

March 31, 2017

British Columbia Ministry of Energy and Mines
Mining and Minerals Division
6th Floor – 1810 Blanshard St
Victoria, BC, V8W 9N3

Attention: Ms. Diane Howe, M.A.Sc., P. Geo.
Deputy Chief Inspector - Permitting

Dear Ms. Howe,

Please find attached the 2016 Reclamation Report for the Shasta Mine - Baker Mine - Baker Mill ("The Property"). An Annual Reclamation Report was filed for the year ending 2010, however no reclamation reports have been submitted to MEM since. This report describes the exploration, reclamation and environmental programs undertaken on the property during 2016.

The mine continues to operate on a "Care and Maintenance" basis.

In 2014, Sable Resources ("The Company") received a MEM Inspection Report (No. 37577) that identified several non-compliances at the Property. The Company is committed to initiating work to address all the orders identified in Inspection Report No. 37577 during 2017.

The attached report reflects the situation in place at the Property at the end of 2016.

As per the Annual Reclamation Report Format Requirements (updated January 2017) the following table is included in this cover letter:

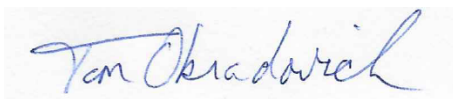
Company:	Sable Resources Ltd.	
Mine Name:	Shasta Mine-Baker Mine-Baker Mill	
Mines Act Permit #:	M-189 and MX-13-58	
	Previous Report (e.g., 2015)	Current Report (e.g., 2016)
Total Disturbance Area (ha)	37.90	41.16
Total Reclaimed Area (ha)	0	0
Total Exempt Area (ha) (i.e., pit walls)	0.0	0.0
Mining Production (annual total)	0	0
Milling Production (annual total)	0	0
Total Liability Estimate	[REDACTED]	TBD in 2017
Date for next Five Year Mine Plan and Reclamation Plan update (if required)	To be determined	

Sable Resources contact details are below:

Mine Manager: Tom Obradovich (416) 985-7140
Reclamation/Environment Manager: Joel Gillham (604) 817-7129

If you have any questions, comments or need further information or clarification please feel free to contact the undersigned.

Sincerely,



Tom Obradovich
President/CEO
Sable Resources Ltd.



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JDS Energy & Mining Inc.
Suite 900 – 999 West Hastings Street
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2016

Annual Reclamation Report

Mines Act Permit M-189 & Exploration Permit MX-13-58

Shasta Mine – Baker Mine – Baker Mill

Sable Resources Ltd.

March 31, 2017

Prepared for:

Sable Resources Ltd.

900-999 W Hastings St.
Vancouver, BC
V6C 2W2



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1 Executive Summary

This Annual Reclamation Report (ARR) describes any exploration, reclamation and environmental programs undertaken on the Shasta Mine – Baker Mine – Baker Mill (“The Property” or “The Project”) during 2016. The Property is operating under current Mines Act Permit M-189 and exploration permit MX-13-58.

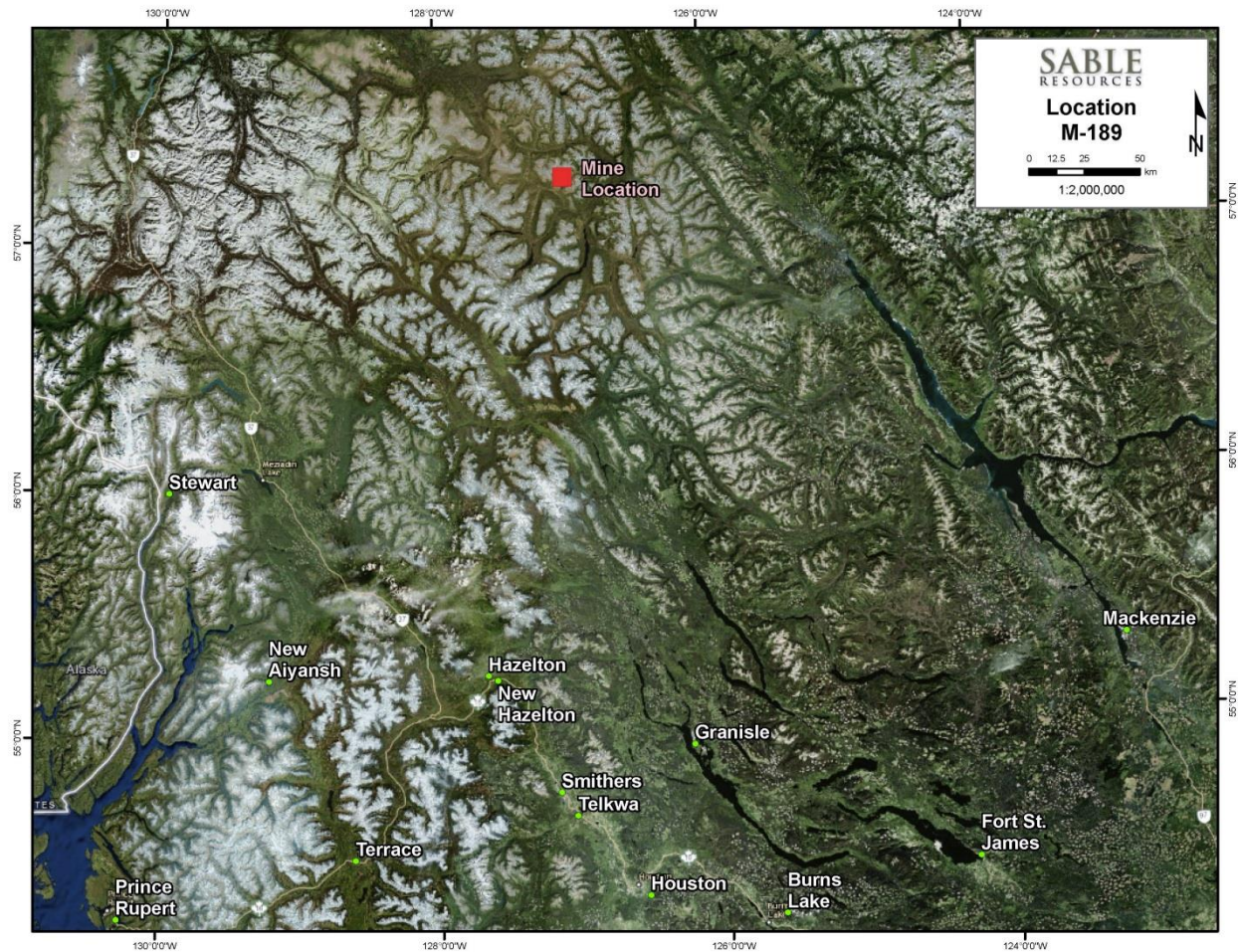
The only activities undertaken in 2016 on the Baker-Shasta Property included work to maintain the mine in a “Care and Maintenance” mode. No site preparation or revegetation was conducted on the Property in 2016.

Sections 5 and 6 of this report address current and future reclamation programs and associated cost estimates. This report reflects the situation at the Property at the end of 2016.

2 Introduction

Sable Resources Ltd. (“SRL” or “Sable”)’s properties are located in the Mackenzie Basin in the Toadoggone area of north central British Columbia (Figure 2.1). The Property is located 275 km north of Smithers, with road access from Mackenzie and Fort St. James. Air access via fixed wing aircraft is available to the Sturdee Airstrip, 11 km west from the Baker Property and the adjacent Baker Mill, or alternatively, at the Kemess mine.

Figure 2.1: Location Map



Source: Geographica Group (2017)



2.1 Annual Reclamation Report Objectives

The objectives of this annual reclamation report are as follows:

- to describe the mining program in terms of past, present, and future activities;
- to describe the environmental protection and reclamation plan;
- to describe future reclamation programs; and
- to present reclamation liability cost estimates.

2.2 Permit Area

The Property consists of multiple small underground operations with a central mill and tailings facility. Following an underground exploration and sampling program carried out in 2007-2008, Sable operated a relatively small mine (150 – 200 tonnes per day (“tpd”)) from 2009 to 2011. The Shasta deposit was mined by utilizing a stope specific mining approach based on advanced and ongoing exploration.

The Baker Mill is designed to accommodate approximately 200 tpd, along with flexible gravity and flotation circuit designs to handle varied copper-silver-gold, or silver-gold feed with different metallurgical recoveries, as well as variable grades.

