 - 120
8396141	Total Phosphorus (P)	2016/09/14	89	80 - 120	100	80 - 120	<0.0030	mg/L	NC	20	92	80 - 120
8397229	Dissolved Aluminum (Al)	2016/09/14	106	80 - 120	111	80 - 120	<3.0	ug/L	3.9	20		
8397229	Dissolved Antimony (Sb)	2016/09/14	103	80 - 120	103	80 - 120	<0.50	ug/L	NC	20		
8397229	Dissolved Arsenic (As)	2016/09/14	102	80 - 120	101	80 - 120	<0.10	ug/L	13	20		
8397229	Dissolved Barium (Ba)	2016/09/14	NC	80 - 120	102	80 - 120	<1.0	ug/L	1.4	20		
8397229	Dissolved Beryllium (Be)	2016/09/14	106	80 - 120	109	80 - 120	<0.10	ug/L	NC	20		
8397229	Dissolved Bismuth (Bi)	2016/09/14	106	80 - 120	105	80 - 120	<1.0	ug/L	NC	20		
8397229	Dissolved Boron (B)	2016/09/14	101	80 - 120	105	80 - 120	<50	ug/L	NC	20		
8397229	Dissolved Cadmium (Cd)	2016/09/14	100	80 - 120	100	80 - 120	<0.010	ug/L	6.4	20		
8397229	Dissolved Chromium (Cr)	2016/09/14	97	80 - 120	98	80 - 120	<1.0	ug/L	NC	20		
8397229	Dissolved Cobalt (Co)	2016/09/14	96	80 - 120	99	80 - 120	<0.50	ug/L	NC	20		
8397229	Dissolved Copper (Cu)	2016/09/14	93	80 - 120	97	80 - 120	<0.20	ug/L	0.97	20		

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QUALITY ASSURANCE REPORT(CONT'D)

SLR CONSULTING (CANADA) LTD
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Site Location: SMALLWOOD
Sampler Initials: DK, DP

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8397229	Dissolved Iron (Fe)	2016/09/14	105	80 - 120	110	80 - 120	<5.0	ug/L	14	20		
8397229	Dissolved Lead (Pb)	2016/09/14	106	80 - 120	108	80 - 120	<0.20	ug/L	NC	20		
8397229	Dissolved Lithium (Li)	2016/09/14	102	80 - 120	110	80 - 120	<5.0	ug/L	NC	20		
8397229	Dissolved Manganese (Mn)	2016/09/14	NC	80 - 120	97	80 - 120	<1.0	ug/L	0.79	20		
8397229	Dissolved Molybdenum (Mo)	2016/09/14	NC	80 - 120	104	80 - 120	<1.0	ug/L	NC	20		
8397229	Dissolved Nickel (Ni)	2016/09/14	100	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
8397229	Dissolved Selenium (Se)	2016/09/14	100	80 - 120	103	80 - 120	<0.10	ug/L	NC	20		
8397229	Dissolved Silicon (Si)	2016/09/14					<100	ug/L	5.4	20		
8397229	Dissolved Silver (Ag)	2016/09/14	104	80 - 120	107	80 - 120	<0.020	ug/L	NC	20		
8397229	Dissolved Strontium (Sr)	2016/09/14	NC	80 - 120	107	80 - 120	<1.0	ug/L	2.7	20		
8397229	Dissolved Thallium (Tl)	2016/09/14	103	80 - 120	103	80 - 120	<0.050	ug/L	NC	20		
8397229	Dissolved Tin (Sn)	2016/09/14	101	80 - 120	96	80 - 120	<5.0	ug/L	NC	20		
8397229	Dissolved Titanium (Ti)	2016/09/14	94	80 - 120	104	80 - 120	<5.0	ug/L	NC	20		
8397229	Dissolved Uranium (U)	2016/09/14	104	80 - 120	105	80 - 120	<0.10	ug/L	4.4	20		
8397229	Dissolved Vanadium (V)	2016/09/14	97	80 - 120	99	80 - 120	<5.0	ug/L	NC	20		
8397229	Dissolved Zinc (Zn)	2016/09/14	NC	80 - 120	101	80 - 120	<5.0	ug/L	2.3	20		
8397229	Dissolved Zirconium (Zr)	2016/09/14					<0.50	ug/L	NC	20		
8397304	Dissolved Organic Carbon (C)	2016/09/14	102	80 - 120	107	80 - 120	<0.50	mg/L	19	20		
8397573	Total Aluminum (Al)	2016/09/14	109	80 - 120	108	80 - 120	<3.0	ug/L	NC	20		
8397573	Total Antimony (Sb)	2016/09/14	99	80 - 120	100	80 - 120	<0.50	ug/L	NC	20		
8397573	Total Arsenic (As)	2016/09/14	104	80 - 120	100	80 - 120	<0.10	ug/L	NC	20		
8397573	Total Barium (Ba)	2016/09/14	95	80 - 120	96	80 - 120	<1.0	ug/L	NC	20		
8397573	Total Beryllium (Be)	2016/09/14	103	80 - 120	100	80 - 120	<0.10	ug/L	NC	20		
8397573	Total Bismuth (Bi)	2016/09/14	103	80 - 120	97	80 - 120	<1.0	ug/L	NC	20		
8397573	Total Boron (B)	2016/09/14	105	80 - 120	98	80 - 120	<50	ug/L	NC	20		
8397573	Total Cadmium (Cd)	2016/09/14	101	80 - 120	101	80 - 120	<0.010	ug/L	NC	20		
8397573	Total Chromium (Cr)	2016/09/14	100	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		
8397573	Total Cobalt (Co)	2016/09/14	101	80 - 120	99	80 - 120	<0.50	ug/L	NC	20		
8397573	Total Copper (Cu)	2016/09/14	100	80 - 120	100	80 - 120	<0.50	ug/L	NC	20		
8397573	Total Iron (Fe)	2016/09/14	108	80 - 120	112	80 - 120	<10	ug/L	NC	20		
8397573	Total Lead (Pb)	2016/09/14	104	80 - 120	99	80 - 120	<0.20	ug/L	NC	20		

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QUALITY ASSURANCE REPORT(CONT'D)

SLR CONSULTING (CANADA) LTD
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Site Location: SMALLWOOD
Sampler Initials: DK, DP