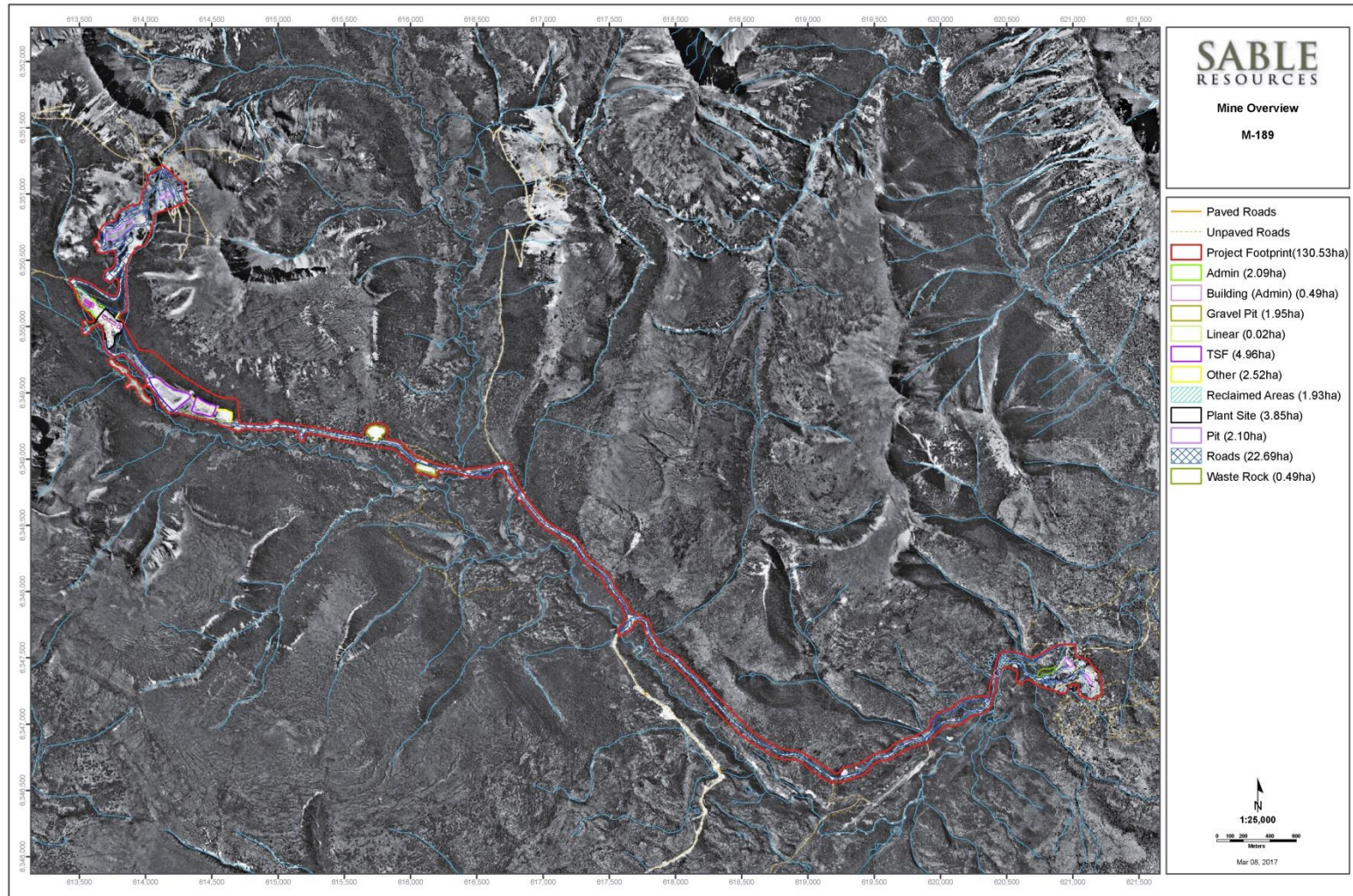
At the end of 2010, the Shasta Mine operation had two years of resources defined at 200 tpd. Exploration is planned to be conducted in 2017 to define new, and expand upon known mineralized zones with the potential to become future mill feed. The Shasta Mine and Toadoggone area has significant exploration potential, and contains numerous untested, or poorly explored areas. It is expected that the mine could be re-started with exploration, infill drilling and additional permitting work.

There are several proximal deposits either with defined resources or at advanced exploration stages that could potentially feed the Baker Mill, should they begin operating. These deposits and properties include the Lawyers deposit, the Mets Property, and Alberts Hump.

The Project key elements are presented on Figure 2.2, 2.3, 2.4 and 2.5 and include the following:

- Shasta underground mine and surface facilities;
- Baker Mill;
- Camp; and
- Tailings Storage Facilities (“TSF”).

Figure 2.2: Key Project Infrastructure (Orthophoto)



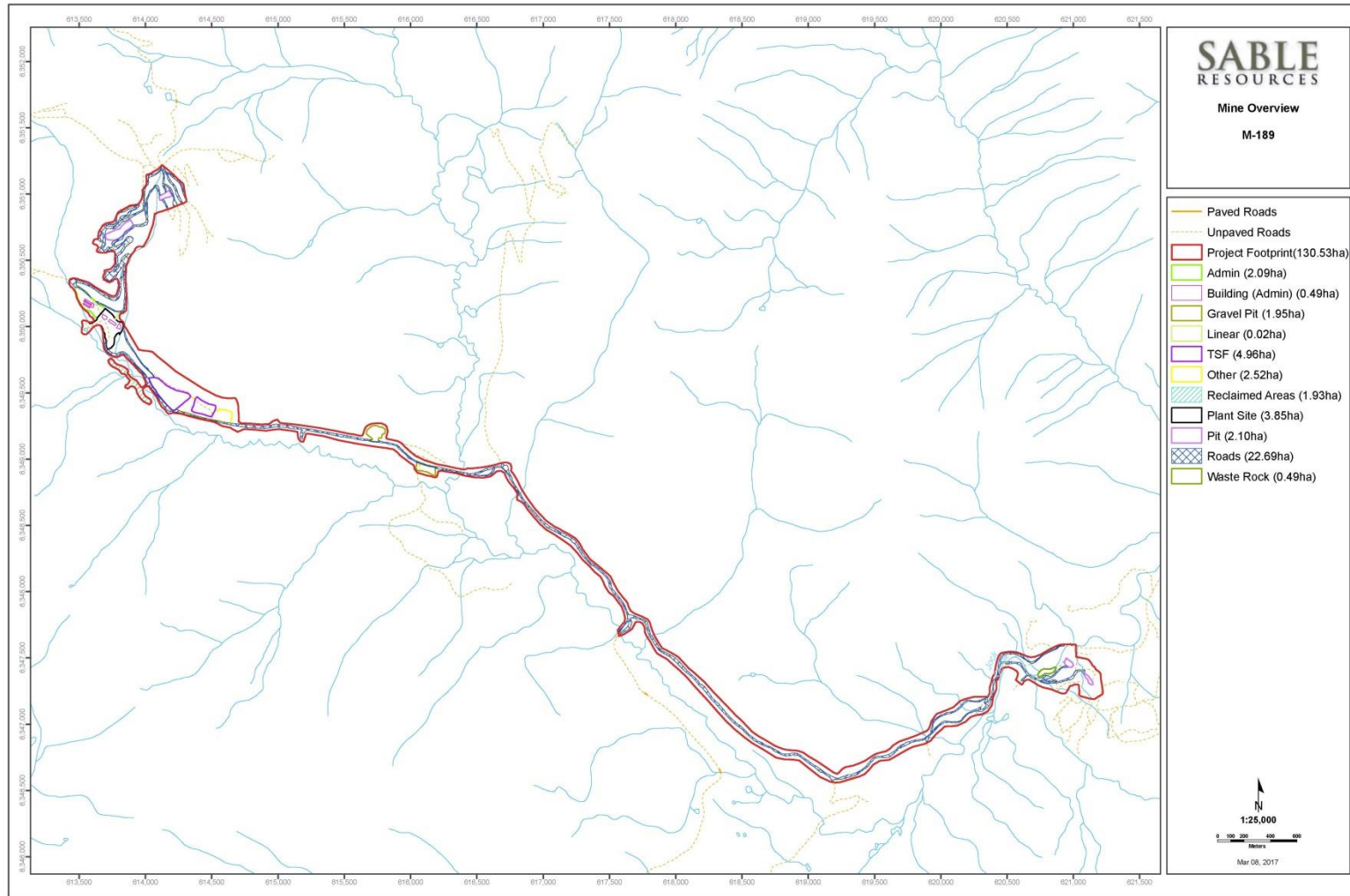
Source: Geographica Group (2017)