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8397573	Total Lithium (Li)	2016/09/14	101	80 - 120	102	80 - 120	<5.0	ug/L	NC	20		
8397573	Total Manganese (Mn)	2016/09/14	99	80 - 120	98	80 - 120	<1.0	ug/L	NC	20		
8397573	Total Molybdenum (Mo)	2016/09/14	89	80 - 120	100	80 - 120	<1.0	ug/L	NC	20		
8397573	Total Nickel (Ni)	2016/09/14	104	80 - 120	103	80 - 120	<1.0	ug/L	NC	20		
8397573	Total Selenium (Se)	2016/09/14	103	80 - 120	105	80 - 120	<0.10	ug/L	NC	20		
8397573	Total Silicon (Si)	2016/09/14					<100	ug/L	NC	20		
8397573	Total Silver (Ag)	2016/09/14	101	80 - 120	108	80 - 120	<0.020	ug/L	NC	20		
8397573	Total Strontium (Sr)	2016/09/14	96	80 - 120	102	80 - 120	<1.0	ug/L	NC	20		
8397573	Total Thallium (Tl)	2016/09/14	96	80 - 120	94	80 - 120	<0.050	ug/L	NC	20		
8397573	Total Tin (Sn)	2016/09/14	98	80 - 120	100	80 - 120	<5.0	ug/L	NC	20		
8397573	Total Titanium (Ti)	2016/09/14	96	80 - 120	97	80 - 120	<5.0	ug/L	NC	20		
8397573	Total Uranium (U)	2016/09/14	101	80 - 120	98	80 - 120	<0.10	ug/L	NC	20		
8397573	Total Vanadium (V)	2016/09/14	101	80 - 120	96	80 - 120	<5.0	ug/L	NC	20		
8397573	Total Zinc (Zn)	2016/09/14	107	80 - 120	103	80 - 120	<5.0	ug/L	NC	20		
8397573	Total Zirconium (Zr)	2016/09/14					<0.50	ug/L	NC	20		
8397762	Total Aluminum (Al)	2016/09/14	107	80 - 120	112	80 - 120	<3.0	ug/L	1.1	20		
8397762	Total Antimony (Sb)	2016/09/14	103	80 - 120	102	80 - 120	<0.50	ug/L				
8397762	Total Arsenic (As)	2016/09/14	104	80 - 120	107	80 - 120	<0.10	ug/L	6.1	20		
8397762	Total Barium (Ba)	2016/09/14	99	80 - 120	99	80 - 120	<1.0	ug/L				
8397762	Total Beryllium (Be)	2016/09/14	105	80 - 120	100	80 - 120	<0.10	ug/L				
8397762	Total Bismuth (Bi)	2016/09/14	101	80 - 120	104	80 - 120	<1.0	ug/L				
8397762	Total Boron (B)	2016/09/14	105	80 - 120	102	80 - 120	<50	ug/L	NC	20		
8397762	Total Cadmium (Cd)	2016/09/14	103	80 - 120	103	80 - 120	<0.010	ug/L	NC	20		
8397762	Total Chromium (Cr)	2016/09/14	100	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
8397762	Total Cobalt (Co)	2016/09/14	97	80 - 120	104	80 - 120	<0.50	ug/L	NC	20		
8397762	Total Copper (Cu)	2016/09/14	94	80 - 120	102	80 - 120	<0.50	ug/L	NC	20		
8397762	Total Iron (Fe)	2016/09/14	110	80 - 120	113	80 - 120	<10	ug/L	6.1	20		
8397762	Total Lead (Pb)	2016/09/14	104	80 - 120	108	80 - 120	<0.20	ug/L	NC	20		
8397762	Total Lithium (Li)	2016/09/14	104	80 - 120	100	80 - 120	<5.0	ug/L				
8397762	Total Manganese (Mn)	2016/09/14	100	80 - 120	107	80 - 120	<1.0	ug/L	3.4	20		
8397762	Total Molybdenum (Mo)	2016/09/14	107	80 - 120	106	80 - 120	<1.0	ug/L	NC	20		

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QUALITY ASSURANCE REPORT(CONT'D)

SLR CONSULTING (CANADA) LTD
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Site Location: SMALLWOOD
Sampler Initials: DK, DP

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
8397762	Total Nickel (Ni)	2016/09/14	97	80 - 120	108	80 - 120	<1.0	ug/L	NC	20		
8397762	Total Selenium (Se)	2016/09/14	106	80 - 120	103	80 - 120	<0.10	ug/L	NC	20		
8397762	Total Silicon (Si)	2016/09/14					<100	ug/L				
8397762	Total Silver (Ag)	2016/09/14	102	80 - 120	106	80 - 120	<0.020	ug/L	NC	20		
8397762	Total Strontium (Sr)	2016/09/14	NC	80 - 120	104	80 - 120	<1.0	ug/L				
8397762	Total Thallium (Tl)	2016/09/14	100	80 - 120	100	80 - 120	<0.050	ug/L				
8397762	Total Tin (Sn)	2016/09/14	104	80 - 120	104	80 - 120	<5.0	ug/L				
8397762	Total Titanium (Ti)	2016/09/14	109	80 - 120	100	80 - 120	<5.0	ug/L				
8397762	Total Uranium (U)	2016/09/14	105	80 - 120	105	80 - 120	<0.10	ug/L				
8397762	Total Vanadium (V)	2016/09/14	101	80 - 120	103	80 - 120	<5.0	ug/L				
8397762	Total Zinc (Zn)	2016/09/14	107	80 - 120	110	80 - 120	<5.0	ug/L	NC	20		
8397762	Total Zirconium (Zr)	2016/09/14					<0.50	ug/L				
8397832	Total Mercury (Hg)	2016/09/14	95	80 - 120	99	80 - 120	<0.010	ug/L	NC	20		
8397844	Dissolved Mercury (Hg)	2016/09/14	97	80 - 120	104	80 - 120	<0.010	ug/L	NC	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

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

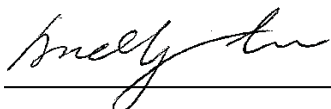
NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

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VALIDATION SIGNATURE PAGE

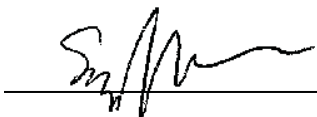
The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Andy Lu, Ph.D., P.Chem., Scientific Specialist



Maria Magdalena Florescu, Ph.D., P.Chem., QP, Inorganics Senior Analyst



Sandy Yuan, M.Sc., Scientific Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

INVOICE TO:		Report Information		Project Information		Laboratory Use Only	
Company Name: #1776 SLR CONSULTING (CANADA) LTD		Company Name: _____		Quotation #: B51186		Maxxam Job #: _____	
Contact Name: Jay Chorian KATRINA NOKLEY		Contact Name: _____		P.O. #: _____		Bottle Order #: _____	
Address: SLR YELLOWKNIFE		Address: _____		Project #: 234.01016.0000		B677943 SY3	
Phone: _____ Fax: _____		Phone: _____ Fax: _____		Project Name: GREAT BEAR LAKE		Chain Of Custody Record	
Report: jcherian@slrconsulting.com; analytical@slrconsulting.c		Invoice: knokley@slr...		Site #: Sawmill Bay Smallwood		Project Manager: _____	
Regulatory Criteria: knokley@slr...		Special Instructions: _____		Sampled By: DP/DK		C#503995-03-01	