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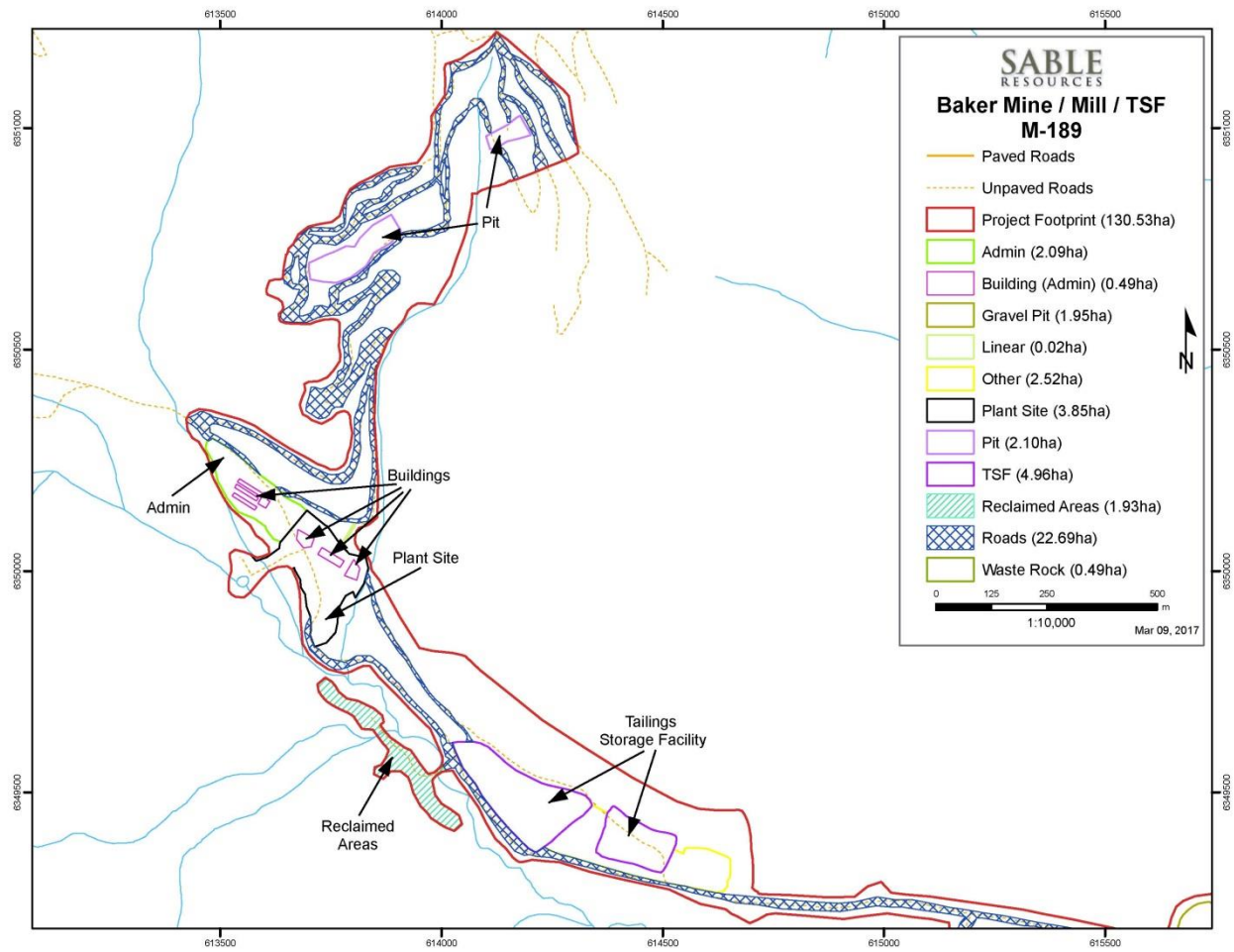


Figure 2.3: Key Project Infrastructure (No Orthophoto)



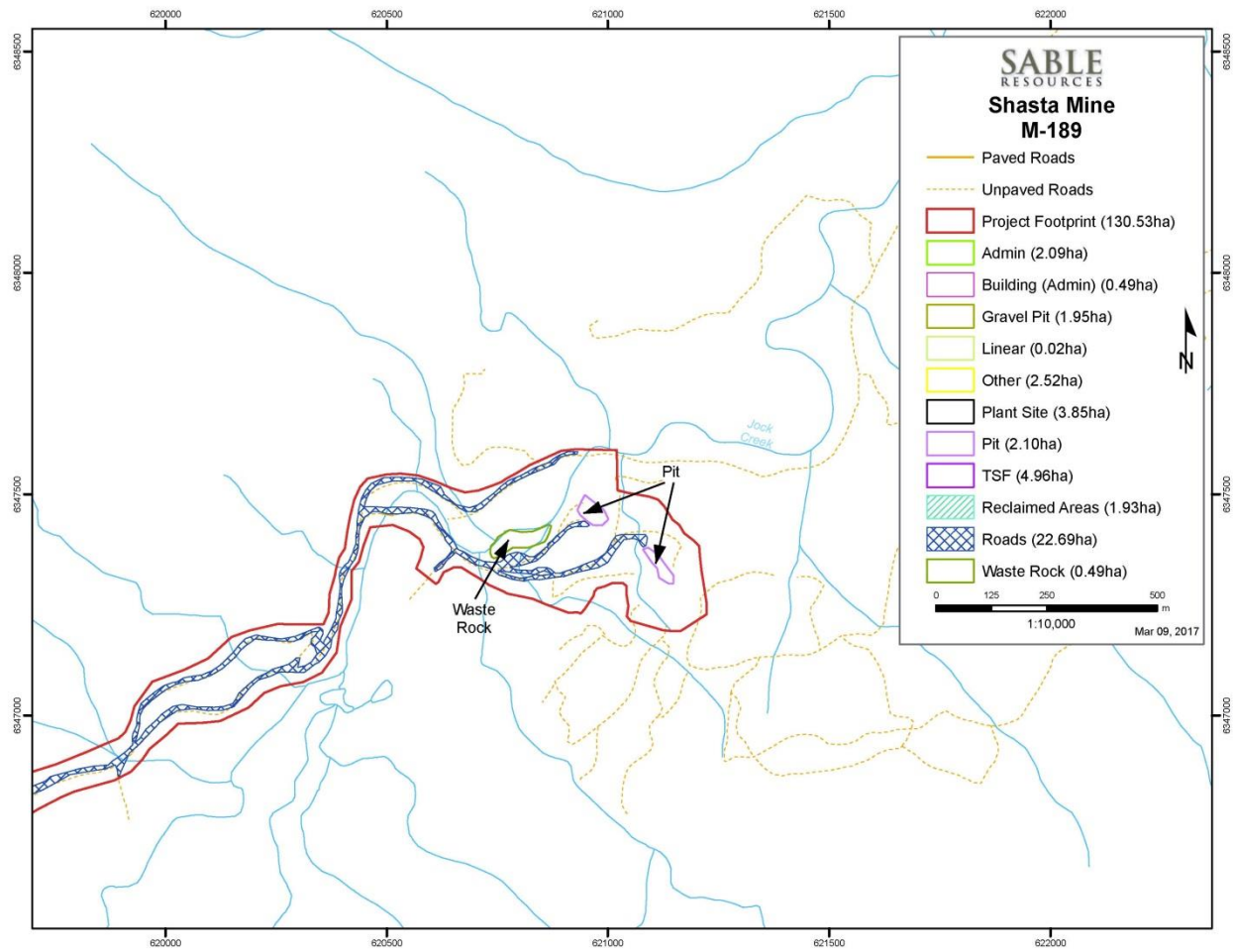
Source: Geographica Group (2017)

Figure 2.4: Baker Mill, Pit, TSF and Other Infrastructure



Source: Geographica Group (2017)

Figure 2.5: Shasta Mine Key Infrastructure



Source: Geographica Group (2017)



2.3 Ecological Setting

2.3.1 Ecosystems

The minesite falls within the Spruce-Willow-Birch (SWB) Biogeoclimatic Zone. At lower elevations, the landscape of the SWB Zone is mostly forested. The trees of forests are primarily a mixture of white spruce and subalpine fir. In many of the valleys in this Zone, the forest cover is made up of white spruce with variable amounts of lodgepole pine and trembling aspen in the valley bottoms and on lower slopes. Low and mid elevations within the Zone consist mainly of mature white spruce and subalpine fir. Higher on the slopes, subalpine fir dominates the forest.

2.3.2 Climate

The SWB Zone has the harshest climate of all the forested zones in British Columbia, second only to the Alpine Tundra. Winters in this Zone are long and cold, and summers are brief and cool. The mean annual temperature ranges between -0.7° and -3°C . Average temperatures remain above 10°C for only about a month in most parts of the Zone. Moist Pacific air frequently causes sudden, often violent, local storms during summer. The weather is more settled in winter, but chinook winds sometimes disrupt the cold spells.

2.3.3 Wildlife

Wildlife that are common in the area include mountain goat, sheep, moose, caribou, elk, wolves, and bears. Grizzly bear are more abundant than black bear in this area.

2.4 Land Use

2.4.1 Current Land Use

The closest communities to the Project by road are Germansen Landing (230 km south of the Project) and Manson Creek (250 km south of the Project). Germansen Landing is a historical mining town with still active placer gold operations and a growing tourism trade supported by guide outfitting, a general store, and accommodations. Manson Creek is also a historical mining town with some placer operations.

Regional communities include Mackenzie, Smithers, Terrace, Prince George, and Fort St. John. The major centres expected to supply the Project with materials and goods are Smithers, Prince George, and Kamloops. The regional economic base is supported primarily by forestry activities, and by mining. Tourism in the Project area, is limited, and primarily focused on outdoor pursuits such as fishing, hunting, camping, guide outfitting, and snowmobiling. The Project does not overlap with any provincial parks or protected areas. The closest provincial parks and protected areas to the Project are:

- Tatlatui Provincial Park, located approximately 15 km west of the Project;
- Spatsizi Plateau Wilderness Park, located 47 km northwest of the Project;
- Finlay – Russel Provincial Park, located approximately 35 km north/northeast of the Project; and



- Finlay – Russel Protected Area, located approximately 47 km northeast of the Project.

No formally designated environmentally sensitive areas (e.g., ecological reserves, conservancy areas, national wildlife areas) exist near the Project.

2.4.1.1 Agriculture

There is no agriculture capability within the Project area.

2.4.1.2 Forestry

No forestry operations overlap with the Property. Due to the elevation and merchantability of the timber, no planned harvesting is known at this time.

2.4.1.3 Fisheries

The Project is located near the Jock Creek watershed. Jock Creek has a total length of approximately 33 km, and is a sub-alpine stream with the mainstem valley occurring at approximately 1,200 m in elevation. A 10 m high falls and numerous cascades occur at the confluence of Jock Creek and the Toodoggone River, preventing fish from accessing the Jock Creek system. The Jock Creek watershed historically contained no fish, however, Black Lake (located at the headwaters of Jock Creek) was stocked by the Ministry of Environment in 1991 with 5,000 rainbow trout fry. These fish have since migrated downstream to the two small lakes located along the Jock Creek mainstem and to various locations within the watershed.¹

2.4.1.4 Recreation

Limited recreation opportunities exist near the Project area. The closest scenic area defined by the Ministry of Lands, Forest and Natural Resource Operations is Thudate Lake to the south. There are no back-country BCFS recreation sites near the Project, and it is classified as semi-primitive motorized and semi-primitive non-motorized depending on the elevation of the recreation experience being sought.

2.4.1.5 Industrial

The Project area is within the approved Mackenzie Land and Resource Management Plan (LRMP). Minerals are identified as an objective within the LRMP specific to the Project area. The objective of the LRMP is to promote development of high mineral values and recognize the significance of mineral potential in the area. The plan specifies that opportunities for mineral exploration, development and transportation are to be maintained.

2.4.1.6 Commercial and Residential

There are no commercial or residential structures near the Property.

2.4.2 Post-mining End Land Use

The lands on which the mine, mill and tailings sites are located have been previously disturbed and used for mining and mineral exploration, providing infrastructural advantages to the site. The site area is considered good for future mineral exploration as well as wildlife habitat and occasional recreational use. The areas will lend themselves very well to recovery for aesthetic purposes. It is

¹ Characterization of the Jock Creek Watershed. Triton Environmental Consultants Ltd (September 2006).

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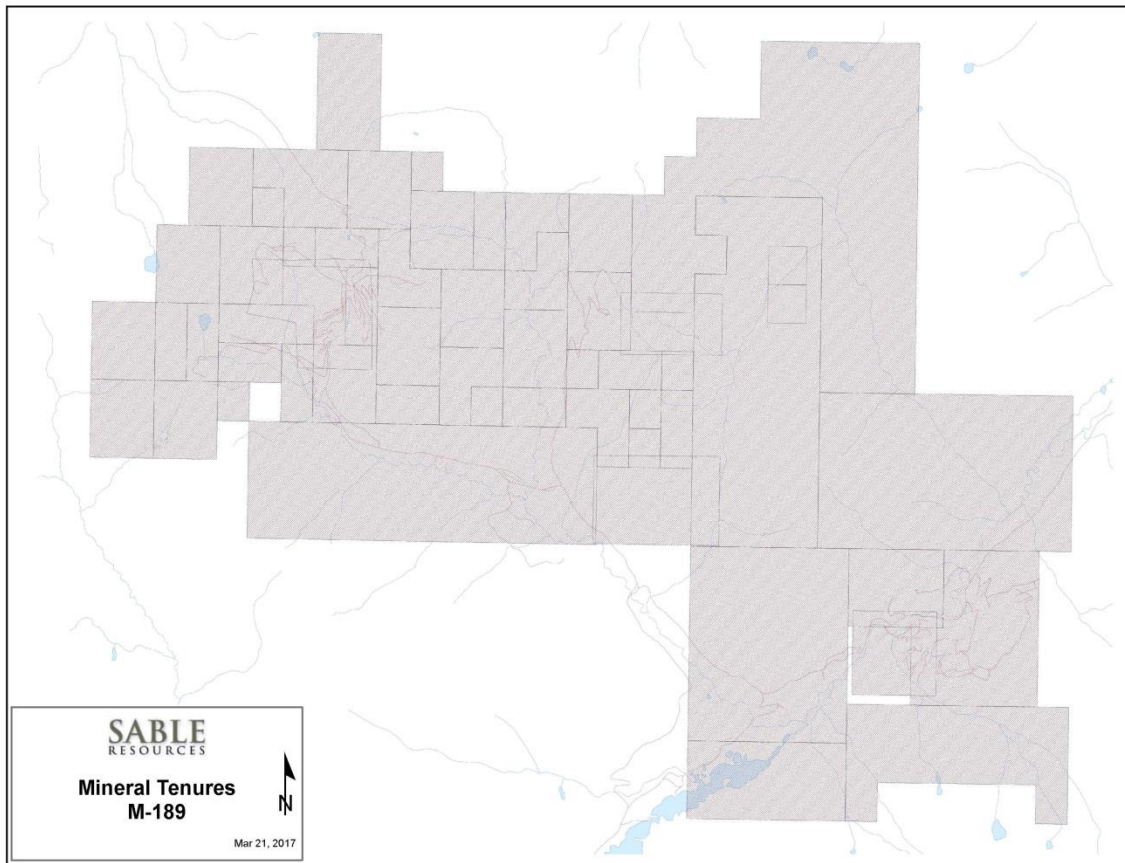
Sable's intention that after recovery, the sites will have the same appearance as the surrounding terrain. Wildlife species are noted frequently within the disturbed footprint of the mine and mill sites, and are expected to remain in the area upon closure. Wildlife sighted includes caribou, moose, bear, wolf, and a number of bird species. Upon closure, the main road access to the mine, mill and tailings will be left in place to provide access to others who have interests in the lands such as mineral exploration companies and campers.

3 Mining Program

3.1 Surface Development to Date

In 1974, Dupont of Canada Exploration (“Dupont”) optioned the Chappelle property, where significant epithermal style precious metal mineralization had been earlier discovered. In 1979, Dupont commissioned the Baker Mill, and began operations in 1981. Production on the Chappelle claims (now the “Baker Mine”) was primarily from underground methods, with limited open pit activities. A total of 68,000 tonnes was mined and processed at the Baker Mill between the beginning of operations in 1981 and the cessation of Dupont’s activities in 1983. In 1989, a joint venture between International Shasta Resources Ltd. and Sable was formed to mine a portion of the Shasta ore body located 9 km to the east. Following extraction of the identified ore in 1991, Sable gained control of the Shasta mining lease and mineral tenure which was contiguous to their other property in the area. Figure 3.1 shows the current SRL mineral tenure.

Figure 3.1: Sable Resources Claim Map



Source: Geographica Group (2017)



The ground currently controlled by Sable includes the former Chappelle claims (now the Baker Mine) and the Shasta claims (the Shasta Mine). Periodic mining and exploration of both the Shasta and Baker sites has occurred, mostly on a seasonal basis. In 2004 - 2005 a small test pit (Creek Zone pit) was excavated and processed at the Baker Mill. Following the Creek Zone test pit and a successful diamond drilling campaign in 2006, Sable made the decision to resume underground mining operations at Shasta, and began in 2007 with underground development and rehabilitation. This work was further advanced in 2008, with additional ore being developed and stockpiled. The mill operated for a 7-month period in 2008, resumed full-time operations between 2009 and 2011, and as a seasonal 4-month operation during 2012.

Mining processes affected very little surface area between 2008 and 2012. The mining occurred underground within the footprint of the existing Creek Zone pit at Shasta, and the tailings were stored in existing storage facilities. In 2010, mineral exploration consisted of eleven diamond drill holes and corresponding trails to gain access to them. Total disturbance in 2010 was 0.07 ha.

Since 2010, the only additional surface disturbance included a small increase in the upslope portion of the tailings storage facility. Table 3.1 shows the summary of areas disturbed and reclaimed to the end of 2016. Table 3.2 outlines the quantities of waste rock, tailings, low grade ore, coarse reject and other mine waste at the end of 2016. These disturbed areas have associated shapefiles that will be provided to MEM As a part of this ARR.

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Table .1: Summary of Areas Disturbed and Reclaimed to December 31, 2016

DISTURBANCE	MINING		RECLAMATION								LAND USE OBJECTIVE**
	AREA DISTURBED (ha)		AREA RECONTOURED (ha)		AREA SEEDED/ PLANTED (ha)		AREA FERTILIZED (ha)		AREA REVEGETATED* (ha)		
	2016	TOTAL ***	2016	TOTAL ***	2016	TOTAL ***	2016	TOTAL ***	2016	TOTAL ***	
WASTE DUMPS	0.0	0.49									Wildlife habitat/recreation
TAILINGS STORAGE FACILITIES	0.0	4.96									Wildlife habitat/recreation
PLANT SITE	0.0	3.85									Wildlife habitat/recreation
ROADS	0.0	22.69									Wildlife habitat/recreation
ADMINISTRATION	0.0	2.58									Wildlife habitat/recreation
PIT	0.0	2.10									Wildlife habitat/recreation
STOCKPILES	0.0	1.95									Wildlife habitat/recreation
LINEAR	0.0	0.02									Wildlife habitat/recreation
OTHER	0.0	2.52									Wildlife habitat/recreation
TOTAL	0.0	41.16									Wildlife habitat/recreation
EXEMPT (i.e. pit high walls)****	0.0	0.0									

* In order for an area to be recorded as “revegetated”, it must have supported vegetation that will lead to the designated land use objective for at least one year. Please provide monitoring data in the Annual Reclamation Report to support the areas reported here.