Regulatory Criteria: <input type="checkbox"/> CSR <input checked="" type="checkbox"/> CCME <input type="checkbox"/> BC Water Quality <input type="checkbox"/> Other: _____		Special Instructions: _____		ANALYSIS REQUESTED (PLEASE BE SPECIFIC)										Turnaround Time (TAT) Required: _____	
				Metals Field Filtered 7 (Y/N)										Please provide advance notice for rush projects	
				Alkalinity, Conductivity, pH, Turbidity, TSS, TDS										Regular (Standard) TAT: _____	
				Chloride, Sulphate										(will be applied if Rush TAT is not specified):	
				Ammonia, Orthophosphate, Total phosphorus, Nitrate, Nitrite, DOC										Standard TAT = 5-7 Working days for most tests.	
				Total Metals in Water w/ CV Hg & Total Hardness										Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.	
				Dissolved Metals in Water w/ CV Hg & Dissolved Hardness										Job Specific Rush TAT (if applies to entire submission)	
				CCME BTEX/F1 in Water										1 DAY <input type="checkbox"/> 2 Day <input type="checkbox"/> 3 Day <input type="checkbox"/> Date Required: _____	
				CCME F2-F4 in Water										Rush Confirmation Number: _____	
				Gross Alpha & Beta										(call lab for #)	
				Lead-210 & Radium-226											

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM										Metals Field Filtered		Alkalinity, Cond TSS, TDS		Chloride	Sulphate	Ammonia, phosphate, Nitrite, DOC	Total Metals in Total Hardness	Dissolved Metals & Dissolved Hardness	CCME BTEX/F	CCME F2-F4 in	Gross Alpha & Beta	Lead-210 & Radium-226	Hold - H	1 DAY <input type="checkbox"/> 2 Day <input type="checkbox"/> 3 Day <input type="checkbox"/> Date Required: <input type="text"/>	Rush Confirmation Number: <input type="text"/>	(call lab for #)	# of Bottles	Comments
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix																								
1	Trip Blank	—	—	—	/	X	X	X	X																		8	
2	Dup G	09/04/2016	12:31	SW	/	X	X	X	X																		8	
3	SM-7-2m		10:52	SW	/	X	X	X	X																		8	RECEIVED IN YELLOWKNIFE By: <u>Michelle Michell</u> 8:40
4	SM-1		11:41	SW	/	X	X	X	X																		8	2016 -09- 07
5	Dup 10		11:41	SW	/	X	X	X	X																		8	
6	SM-7-7.5m		11:17	SW	/	X	X	X	X	X																	10	Temp: on ACTR / /
7	SM6-4.5m		12:10	SW	/	X	X	X	X																		8	
8	SM-2		12:22	SW	/	X	X	X	X																		8	
9	SM-6-2m		11:55	SW	/	X	X	X	X																		8	
10																												

RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)		Time		RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)		Time		# jars used and not submitted		Lab Use Only	
DALE PETERSON		16/09/06		10:00		David 2 David Titman		2016/09/08		12:43				Time Sensitive: <input type="checkbox"/> Temperature (°C) on Receipt: Sec ACTR Custody Seal Intact on Cooler? <input type="checkbox"/> Yes <input type="checkbox"/> No	

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

Appendix D

Photos

Great Bear Lake Sites
2016 Water Quality Monitoring Report
SLR Project No: 234.01016.00001

LIST OF PHOTOGRAPHS

- Photo 1: Aerial view of Beach Landing at Sawmill Bay
- Photo 2: Sample Location A3-SW08-1 at Sawmill Bay. Latitude: 65.72237
Longitude: 118.91343
- Photo 3: Sampling location SW-B-2 at Sawmill Bay. Latitude: 65.72078
Longitude: 118.89063
- Photo 4: Sampling location SW07-3 at Sawmill Bay Latitude: 65.72072
Longitude: 118.89197
- Photo 5: Sample location SW16-01 at Sawmill Bay. Latitude: 65.72186
Longitude: 118.89242
- Photo 6: Sampling location SW16-02 at Sawmill Bay. Latitude: 65.72141
Longitude: 118.88751
- Photo 7: Background sample location BG-SW08-01 at Sawmill Bay. Latitude:
65.72806 Longitude: 118.86999
- Photo 8: Sawmill Bay background location BG-SW-08-04 Latitude: 65.71462
Longitude: 118.93106
- Photo 9: Sawmill Bay background location BG-SW-08-5. Latitude: 65.69525
Longitude: 118.84811
- Photo 10: Sample location ELB-SW-2. Thick brush growing overtop of creek.
Latitude: 66.00417 Longitude: 118.07748
- Photo 11: Sample location ELB-6-SL. Culvert between Silver Lake and Mile
Lake. Latitude: 66.00365 Longitude: 118.07096
- Photo 12: Looking southwest from waste rock pile at El Bonanza
- Photo 13: Looking down from the waste rock pile to ELB-7-SL-2
- Photo 14: Sample location ELB-7-SL-2. Latitude: 66.00365 Longitude:
118.07462
- Photo 15: Sample location ELB-8-SL. Latitude: 66.00393 Longitude: 118.07581
- Photo 16: BON-SW-1. Latitude: 66.01006 Longitude: 118.09592
- Photo 17: Tanks on the beach of Great Bear Lake at El Bonanza
- Photo 18: Sample location CL-2. Seep out of waste rock toe. Latitude:
65.99322 Longitude: 117.80045
- Photo 19: Sample location CL-15. Inflow into tailings pond. Latitude: 65.99163
Longitude: 117.80176
- Photo 20: Aerial view of lower lake (tailings pond) at Contact Lake
- Photo 21: Sample location CL-3. Tailings pond outflow. Latitude: 65.99067
Longitude: 117.80138
- Photo 22: Sample location CL-2B along creek from tailings pond to Contact
Lake. Latitude: 65.99047 Longitude: 117.80139
- Photo 23: Sample location CL-5. Flow from tailings pond into Contact Lake.
Latitude: 65.99018 Longitude: 117.80148
- Photo 24: Sample location CL-26. Outflow from tailings pond ~20 m from
shore. Latitude: 65.98927 Longitude: 117.80215
- Photo 25: Fuel tank above dock (sample location CL-7-EA) in the east arm of
Great Bear Lake. Latitude: 66.00652 Longitude: 117.75593