** Specify land use. Options include: forestry, grazing, wildlife habitat, recreation, agricultural, industrial, residential, and other.

*** Total up to December 31, 2016.

**** Please specify what the exempt areas are (with maps) in the body of the annual reclamation report including rationale as to why they are considered exempt. This number should already be included in the total disturbed ha.

Source: JDS (2017)

Table 3.2: Quantities of Waste Rock, Tailings, Low Grade Ore, Coarse Reject and Other Mine Waste as of December 31, 2016

NAME OF WASTE PILE OR POND	ACID GENERATING WASTE		POTENTIALLY ACID GENERATING WASTE		NON-ACID GENERATING WASTE	
	2016	TOTAL	2016	TOTAL	2016	TOTAL
Waste Dumps						
Shasta Minesite	0	0	0	0	0	70,000
Total	0	0	0	0	0	70,000
Tailings Ponds						
TSF #1	0	0	0	20,000	0	283,944
TSF #2	0	0	0	0	0	0
Total	0	0	0	20,000	0	283,944
Low Grade Ore/Coarse Reject/Other Mine Waste						
1	0	0	0	0	0	0
Total	0	0	0	0	0	0

Source: JDS (2017)

3.1.1 Exploration Program

Other than 2010 drilling, which occurred on the existing footprint, no new surface disturbances related to exploration have taken place. The only exploration work conducted on the Property has been geochemical sampling and mapping.

3.2 Surface Development in the Past Year

There was no surface development carried out in 2016.

3.3 Surface Development Projection over Next Five Years

The projection of surface development activities for the next five years will be completed and submitted to MEM during 2017.



4 Environmental Protection Programs

There were no environmental protection programs completed in 2016 with the exception of water quality monitoring as per the following Environmental Management Act permits:

- PE-8467 which authorizes Sable Resources Ltd. to discharge effluent from gold mining activities; and
- PE-5809 which authorizes Sable Resources Ltd. to discharge mine process effluent and tailings to the Tailings Storage Facility.

No water quality monitoring reports for either permit have been submitted to date and ownership of SRL is committed to submitting a report for each by March 31, 2017.

Appendix A provides the water quality data collected in 2012.

Appendix B provides water quality data collected in 2016.



5 Reclamation Program

5.1.1 Long-Term Stability

The long-term stability, both physical and chemical, is of primary importance in determining reclamation measures. The proposed measures within this plan are consistent with the goals of long-term stability post-closure. The site will have several structures remaining after closure. These will consist of two closed mine portals and one or two vent raises, covered tailings impoundments, a potentially covered waste dump and filled-in pit at Shasta and Baker sites. All of these structures will be appropriately decommissioned and reclaimed for long-term stability, as required under the Mines Act. The success of these measures will be assessed through post-closure monitoring and maintenance programs.

The Tailings Storage Facility was constructed with a 2:1 slope, began operation in 1980, and remains geotechnically stable. During decommissioning and reclamation of the facility, piezometers may be installed at various locations to provide information (if required for long-term stability analyses). Water quality stations and wells may also be placed at locations to monitor any seepage and drainage as required. Because the mine operated for 28 years before being placed on Care and Maintenance, it is anticipated that the net balance of the tailings impoundments is comprised of both acid consuming and potentially metal leaching materials. However, if this assumption is incorrect and if it is deemed necessary, appropriate mitigation measures will be defined and implemented should acid rock drainage or seepage be identified. In addition, post-closure site inspections will examine for signs of seepage from the facilities, slope instability, erosion or any other signs of instability on the dams and waste rock piles.

The existing waste rock pile at Shasta is relatively small, and contains an estimated 70,000 tonnes. Reclamation work on this pile began 2008 with the pile being used as a source of backfill in the Creek Zone pit, and future proposed works include recontouring and revegetation of the pile so that it can achieve the end objective of long-term stability, and be an aesthetically congruent part of the landscape.

Upon closure of the Shasta Mine, the existing portals, and any raises will be sealed. All reclaimed surfaces will be revegetated to increase surface stability and minimize ground erosion. Revegetation will consist of seeds that are well adapted to northern alpine to sub-alpine environments, with or without fertilizers depending on site test results. A small patch of seed was dispersed by hand in 2007 on drill pads that required reclaiming. The seed was from Pickseed in Abbotsford and consisted of fescue, grasses, clover and alfalfa. Verification of the reclamation success will be completed in 2017 as work begins to address the orders from the inspection report received in 2014.

5.1.2 Revegetation & Fertilizer Application

No revegetation or application of fertilizer was carried out in 2016. No weed control was conducted in 2016.

5.1.3 Landforms

No site preparation was conducted in 2016.



5.1.4 Treatment of Structures and Equipment

No treatment of structures and equipment was performed during 2016.

5.1.5 Waste Dump Reclamation

No waste dump reclamation was performed during 2016.

5.1.6 Watercourse Reclamation

No watercourse reclamation was performed during 2016.

5.1.7 Open Pit Reclamation

No open pit reclamation was performed during 2016.

5.1.8 Impoundment Reclamation

No impoundment reclamation was performed during 2016.

5.1.9 Road Reclamation

No road reclamation was performed in 2016.

5.1.10 Infrastructure Decommissioning / Reclamation

No infrastructure decommissioning/reclamation was performed in 2016.

5.1.11 Securing Openings

All surface features, underground services, and mill equipment will be removed upon closure.

5.1.12 Disposal of Chemicals and Reagents

No chemical, reagent, or special waste disposal was undertaken at the mine during 2016.

5.1.13 Reclamation Research

No work was completed in this area in 2016.

5.1.14 Five Year Reclamation Plan

SRL is committed to addressing each of the orders identified in the inspection report received in 2014. One of the orders is to complete and submit and updated reclamation and closure plan for the Property in 2017, which will address this item.

Updated detailed cost estimates for reclamation, remediation plans, reclamation research programs, long-term monitoring programs, and a detailed schedule for each activity will also be completed in 2017 as a part of addressing the inspection orders.



6 Reclamation Liability Cost Estimates

No new site disturbance or activity (other than Care and Maintenance) occurred on the mine site in 2016. The reclamation, closure and monitoring cost for the Shasta Mine – Baker Mine – Baker Mill (Permit M-189) was estimated to be [REDACTED] in 2011. This cost will be updated in 2017 when a new reclamation liability cost estimate is completed as a part of addressing the inspection orders.



7 Limitations

This report is based on and limited by circumstances and conditions referred to throughout the report and on information available at the time of the writing of this report. SRL believes that to the best of their knowledge this information is accurate. The information presented in this report was acquired, compiled and interpreted from sources within the company and from previous work completed by the previous owners. Information provided by others was believed to be accurate but cannot be guaranteed.

SRL does not accept any responsibility for the use of this report, in whole or in part, for any purpose other than intended or to any third party for use whatsoever.



Appendix A

Water Quality Data 2012



SABLE RESOURCES LTD.
ATTN: Joel Gillham
1290 - 625 Howe Street
Vancouver BC V6C 2T6

Date Received: 29-JUN-12
Report Date: 16-JUL-12 17:56 (MT)
Version: FINAL

Client Phone: 604-685-8565

Certificate of Analysis

Lab Work Order #: L1170605
Project P.O. #: NOT SUBMITTED
Job Reference:
C of C Numbers: 10-253787
Legal Site Desc:

Comments: ADDITIONAL 13-JUL-12 19:16
An unpreserved sample was not received for sample 5809-7 and therefore some analysis cannot be analyzed.

When Silver (Ag) results are above 0.1ppm, due to instrument instability, Silver results cannot be reported. Affected samples are 5809-10 and 5809-11.

Dissolved Metals is higher than Total Metals for sample 5809-6. Sample could not be re-analyzed to confirm due to low sample volume submitted.

After digestion for sample 5809-11, it was noted there was white precipitation. Analysis was conducted on the top layer of the sample. Some Metals, especially Aluminum data may be affected (bias low).