- Photo 26:** Sample location CL-7-EA, from dock. East arm of Great Bear Lake. Latitude: 66.00621 Longitude: 117.75464
- Photo 27:** Shoreline sample location CL-8, ~4.5 km from main mine site, in northwest bay. Latitude: 65.00552 Longitude: 117.88678
- Photo 28:** Shoreline sample location CL-9 in Contact Lake, ~700 m southeast of main mine site. Latitude: 65.98469 Longitude: 117.79029
- Photo 29:** Background sample location CL-14. Southeast side of Contact Lake. Latitude: 65.99352 Longitude: 117.81139
- Photo 30:** Background sample location CL-16-EA. East Arm of Great Bear Lake. Latitude: 66.00834 Longitude: 117.75475
- Photo 31:** Shoreline sample location CL-27-EA. East Arm of Great Bear Lake. Latitude: 66.06730 Longitude: 117.75464
- Photo 32:** Aerial view of Terra Mine site
- Photo 33:** Looking into Jackfish Bay from sample location T1 at Terra Mine. Latitude: 65.59738 Longitude: 118.11088
- Photo 34:** Sign at trail head to sample location T2 at Terra Mine
- Photo 35:** Sample location T2 at Terra Mine. Latitude: 65.59850 Longitude: 118.113745
- Photo 36:** Sign above sample location T3 at Terra Mine
- Photo 37:** Sample location T4 at Terra Mine. Latitude: 65.60672 Longitude: 118.11246
- Photo 38:** Sample location T5 at Terra Mine. Latitude: 65.60475 Longitude: 118.12608
- Photo 39:** Water entering Moose Bay around weir (sample location T6 at Terra Mine). Algae indicates direction of flow is westerly. Latitude: 65.60711 Longitude: 118.13647
- Photo 40:** Sample location T7 at Terra Mine. Latitude: 65.60117 Longitude: 118.12051
- Photo 41:** Sample location T8A/B/C in Ho-Hum Lake at Terra Mine. Latitude: 65.60326 Longitude: 118.13046
- Photo 42:** Wier between Ho-Hum Lake and Moose Bay at Terra Mine. Latitude: 65.60680 Longitude: 118.13604
- Photo 43:** Sampling location T9 at Terra Mine. Latitude: 65.60680 Longitude: 118.13604
- Photo 44:** Sample location T16-2M/-10M (collected at 6 m depth) in Ho-Hum Lake at Terra Mine. Latitude: 65.60254 Longitude: 118.12528
- Photo 45:** Sample location T17 at Terra Mine. Latitude: 65.59651 Longitude: 118.11329
- Photo 46:** Culvert above sample location T17 at Terra Mine
- Photo 47:** Sample location T19 at Terra Mine adit. Latitude: 65.60868 Longitude: 118.12310
- Photo 48:** Sample location T20 at Terra Mine. Latitude: 65.60634 Longitude: 118.11136
- Photo 49:** Sample location T25 at Terra Mine. Latitude: 65.59430 Longitude: 118.10873

Photo 50:	Sample location W-4 at Terra Mine. Latitude: 65.60614 Longitude: 118.10769
Photo 51:	Regional Sample R3, Tutcho Lake. Latitude: 65.59953 Longitude: 118.16817
Photo 52:	Sample location NO-3 at Northrim. Latitude: 65.59697 Longitude: 117.98470
Photo 53:	Sample location NO-7-2M at Northrim. Latitude: 65.59757 Longitude: 117.98450
Photo 54:	Sample location NO-11-2M at Northrim. Latitude: 65.59931 Longitude: 117.98164
Photo 55:	Sample location NO-2 at Northrim. Latitude: 65.59686 Longitude: 117.98384
Photo 56:	Sample location NO-4 at Northrim. Latitude: 65.59652 Longitude: 117.98132
Photo 57:	Sample location NO-6 at Northrim. Latitude: 65.5955 Longitude: 117.98093
Photo 58:	Sample location NO-5 at Northrim. Latitude: 65.59582 Longitude: 117.97896
Photo 59:	Sample location NO-9 at Northrim. Latitude: 65.59629 Longitude: 117.97713
Photo 60:	Sample location NO-1 at Northrim. Latitude: 65.59612 Longitude: 117.97713
Photo 61:	Sample location R-4 at Northrim. Latitude: 65.60479 Longitude: 117.9623
Photo 62:	Sample location Norex-5 at Graham Vein. Latitude: 65.58657 Longitude: 117.05872
Photo 63:	Sample location Norex-6 at Graham Vein. Latitude: 65.58694 Longitude: 117.95606
Photo 64:	Sample location Norex-1, adit drainage. Latitude: 65.58881 Longitude: 117.9664
Photo 65:	Sample location Norex-3 at toe of waste rock. Latitude: 65.58882 Longitude: 117.96641
Photo 66:	Sample location Norex-2 at toe of waste rock. Latitude: 65.59012 Longitude: 117.96761
Photo 67:	Near sample location NX-4 at Norex. Latitude: 65.59200 Longitude: 117.96787
Photo 68:	Drainage flowing from the waste rock at Norex
Photo 69:	Iron staining at Smallwood on waste rock road leading to lake
Photo 70:	Sample location SM-1 at Smallwood. Latitude: 65.58130 Longitude: 117.94434
Photo 71:	Sample location SM-2 at Smallwood. Latitude: 65.58181 Longitude: 117.94321
Photo 72:	Sample location SM-7-2M / -7.5M at Smallwood. Latitude: 65.57690 Longitude: 117.94748



Photo 1: Aerial view of Beach Landing at Sawmill Bay.



Photo 2: Sample Location A3-SW08-1 at Sawmill Bay.
Latitude: 65.72237 Longitude: 118.91343



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Photo 3: Sampling location SW-B-2 at Sawmill Bay.
Latitude: 65.72078 Longitude: 118.89063



Photo 4: Sampling location SW07-3 at Sawmill Bay.
Latitude: 65.72072 Longitude: 118.89197



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Photo 5: Sample location SW16-01 at Sawmill Bay.
Latitude: 65.72186 Longitude: 118.89242



Photo 6: Sampling location SW16-02 at Sawmill Bay.
Latitude: 65.72141 Longitude: 118.88751



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Photo 7: Background sample location BG-SW08-01 at Sawmill Bay.
Latitude: 65.72806 Longitude: 118.86999



Photo 8: Sawmill Bay background location BG-SW-08-04.
Latitude: 65.71462 Longitude: 118.93106



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Photo 9: Sawmill Bay background location BG-SW-08-5.
Latitude: 65.69525 Longitude: 118.84811



Photo 10: Sample location ELB-SW-2. Thick brush growing overtop of creek.
Latitude: 66.00417 Longitude: 118.07748



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Photo 11: Sample location ELB-6-SL. Culvert between Silver Lake and Mile Lake.
Latitude: 66.00365 Longitude: 118.07096



Photo 12: Looking southwest from waste rock pile at El Bonanza.



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Photo 13: Looking down from the waste rock pile to ELB-7-SL-2.



Photo 14: Sample location ELB-7-SL-2.
Latitude: 66.00365 Longitude: 118.07462



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Photo 15: Sample location ELB-8-SL.
Latitude: 66.00393 Longitude: 118.07581



Photo 16: BON-SW-1.
Latitude: 66.01006 Longitude: 118.09592



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Photo 17: Tanks on the beach of Great Bear Lake at El Bonanza.



Photo 18: Sample location CL-2. Seep out of waste rock toe.
Latitude: 65.99322 Longitude: 117.80045



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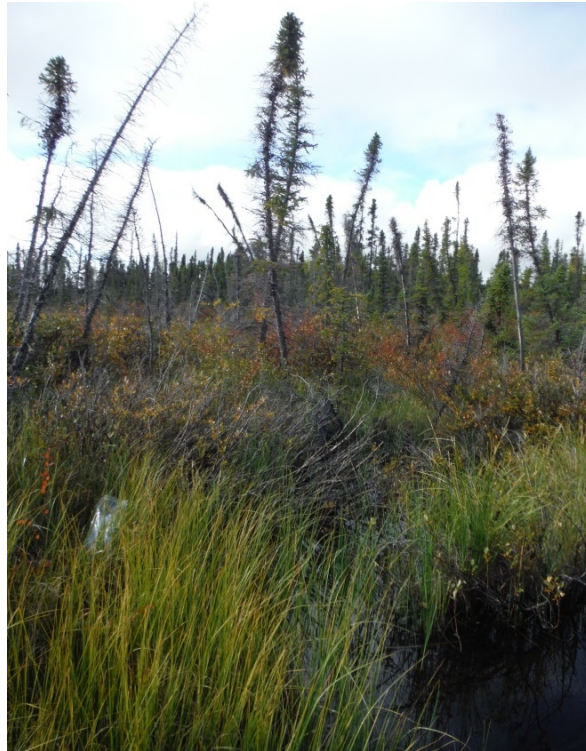


Photo 19: Sample location CL-15. Inflow into tailings pond.
Latitude: 65.99163 Longitude: 117.80176



Photo 20: Aerial view of lower lake (tailings pond) at Contact Lake.



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Photo 21: Sample location CL-3. Tailings pond outflow.
Latitude: 65.99067 Longitude: 117.80138



Photo 22: Sample location CL-2B along creek from tailings pond to Contact Lake.
Latitude: 65.99047 Longitude: 117.80139



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Photo 23: Sample location CL-5. Flow from tailings pond into Contact Lake.
Latitude: 65.99018 Longitude: 117.80148



Photo 24: Sample location CL-26. Outflow from tailings pond ~20 m from shore.
Latitude: 65.98927 Longitude: 117.80215



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Photo 25: Fuel tank above dock (sample location CL-7-EA) in the east arm of Great Bear Lake.
Latitude: 66.00652 Longitude: 117.75593



Photo 26: Sample location CL-7-EA, from dock. East arm of Great Bear Lake.
Latitude: 66.00621 Longitude: 117.75464



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Photo 27: Shoreline sample location CL-8, ~4.5 km from main mine site, in northwest bay.
Latitude: 65.00552 Longitude: 117.88678



Photo 28: Shoreline sample location CL-9 in Contact Lake, ~700 m southeast of main mine site.
Latitude: 65.98469 Longitude: 117.79029



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Photo 29: Background sample location CL-14. Southeast side of Contact Lake.
Latitude: 65.99352 Longitude: 117.81139



Photo 30: Background sample location CL-16-EA. East Arm of Great Bear Lake.
Latitude: 66.00834 Longitude: 117.75475



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Photo 31: Shoreline sample location CL-27-EA. East Arm of Great Bear Lake.
Latitude: 66.06730 Longitude: 117.75464



Photo 32: Aerial view of Terra Mine site.



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Photo 33: Looking into Jackfish Bay from sample location T1 at Terra Mine.
Latitude: 65.59738 Longitude: 118.11088



Photo 34: Sign at trail head to sample location T2 at Terra Mine.



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Photo 35: Sample location T2 at Terra Mine.
Latitude: 65.59850 Longitude: 118.113745



Photo 36: Sign above sample location T3 at Terra Mine.



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Photo 37: Sample location T4 at Terra Mine.
Latitude: 65.60672 Longitude: 118.11246



Photo 38: Sample location T5 at Terra Mine.
Latitude: 65.60475 Longitude: 118.12608



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Photo 39: Water entering Moose Bay around weir (sample location T6 at Terra Mine). Algae indicates direction of flow is westerly. Latitude: 65.60711 Longitude: 118.13647

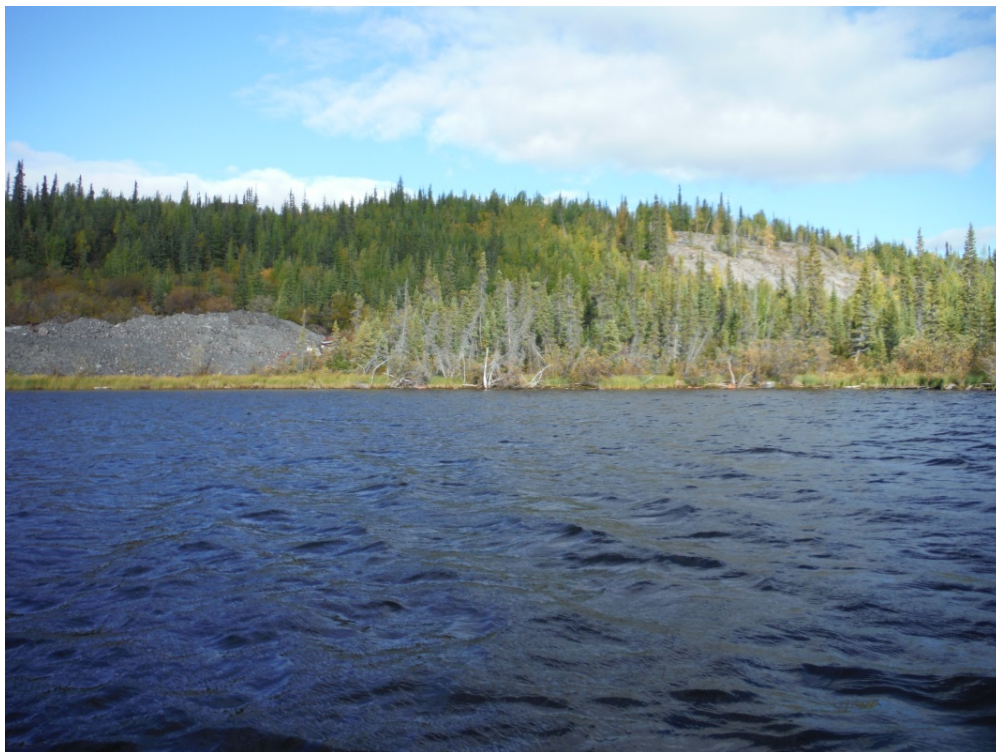


Photo 40: Sample location T7 at Terra Mine. Latitude: 65.60117 Longitude: 118.12051