Selam Worku
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

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ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	Sample ID Description Sampled Date Sampled Time Client ID				
		L1170605-7 SOIL 5809-8				
SOIL						
Physical Tests	Moisture (%)		13.7			
	pH (1:2 soil:water) (pH)		9.04			
Cyanides	Cyanide, Weak Acid Diss (mg/kg)		228			
	Cyanide, Total (mg/kg)		289			
Metals	Antimony (Sb) (mg/kg)		14.9			
	Arsenic (As) (mg/kg)		269			
	Barium (Ba) (mg/kg)		5.25			
	Beryllium (Be) (mg/kg)		<0.20			
	Cadmium (Cd) (mg/kg)		33.2			
	Chromium (Cr) (mg/kg)		2.05			
	Cobalt (Co) (mg/kg)		127			
	Copper (Cu) (mg/kg)		1420			
	Lead (Pb) (mg/kg)		4030			
	Mercury (Hg) (mg/kg)		0.410			
	Molybdenum (Mo) (mg/kg)		42.1			
	Nickel (Ni) (mg/kg)		54.6			
	Selenium (Se) (mg/kg)		10.3			
	Silver (Ag) (mg/kg)		101			
	Thallium (Tl) (mg/kg)		0.514			
	Tin (Sn) (mg/kg)		<2.0			
	Uranium (U) (mg/kg)		0.729			
	Vanadium (V) (mg/kg)		4.80			
	Zinc (Zn) (mg/kg)		3940			

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1170605-1 WATER 5809-1	L1170605-2 WATER 5809-2	L1170605-3 WATER 5809-3	L1170605-4 WATER 5809-4	L1170605-5 WATER 5809-6
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	133	156	96.0	1990	208
	Hardness (as CaCO3) (mg/L)	60.2	72.0	44.0	1370	51.7
	pH (pH)	7.82	7.66	7.69	4.52	6.78
	Total Suspended Solids (mg/L)	<3.0	6.5	5.8	116	157
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	10.6	11.7	19.1	4.4	47.1
	Ammonia, Total (as N) (mg/L)	<0.0050 ^{PEHT}	<0.0050 ^{PEHT}	<0.0050 ^{PEHT}		
	Chloride (Cl) (mg/L)	<0.50	<0.50		<10 ^{DLM}	
	Nitrate (as N) (mg/L)	0.0205	0.0337	0.0317		
	Nitrite (as N) (mg/L)	<0.0010	<0.0010	<0.0010		
	Orthophosphate-Dissolved (as P) (mg/L)	0.0014	<0.0010	0.0017		
	Phosphorus (P)-Total (mg/L)	0.0034	0.0040	0.0051		
	Sulfate (SO4) (mg/L)	51.4	63.0	26.9	1550	
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050		0.0053		0.0068
	Cyanide, Total (mg/L)	<0.0050		0.0055		0.0179
Bacteriological Tests	E. coli (MPN/100mL)	<1	1	<1		
Total Metals	Aluminum (Al)-Total (mg/L)	0.285	0.0946	0.0386	31.5	0.0764
	Antimony (Sb)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.0010 ^{DLA}	0.00321
	Arsenic (As)-Total (mg/L)	<0.00050	<0.00050	<0.00050	0.0021	<0.00050
	Barium (Ba)-Total (mg/L)	<0.020	<0.020	<0.020	<0.020	0.043
	Beryllium (Be)-Total (mg/L)	<0.0010	<0.0010	<0.0010	0.0021	<0.0010
	Bismuth (Bi)-Total (mg/L)	<0.20	<0.20	<0.20	<0.20	<0.20
	Boron (B)-Total (mg/L)	<0.10	<0.10	<0.10	<0.10	0.17
	Cadmium (Cd)-Total (mg/L)	0.000375	0.000470	0.000131	0.0239	0.000051
	Calcium (Ca)-Total (mg/L)	24.2	24.2	15.2	442	20.0
	Chromium (Cr)-Total (mg/L)	<0.0010	<0.0010	<0.0010	0.0037	<0.0010
	Cobalt (Co)-Total (mg/L)	0.00339	0.00451	0.00077	0.350	0.00189
	Copper (Cu)-Total (mg/L)	0.0120	0.0185	0.0034	1.72	0.0170
	Iron (Fe)-Total (mg/L)	0.087	0.091	<0.030	9.16	<0.030
	Lead (Pb)-Total (mg/L)	0.00068	0.00092	<0.00050	0.0057	0.00210
	Lithium (Li)-Total (mg/L)	<0.0050	<0.0050	<0.0050	0.097	<0.0050
	Magnesium (Mg)-Total (mg/L)	4.61	3.60	1.86	70.0	0.74
	Manganese (Mn)-Total (mg/L)	0.0921	0.124	0.0250	8.61	0.0966
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010 ^{DLA}	<0.000010
	Molybdenum (Mo)-Total (mg/L)	<0.0010	<0.0010	0.0020	<0.0020 ^{DLA}	0.0520
	Nickel (Ni)-Total (mg/L)	0.0054	0.0068	0.0017	0.414	0.0030
Phosphorus (P)-Total (mg/L)	<0.30	<0.30	<0.30	<0.30	<0.30	

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID	L1170605-6 WATER 5809-7	L1170605-8 WATER 5809-9	L1170605-9 WATER 5809-10	L1170605-10 WATER 5809-11	
Grouping	Analyte				
WATER					
Physical Tests	Conductivity (uS/cm)		145	262	260
	Hardness (as CaCO3) (mg/L)	126	66.5	50.4	51.0
	pH (pH)		7.52	8.23	8.37
	Total Suspended Solids (mg/L)		5.8	131	25700
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)		14.4	63.2	59.7
	Ammonia, Total (as N) (mg/L)		<0.0050 ^{PEHT}		5.09 ^{PEHT}
	Chloride (Cl) (mg/L)		<0.50		
	Nitrate (as N) (mg/L)		0.0712		9.22
	Nitrite (as N) (mg/L)		<0.0010		0.267
	Orthophosphate-Dissolved (as P) (mg/L)		<0.0010		
	Phosphorus (P)-Total (mg/L)		0.0097		
	Sulfate (SO4) (mg/L)		47.3		
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050	<0.0050		1.71
	Cyanide, Total (mg/L)	<0.0050	<0.0050		1.83
Bacteriological Tests	E. coli (MPN/100mL)		<1		
Total Metals	Aluminum (Al)-Total (mg/L)	0.0863	0.0539	3.45	140
	Antimony (Sb)-Total (mg/L)	<0.00050	<0.00050	0.0200	<0.0025 ^{DLA}
	Arsenic (As)-Total (mg/L)	0.00085	<0.00050	0.00131	0.0524
	Barium (Ba)-Total (mg/L)	0.024	<0.020	0.124	2.61
	Beryllium (Be)-Total (mg/L)	<0.0010	<0.0010	<0.0010	0.0078
	Bismuth (Bi)-Total (mg/L)	<0.20	<0.20	<0.20	<0.20
	Boron (B)-Total (mg/L)	0.23	<0.10	0.11	0.14
	Cadmium (Cd)-Total (mg/L)	0.000081	0.000376	0.000217	0.0109
	Calcium (Ca)-Total (mg/L)	46.6	23.0	19.0	241
	Chromium (Cr)-Total (mg/L)	<0.0010	<0.0010	<0.0010	0.0965
	Cobalt (Co)-Total (mg/L)	0.00131	0.00317	0.00255	0.0347
	Copper (Cu)-Total (mg/L)	0.0059	0.0092	0.426	0.650
	Iron (Fe)-Total (mg/L)	0.117	0.045	1.35	187
	Lead (Pb)-Total (mg/L)	0.00430	<0.00050	0.196	1.48
	Lithium (Li)-Total (mg/L)	<0.0050	<0.0050	0.0109	0.146
	Magnesium (Mg)-Total (mg/L)	2.40	2.69	1.78	76.3
	Manganese (Mn)-Total (mg/L)	0.0451	0.0888	0.101	16.9
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000050 ^{DLM}	<0.00020 ^{DLM}
	Molybdenum (Mo)-Total (mg/L)	0.0042	0.0029	0.0452	0.0660
	Nickel (Ni)-Total (mg/L)	<0.0010	0.0050	0.0130	0.0742
	Phosphorus (P)-Total (mg/L)	<0.30	<0.30	<0.30	3.83