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Photo 41: Sample location T8A/B/C in Ho-Hum Lake at Terra Mine.
Latitude: 65.60326 Longitude: 118.13046



Photo 42: Wier between Ho-Hum Lake and Moose Bay at Terra Mine.
Latitude: 65.60680 Longitude: 118.13604



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Photo 43: Sampling location T9 at Terra Mine.
Latitude: 65.60680 Longitude: 118.13604



Photo 44: Sample location T16-2M/-10M (collected at 6 m depth) in Ho-Hum Lake at Terra Mine. Latitude: 65.60254 Longitude: 118.12528



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Photo 45: Sample location T17 at Terra Mine.
Latitude: 65.59651 Longitude: 118.11329



Photo 46: Culvert above sample location T17 at Terra Mine.



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Photo 47: Sample location T19 at Terra Mine adit.
Latitude: 65.60868 Longitude: 118.12310



Photo 48: Sample location T20 at Terra Mine.
Latitude: 65.60634 Longitude: 118.11136



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Photo 49: Sample location T25 at Terra Mine.
Latitude: 65.59430 Longitude: 118.10873



Photo 50: Sample location W-4 at Terra Mine.
Latitude: 65.60614 Longitude: 118.10769



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Photo 51: Regional Sample R3, Tutcho Lake.
Latitude: 65.59953 Longitude: 118.16817



Photo 52: Sample location NO-3 at Northrim.
Latitude: 65.59697 Longitude: 117.98470



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Photo 53: Sample location NO-7-2M at Northrim.
Latitude: 65.59757 Longitude: 117.98450



Photo 54: Sample location NO-11-2M at Northrim.
Latitude: 65.59931 Longitude: 117.98164



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Photo 55: Sample location NO-2 at Northrim.
Latitude: 65.59686 Longitude: 117.98384



Photo 56: Sample location NO-4 at Northrim.
Latitude: 65.59652 Longitude: 117.98132



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Photo 57: Sample location NO-6 at Northrim.
Latitude: 65.5955 Longitude: 117.98093



Photo 58: Sample location NO-5 at Northrim.
Latitude: 65.59582 Longitude: 117.97896



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Photo 59: Sample location NO-9 at Northrim.
Latitude: 65.59629 Longitude: 117.97713



Photo 60: Sample location NO-1 at Northrim.
Latitude: 65.59612 Longitude: 117.97713



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Photo 61: Sample location R-4 at Northrim.
Latitude: 65.60479 Longitude: 117.9623



Photo 62: Sample location Norex-5 at Graham Vein.
Latitude: 65.58657 Longitude: 117.05872



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Photo 63: Sample location Norex-6 at Graham Vein.
Latitude: 65.58694 Longitude: 117.95606



Photo 64: Sample location Norex-1, adit drainage.
Latitude: 65.58881 Longitude: 117.9664



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Photo 65: Sample location Norex-3 at toe of waste rock.
Latitude: 65.58882 Longitude: 117.96641



Photo 66: Sample location Norex-2 at toe of waste rock.
Latitude: 65.59012 Longitude: 117.96761



Photo 67: Near sample location NX-4 at Norex.
Latitude: 65.59200 Longitude: 117.96787



Photo 68: Drainage flowing from the waste rock at Norex.



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Photo 69: Iron staining at Smallwood on waste rock road leading to lake.



Photo 70: Sample location SM-1 at Smallwood.
Latitude: 65.58130 Longitude: 117.94434



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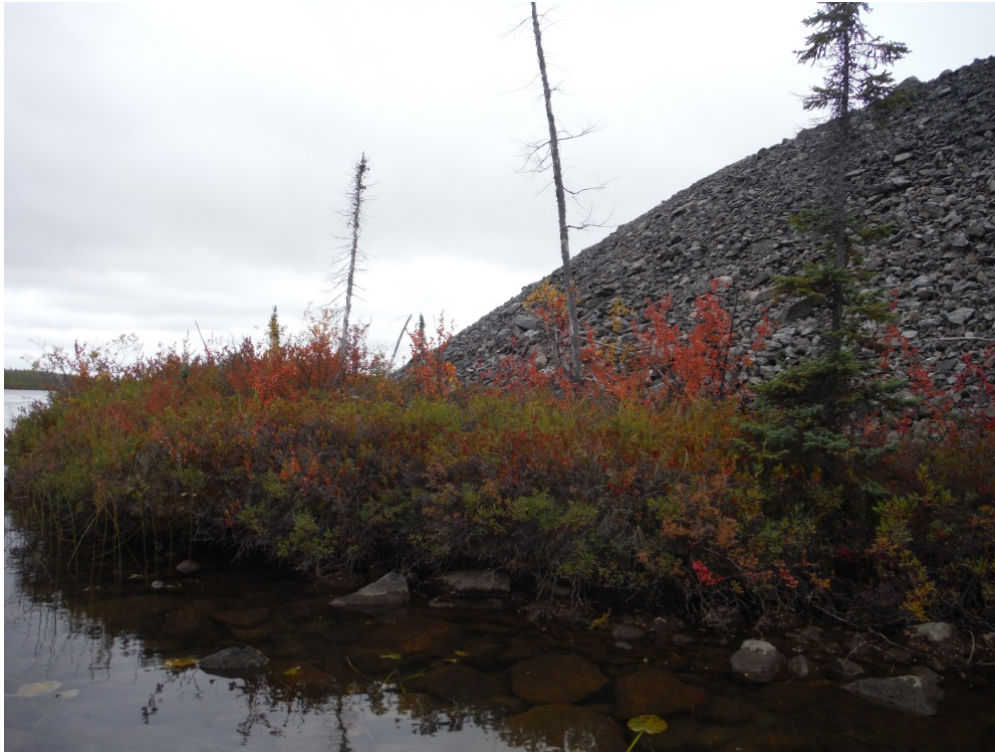


Photo 71: Sample location SM-2 at Smallwood.
Latitude: 65.58181 Longitude: 117.94321



Photo 72: Sample location SM-7-2M / -7.5M at Smallwood.
Latitude: 65.57690 Longitude: 117.94748



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Appendix E

Master Sample Location List

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APPENDIX E
TABLE E-1: 2016 WATER QUALITY MONITORING PROGRAM - SAMPLE MASTER LIST

SITE	SAMPLE ID	LATITUDE	LONGITUDE	ELEVATION	DATE	NOTES
Sawmill Bay	A3-SW08-01	65.72237	-118.91343	156.91	1-Sep-16	A3-SW08-01, sample from creek flowing into Sawmill Bay
Sawmill Bay	A3-SW08-05-2	65.72225	-118.91231	154.99	1-Sep-16	A3-SW08-05, sample from outflow of creek entering Sawmill Bay
Sawmill Bay	BG-SW08-01-2	65.72806	-118.86999	153.89	1-Sep-16	BG-SW08-01, sample from Sawmill Bay
Sawmill Bay	BG-SW08-03	65.73736	-118.79700	158.00	1-Sep-16	BG-SW08-03, Background, Along N shore
Sawmill Bay	BG-SW08-04	65.71463	-118.93106	196.58	1-Sep-16	BG-SW08-04, shore sample from water body upgradient from Sawmill Bay
Sawmill Bay	BG-SW08-05	65.69525	-118.84811	191.60	1-Sep-16	BG-SW08-5, shore sample from water body near Sawmill Bay
Sawmill Bay	SW07-3	65.72072	-118.89197	160.36	1-Sep-16	SW07-3, shoreline sample from Sawmill Bay
Sawmill Bay	SW16-01-2	65.72186	-118.89242	159.49	1-Sep-16	SW16-01, sample from Sawmill Bay - 2 meter
Sawmill Bay	SW16-01-6	65.72186	-118.89242	159.49	1-Sep-16	SW16-01, sample from Sawmill Bay - 6 meter
Sawmill Bay	SW16-02-2	65.72141	-118.88751	154.01	1-Sep-16	SW16-02, sample from Sawmill Bay - 2 meter
Sawmill Bay	SW16-02-6	65.72141	-118.88751	154.01	1-Sep-16	SW16-02, sample from Sawmill Bay - 6 meter
Sawmill Bay	SW-B-2	65.72078	-118.89064	157.50	1-Sep-16	SW-B-2, sample from Sawmill Bay
El Bonanza	BON SW 1	66.01005	-118.09592	185.53	30-Aug-16	BON-SW-1, sample from shoreline at base of Bonanza minesite
El Bonanza	ELB-1-GBL	65.99782	-118.10002	157.47	30-Aug-16	ELB-1-GBL, sample from shore of Great Bear Lake
El Bonanza	ELB-3-ML-10	66.00620	-118.05424	183.15	30-Aug-16	ELB-3-ML, sample from Mile Lake - 10 meter
El Bonanza	ELB-3-ML-2	66.00620	-118.05424	183.15	30-Aug-16	ELB-3-ML, sample from Mile Lake - 2 meter
El Bonanza	ELB-4-ML	66.00400	-118.07069	181.39	30-Aug-16	ELB-4-ML, sample from Mile Lake near inflow to Silver Lake
El Bonanza	ELB-5-SL-10	66.00279	-118.07122	182.63	30-Aug-16	ELB-5-SL, sample from Silver Lake - 10 meter
El Bonanza	ELB-5-SL-2	66.00279	-118.07122	182.63	30-Aug-16	ELB-5-SL, sample from Silver Lake - 2 meter
El Bonanza	ELB-6-SL	66.00366	-118.07096	182.38	30-Aug-16	ELB-6-SL, sample from channel connecting Mile Lake and Silver Lake
El Bonanza	ELB-7-SL	66.00365	-118.07475	180.26	30-Aug-16	ELB-7-SL, sample from shore of Silver Lake
El Bonanza	ELB-7-SL-2	66.00365	-118.07462	181.01	30-Aug-16	ELB-7-SL-2, sample from Silver Lake
El Bonanza	ELB-8-SL	66.00393	-118.07581	180.12	30-Aug-16	ELB-8-SL, sample from mouth of creek flowing from Silver Lake
El Bonanza	ELB-9-GBL	65.99687	-118.10251	157.57	30-Aug-16	ELB-9-GBL, sample from Great Bear Lake
El Bonanza	ELB-SW-2	66.00417	-118.07748	21.32	30-Aug-16	ELB-SW-2, sample from creek flowing from Silver Lake
Contact Lake	CL-2	65.99322	-117.80045	249.90	31-Aug-16	CL-2, sample near seep from waste rock
Contact Lake	CL-2B	65.99047	-117.80139	239.72	31-Aug-16	CL-2B, sample from creek running into Contact Lake
Contact Lake	CL-3	65.99067	-117.80138	239.03	31-Aug-16	CL-3, sample from outflow of pond
Contact Lake	CL-5	65.99018	-117.80148	234.10	31-Aug-16	CL-5, sample from creek running into Contact Lake. Note: sample historically taken from shoreline
Contact Lake	CL-7-EA-2M	66.00621	-117.75516	161.66	31-Aug-16	CL-7-EA, shoreline (dock) sample from East Arm
Contact Lake	CL-8-2M	66.00552	-117.88678	227.79	31-Aug-16	CL-8, shoreline sample from Contact Lake
Contact Lake	CL-9	65.98469	-117.79029	227.60	31-Aug-16	CL-9, shoreline sample from Contact Lake
Contact Lake	CL-14	65.97026	-117.75802	226.83	31-Aug-16	CL-14, New background shoreline sample from Contact Lake. Note: 2016 Sample location is 2 km down stream of previous CL-14 site
Contact Lake	CL-15	65.99163	-117.80175	237.10	31-Aug-16	CL-15, sample from north side of pond
Contact Lake	CL-16-EA-10M	66.00834	-117.75475	156.98	31-Aug-16	CL-16-EA, sample from East Arm - 10 meter
Contact Lake	CL-16-EA-2M	66.00834	-117.75475	156.98	31-Aug-16	CL-16-EA, sample from East Arm - 2 meter
Contact Lake	CL-24	65.99163	-117.80175	224.05	31-Aug-16	CL-24, shoreline sample from Contact Lake
Contact Lake	CL-26-2M	65.98972	-117.80215	226.59	31-Aug-16	CL-26, sample from Contact Lake near outflow of creek
Contact Lake	CL-27-EA	66.00673	-117.75464	160.63	31-Aug-16	CL-27-EA, shoreline sample from East Arm
Terra Mine	T1	65.59738	-118.11088	158.63	3-Sep-16	T-1, shore sample of Jackfish Bay
Terra Mine	T2	65.59850	-118.11375	160.96	3-Sep-16	T-2, shore sample from Little Ho-Hum Lake
Terra Mine	T3	65.60310	-118.12409	162.38	3-Sep-16	T-3, shore sample of Ho-Hum Lake near tailings
Terra Mine	T4	65.60672	-118.11246	160.86	3-Sep-16	T-4, shore sample of Camsell River near dock
Terra Mine	T5	65.60475	-118.12608	163.36	2-Sep-16	T5, west end close to the north shore below the mill
Terra Mine	T6	65.60711	-118.13647	159.98	2-Sep-16	T-6, creek sample of Lower Wetland near weir *Note: 2016 sample taken in different area than previous monitoring programs.