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1170605-1 WATER 5809-1	L1170605-2 WATER 5809-2	L1170605-3 WATER 5809-3	L1170605-4 WATER 5809-4	L1170605-5 WATER 5809-6
Grouping	Analyte					
WATER						
Total Metals	Potassium (K)-Total (mg/L)	<2.0	<2.0	<2.0	<2.0	13.8
	Selenium (Se)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	0.0016
	Silicon (Si)-Total (mg/L)	4.06	4.24	3.38	14.6	1.45
	Silver (Ag)-Total (mg/L)	0.000083	0.000273	0.000062	0.000548	0.000726
	Sodium (Na)-Total (mg/L)	<2.0	<2.0	<2.0	5.9	13.1
	Strontium (Sr)-Total (mg/L)	0.0689	0.0717	0.0454	0.948	0.141
	Thallium (Tl)-Total (mg/L)	<0.00020	<0.00020	<0.00020	<0.00040 ^{DLA}	<0.00020
	Tin (Sn)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.0010 ^{DLA}	<0.00050
	Titanium (Ti)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
	Uranium (U)-Total (mg/L)	<0.00020	<0.00020	<0.00020	0.00127	0.00046
	Vanadium (V)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	<0.0010
	Zinc (Zn)-Total (mg/L)	0.0228	0.0364	0.0089	1.93	0.0070
Dissolved Metals	Dissolved Metals Filtration Location	LAB	LAB	LAB	LAB	LAB
	Aluminum (Al)-Dissolved (mg/L)	0.0504	<0.020 ^{DLB}	0.0365	25.3	0.0605
	Antimony (Sb)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.0010 ^{DLA}	0.00314
	Arsenic (As)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	0.0016	<0.00050
	Barium (Ba)-Dissolved (mg/L)	<0.020	<0.020	<0.020	<0.020	0.043
	Beryllium (Be)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	<0.0010
	Bismuth (Bi)-Dissolved (mg/L)	<0.20	<0.20	<0.20	<0.20	<0.20
	Boron (B)-Dissolved (mg/L)	<0.10	<0.10	<0.10	<0.10	0.16
	Cadmium (Cd)-Dissolved (mg/L)	0.000167	0.000438	0.000126	0.0235	0.000046
	Calcium (Ca)-Dissolved (mg/L)	18.6	23.2	14.7	436	19.6
	Chromium (Cr)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	<0.0010
	Cobalt (Co)-Dissolved (mg/L)	0.00090	0.00406	0.00056	0.343	0.00185
	Copper (Cu)-Dissolved (mg/L)	0.0028	0.0068	0.0030	1.67	0.0078
	Iron (Fe)-Dissolved (mg/L)	<0.030	<0.030	<0.030	2.43	<0.030
	Lead (Pb)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	0.0028	0.00094
	Lithium (Li)-Dissolved (mg/L)	<0.0050	<0.0050	<0.0050	0.091	<0.0050
	Magnesium (Mg)-Dissolved (mg/L)	3.34	3.45	1.78	68.4	0.68
	Manganese (Mn)-Dissolved (mg/L)	0.0284	0.113	0.0202	8.64	0.102
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010 ^{DLA}	<0.000010
	Molybdenum (Mo)-Dissolved (mg/L)	<0.0010	<0.0010	0.0019	<0.0020 ^{DLA}	0.0500
	Nickel (Ni)-Dissolved (mg/L)	0.0024	0.0063	0.0015	0.406	0.0022
	Phosphorus (P)-Dissolved (mg/L)	<0.30	<0.30	<0.30	<0.30	<0.30
	Potassium (K)-Dissolved (mg/L)	<2.0	<2.0	<2.0	<2.0	13.2
	Selenium (Se)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	0.0016
	Silicon (Si)-Dissolved (mg/L)	3.79	3.95	3.25	12.4	1.41

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID	L1170605-6 WATER 5809-7	L1170605-8 WATER 5809-9	L1170605-9 WATER 5809-10	L1170605-10 WATER 5809-11		
Grouping	Analyte					
WATER						
Total Metals	Potassium (K)-Total (mg/L)	<2.0	<2.0	32.4	73.3	
	Selenium (Se)-Total (mg/L)	<0.0010	<0.0010	0.0069	<0.0050 ^{DLA}	
	Silicon (Si)-Total (mg/L)	0.369	3.49	12.8	187	
	Silver (Ag)-Total (mg/L)	0.00891	0.000216			
	Sodium (Na)-Total (mg/L)	10.6	<2.0	13.6	11.3	
	Strontium (Sr)-Total (mg/L)	0.120	0.0627	0.176	0.568	
	Thallium (Tl)-Total (mg/L)	<0.00020	<0.00020	<0.00020	0.0022	
	Tin (Sn)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.0025 ^{DLA}	
	Titanium (Ti)-Total (mg/L)	<0.010	<0.010	0.038	0.261	
	Uranium (U)-Total (mg/L)	0.00151	<0.00020	0.00054	0.0056	
	Vanadium (V)-Total (mg/L)	<0.0010	<0.0010	0.0046	0.163	
	Zinc (Zn)-Total (mg/L)	0.0129	0.0249	0.267	1.82	
Dissolved Metals	Dissolved Metals Filtration Location		LAB	LAB	LAB	
	Aluminum (Al)-Dissolved (mg/L)		0.0432	0.0525	0.201	
	Antimony (Sb)-Dissolved (mg/L)		<0.00050	0.0199	0.0185	
	Arsenic (As)-Dissolved (mg/L)		<0.00050	0.00101	0.00112	
	Barium (Ba)-Dissolved (mg/L)		<0.020	0.061	0.074	
	Beryllium (Be)-Dissolved (mg/L)		<0.0010	<0.0010	<0.0010	
	Bismuth (Bi)-Dissolved (mg/L)		<0.20	<0.20	<0.20	
	Boron (B)-Dissolved (mg/L)		<0.10	0.10	<0.10	
	Cadmium (Cd)-Dissolved (mg/L)		0.000370	0.000065	0.000026	
	Calcium (Ca)-Dissolved (mg/L)		22.4	18.3	18.6	
	Chromium (Cr)-Dissolved (mg/L)		<0.0010	<0.0010	<0.0010	
	Cobalt (Co)-Dissolved (mg/L)		0.00306	0.00221	0.00351	
	Copper (Cu)-Dissolved (mg/L)		0.0056	0.405	0.569	
	Iron (Fe)-Dissolved (mg/L)		<0.030	<0.030	0.068	
	Lead (Pb)-Dissolved (mg/L)		<0.00050	0.0861	0.00152	
	Lithium (Li)-Dissolved (mg/L)		<0.0050	0.0102	0.0087	
	Magnesium (Mg)-Dissolved (mg/L)		2.59	1.16	1.13	
	Manganese (Mn)-Dissolved (mg/L)		0.0902	0.0302	0.0386	
	Mercury (Hg)-Dissolved (mg/L)		<0.000010	0.00099 ^{DLM}	<0.000010	
	Molybdenum (Mo)-Dissolved (mg/L)		0.0028	0.0440	0.0513	
	Nickel (Ni)-Dissolved (mg/L)		0.0052	0.0120	0.0429	
	Phosphorus (P)-Dissolved (mg/L)		<0.30	<0.30	<0.30	
	Potassium (K)-Dissolved (mg/L)		<2.0	29.3	30.1	
	Selenium (Se)-Dissolved (mg/L)		<0.0010	0.0062	0.0042	
	Silicon (Si)-Dissolved (mg/L)		3.27	2.87	3.02	

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1170605-1 WATER 5809-1	L1170605-2 WATER 5809-2	L1170605-3 WATER 5809-3	L1170605-4 WATER 5809-4	L1170605-5 WATER 5809-6
Grouping	Analyte					
WATER						
Dissolved Metals	Silver (Ag)-Dissolved (mg/L)	<0.000020	<0.000020	<0.000020	0.000188	0.000963
	Sodium (Na)-Dissolved (mg/L)	<2.0	<2.0	<2.0	5.6	12.6
	Strontium (Sr)-Dissolved (mg/L)	0.0559	0.0678	0.0435	0.924	0.138
	Thallium (Tl)-Dissolved (mg/L)	<0.00020	<0.00020	<0.00020	<0.00040 ^{DLA}	<0.00020
	Tin (Sn)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.0010 ^{DLA}	<0.00050
	Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
	Uranium (U)-Dissolved (mg/L)	<0.00020	<0.00020	<0.00020	0.00124	0.00042
	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	<0.0010
	Zinc (Zn)-Dissolved (mg/L)	0.0147	0.0270	<0.0050	1.91	<0.0050
Aggregate Organics	BOD (mg/L)	<5.0	<5.0			

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID	L1170605-6 WATER 5809-7	L1170605-8 WATER 5809-9	L1170605-9 WATER 5809-10	L1170605-10 WATER 5809-11	
Grouping	Analyte				
WATER					
Dissolved Metals	Silver (Ag)-Dissolved (mg/L)		0.000033		
	Sodium (Na)-Dissolved (mg/L)		<2.0	13.3	12.4
	Strontium (Sr)-Dissolved (mg/L)		0.0578	0.172	0.200
	Thallium (Tl)-Dissolved (mg/L)		<0.00020	<0.00020	<0.00020
	Tin (Sn)-Dissolved (mg/L)		<0.00050	<0.00050	<0.00050
	Titanium (Ti)-Dissolved (mg/L)		<0.010	<0.010	<0.010
	Uranium (U)-Dissolved (mg/L)		<0.00020	0.00054	0.00100
	Vanadium (V)-Dissolved (mg/L)		<0.0010	<0.0010	<0.0010
	Zinc (Zn)-Dissolved (mg/L)		0.0170	0.149	<0.0050
Aggregate Organics	BOD (mg/L)				