APPENDIX E
TABLE E-1: 2016 WATER QUALITY MONITORING PROGRAM - SAMPLE MASTER LIST

SITE	SAMPLE ID	LATITUDE	LONGITUDE	ELEVATION	DATE	NOTES
Terra Mine	T7	65.60117	-118.12051	155.48	2-Sep-16	Ho-Hum Lake, open water downstream of inflow from Little Ho-Hum Lake
Terra Mine	T8A	65.60326	-118.13046	153.81	2-Sep-16	T-8, sample from Ho-Hum Lake - surface
Terra Mine	T8B	65.60326	-118.13046	153.81	2-Sep-16	T8B, Ho-Hum Lake, downstream of mine, upstream of outflow - 6m below surface
Terra Mine	T8C	65.60326	-118.13046	153.81	3-Sep-16	T8C, Ho-Hum Lake, downstream of mine, upstream of outflow - 12m below surface
Terra Mine	T9	65.60681	-118.13604	162.05	3-Sep-16	T-9, shore sample of Ho-Hum Lake by weir
Terra Mine	T10	65.61028	-118.14598	158.57	3-Sep-16	T-10, shore sample of Moose Bay
Terra Mine	T16-2M	65.60254	-118.12528	155.88	2-Sep-16	T-16, sample from Ho-Hum Lake - 2 meter
Terra Mine	T16-10M	65.60254	-118.12528	155.88	2-Sep-16	T-16, sample from Ho-Hum Lake - 10 meter (actually collected at 6m)
Terra Mine	T17	65.59651	-118.11329	159.84	3-Sep-16	T-17, sample near culvert by landfill
Terra Mine	T18	65.59462	-118.10893	155.57	3-Sep-16	T-18, sample from pond near landfill
Terra Mine	T19	65.60868	-118.12310	179.58	3-Sep-16	T-19, sample of surface water in front of adit
Terra Mine	T19B	65.60663	-118.11171	162.39	3-Sep-16	T-19B, shore sample of Camsell River near water intake
Terra Mine	T20	65.60634	-118.11136	165.40	3-Sep-16	T-20, surface water sample in front of adit
Terra Mine	T25	65.59430	-118.10873	159.20	5-Sep-16	T25, sample from pond near landfills
Terra Mine	R3	65.59954	-118.16818	172.49	2-Sep-16	R3, shoreline sample from Tutcho Lake
Terra Mine	R4	65.60479	-117.96230	154.08	5-Sep-16	R-4, sample of Camsell River upstream of Northrim
Northrim	NO-1	65.59612	-117.97712	155.57	5-Sep-16	NO-1, pooled water connected Camsell River downgradient from waste rock
Northrim	NO-2	65.59686	-117.98384	183.76	5-Sep-16	NO-2, sample of leachate pond
Northrim	NO-3	65.59697	-117.98470	182.30	5-Sep-16	NO-3, sample of outflow from Hermandy Lake
Northrim	NO-4	65.59652	-117.98133	178.79	5-Sep-16	NO-4, sample of stream flowing from leachate pond, near ASTs
Northrim	NO-5	65.59582	-117.97896	159.31	5-Sep-16	NO-5, shore sample of Camsell River at dock
Northrim	NO-6	65.59549	-117.98093	159.85	5-Sep-16	NO-6, sample of outflow from Hermandy Lake into Camsell River
Northrim	NO-7-2M	65.59757	-117.98450	184.15	5-Sep-16	NO-7-2m, shore sample of Hermandy Lake
Northrim	NO-9	65.59629	-117.97704	157.16	5-Sep-16	NO-9, sample from water flowing from adit
Northrim	NO-11-2M	65.59932	-117.98165	183.02	5-Sep-16	NO-11-2m, shore sample of Hermandy Lake
Norex	NOREX 1	65.58881	-117.96640	207.02	4-Sep-16	NOREX-1, water sample collected from adit
Norex	NOREX 2	65.59011	-117.96761	190.15	4-Sep-16	NOREX-2, standing water near waste rock
Norex	NOREX 3	65.58882	-117.96641	193.99	4-Sep-16	NOREX-3, standing water near waste rock
Norex	NOREX 5	65.58657	-117.95872	242.00	4-Sep-16	NOREX-5, sample of standing water in Graham Vein
Norex	NOREX 6	65.58694	-117.95606	244.64	4-Sep-16	NOREX-6, shore sample of pool connected to Xeron Pond
Norex	NOREX 6B	65.58693	-117.95616	244.56	4-Sep-16	NOREX-6B, highly acidic standing water
Norex	NX-4	65.59200	-117.96787	184.32	4-Sep-16	NX-4, sample from stream connecting NOREX to Camsell River, *Note 2016 sample taken at different location than previous monitoring programs
Smallwood	SM-1	65.58130	-117.94434	230.15	4-Sep-16	SM-1, sample of Smallwood Lake near waste rock
Smallwood	SM-2	65.58181	-117.94321	231.98	4-Sep-16	SM-2, sample of Smallwood Lake near waste rock
Smallwood	SM-6-2M	65.58142	-117.94108	230.36	4-Sep-16	SM-6, sample of Smallwood Lake - 2 meter
Smallwood	SM-6-4.5M	65.58142	-117.94108	230.36	4-Sep-16	SM-6, sample of Smallwood Lake - 4.5 meter
Smallwood	SM-7-2M	65.57691	-117.94748	227.94	4-Sep-16	SM-7, sample of Smallwood Lake - 2 meter
Smallwood	SM-7-7.5M	65.57691	-117.94748	227.94	4-Sep-16	SM-7, sample of Smallwood Lake - 7.5 meter



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