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Duplicate	Bismuth (Bi)-Dissolved	DLA	L1170605-1, -10, -2, -3, -4, -5, -8, -9
Duplicate	Zinc (Zn)-Dissolved	DLA	L1170605-1, -10, -2, -3, -4, -5, -8, -9
Duplicate	Nitrite (as N)	DLM	L1170605-1, -10, -2, -3, -8
Duplicate	Nitrate (as N)	DLM	L1170605-1, -10, -2, -3, -8
Duplicate	Nitrite (as N)	DLM	L1170605-1, -10, -2, -3, -8
Duplicate	Nitrate (as N)	DLM	L1170605-1, -10, -2, -3, -8
Duplicate	Uranium (U)	DUP-H	L1170605-7
Matrix Spike	Sulfate (SO4)	MS-B	L1170605-1, -2, -3, -8
Matrix Spike	Chloride (Cl)	MS-B	L1170605-1, -2, -3, -8
Matrix Spike	Sulfate (SO4)	MS-B	L1170605-1, -2, -3, -8
Matrix Spike	Sulfate (SO4)	MS-B	L1170605-4
Matrix Spike	Phosphorus (P)-Total	MS-B	L1170605-1, -2, -3, -8
Matrix Spike	Aluminum (Al)-Total	MS-B	L1170605-1, -10, -2, -3, -4, -5, -6, -8, -9
Matrix Spike	Manganese (Mn)-Total	MS-B	L1170605-1, -10, -2, -3, -4, -5, -6, -8, -9

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLA	Detection Limit Adjusted For required dilution
DLB	Detection limit was raised due to detection of analyte at comparable level in Method Blank.
DLM	Detection Limit Adjusted For Sample Matrix Effects
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
PEHT	Parameter Exceeded Recommended Holding Time Prior to Analysis

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-COL-VA	Water	Alkalinity by Colourimetric (Automated)	EPA 310.2
		This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.	
ALK-PCT-VA	Water	Alkalinity by Auto. Titration	APHA 2320 "Alkalinity"
		This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.	
ALK-PCT-VA	Water	Alkalinity by Auto. Titration	APHA 2320 Alkalinity
		This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.	
ANIONS-CL-IC-VA	Water	Chloride by Ion Chromatography	APHA 4110 B.
		This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".	
ANIONS-NO2-IC-VA	Water	Nitrite in Water by Ion Chromatography	EPA 300.0
		This analysis is carried out using procedures adapted from EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Nitrite is detected by UV absorbance.	
ANIONS-NO3-IC-VA	Water	Nitrate in Water by Ion Chromatography	EPA 300.0
		This analysis is carried out using procedures adapted from EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Nitrate is detected by UV absorbance.	
ANIONS-SO4-IC-VA	Water	Sulfate by Ion Chromatography	APHA 4110 B.
		This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".	
BOD5-VA	Water	Biochemical Oxygen Demand- 5 day	APHA 5210 B- "BIOCHEMICAL OXYGEN DEMAND"
		This analysis is carried out using procedures adapted from APHA Method 5210 B - "Biochemical Oxygen Demand (BOD)". All forms of biochemical oxygen demand (BOD) are determined by diluting and incubating a sample for a specified time period, and measuring the oxygen depletion using a dissolved oxygen meter. Dissolved BOD (SOLUBLE) is determined by filtering the sample through a glass fibre filter prior to dilution. Carbonaceous BOD (CBOD) is determined by adding a nitrification inhibitor to the diluted sample prior to incubation.	
BOD5-VA	Water	Biochemical Oxygen Demand- 5 day	APHA 5210 B- BIOCHEMICAL OXYGEN DEMAND
		This analysis is carried out using procedures adapted from APHA Method 5210 B - "Biochemical Oxygen Demand (BOD)". All forms of biochemical	

Reference Information

oxygen demand (BOD) are determined by diluting and incubating a sample for a specified time period, and measuring the oxygen depletion using a dissolved oxygen meter. Dissolved BOD (SOLUBLE) is determined by filtering the sample through a glass fibre filter prior to dilution. Carbonaceous BOD (CBOD) is determined by adding a nitrification inhibitor to the diluted sample prior to incubation.

CN-T-CFA-VA Water Total Cyanide in water by CFA ISO 14403:2002

This analysis is carried out using procedures adapted from ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourimetric analysis. Method Limitation: This method is susceptible to interference from thiocyanate (SCN). If SCN is present in the sample, there could be a positive interference with this method, but it would be less than 1% and could be as low as zero.

CN-T-NAOH-CFA-VA Soil Total Cyanide in soil by CFA ONMOE CN-E3015/ISO 14403:2002

This analysis is carried out using procedures adapted from the Ontario Ministry of Environment CN-E3015 and ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by rotary extraction of the soil with 0.04M Sodium Hydroxide, followed by in-line UV digestion along with sample distillation and final determination by colourimetric analysis.

CN-WAD-CFA-VA Water Weak Acid Diss. Cyanide in water by CFA APHA 4500-CN CYANIDE

This analysis is carried out using procedures adapted from APHA Method 4500-CN I. "Weak Acid Dissociable Cyanide". Weak Acid Dissociable (WAD) cyanide is determined by in-line sample distillation with final determination by colourimetric analysis.

CN-WAD-NAOH-CFA-VA Soil Weak Acid Diss. Cyanide in soil by CFA ONMOE CN-E3015/APHA 4500-CN CYANIDE

This analysis is carried out using procedures adapted from the Ontario Ministry of Environment CN-E3015 and APHA Method 4500-CN I. "Weak Acid Dissociable Cyanide". Weak Acid Dissociable (WAD) cyanide is determined by rotary extraction of the soil with 0.04M Sodium Hydroxide, followed by in-line sample distillation with final determination by colourimetric analysis.

EC-PCT-VA Water Conductivity (Automated) APHA 2510 Auto. Conduc.

This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.

ECOLI-COLI-ENV-VA Water E.coli by Colilert APHA METHOD 9223

This analysis is carried out using procedures adapted from APHA Method 9223 "Enzyme Substrate Coliform Test". E. coli and Total Coliform are determined simultaneously. The sample is mixed with a mixture hydrolyzable substrates and then sealed in a multi-well packet. The packet is incubated for 18 or 24 hours and then the number of wells exhibiting a positive response are counted. The final result is obtained by comparing the positive responses to a probability table.

HARDNESS-CALC-VA Water Hardness APHA 2340B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO₃ equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-200.2-CVAF-VA Soil Mercury in Soil by CVAFS EPA 200.2/245.7

This analysis is carried out using procedures from CSR Analytical Method: "Strong Acid Leachable Metals (SALM) in Soil", BC Ministry of Environment, 26 June 2009, and procedures adapted from EPA Method 200.2. The sample is manually homogenized, dried at 60 degrees Celsius, sieved through a 2 mm (10 mesh) sieve (this sieve step is omitted for international soil samples), and a representative subsample of the dry material is weighed. The sample is then digested at 95 degrees Celsius for 2 hours by block digester using concentrated nitric and hydrochloric acids. Instrumental analysis is by atomic fluorescence spectrophotometry (EPA Method 245.7).

Method Limitation: This method is not a total digestion technique. It is a very strong acid digestion that is intended to dissolve those metals that may be environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.

HG-DIS-LOW-CVAFS-VA Water Dissolved Mercury in Water by CVAFS(Low) EPA SW-846 3005A & EPA 245.7

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by filtration (EPA Method 3005A) and involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).

HG-TOT-LOW-CVAFS-VA Water Total Mercury in Water by CVAFS(Low) EPA 245.7

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).

MET-200.2-CCMS-VA Soil Metals in Soil by CRC ICPMS EPA 200.2/6020A

This analysis is carried out using procedures from CSR Analytical Method: "Strong Acid Leachable Metals (SALM) in Soil", BC Ministry of Environment, 26 June 2009, and procedures adapted from EPA Method 200.2. The sample is manually homogenized, dried at 60 degrees Celsius, sieved through a 2 mm (10 mesh) sieve (this sieve step is omitted for international soil samples), and a representative subsample of the dry material is weighed. The sample is then digested at 95 degrees Celsius for 2 hours by block digester using concentrated nitric and hydrochloric acids. Instrumental analysis of the digested extract is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).

Method Limitation: This method is not a total digestion technique. It is a very strong acid digestion that is intended to dissolve those metals that may

Reference Information

be environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.

MET-DIS-CCME-MS-VA	Water	Diss. Metals in Water by ICPMS (CCME)	EPA SW-846 3005A/6020A
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).			
MET-DIS-ICP-VA	Water	Dissolved Metals in Water by ICPOES	EPA SW-846 3005A/6010B
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves filtration (EPA Method 3005A) and analysis by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).			
MET-TOT-CCME-MS-VA	Water	Total Metals in Water by ICPMS (CCME)	EPA SW-846 3005A/6020A
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).			
MET-TOT-ICP-VA	Water	Total Metals in Water by ICPOES	EPA SW-846 3005A/6010B
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).			
MOISTURE-VA	Soil	Moisture content	ASTM D2974-00 Method A
This analysis is carried out gravimetrically by drying the sample at 105 C for a minimum of six hours.			
NH3-F-VA	Water	Ammonia in Water by Fluorescence	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC
This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.			
P-T-COL-VA	Water	Total P in Water by Colour	APHA 4500-P Phosphorous
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.			
PH-1:2-VA	Soil	pH in Soil (1:2 Soil:Water Extraction)	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL
This analysis is carried out in accordance with procedures described in the pH, Electrometric in Soil and Sediment method - Section B Physical/Inorganic and Misc. Constituents, BC Environmental Laboratory Manual 2007. The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water. The pH of the solution is then measured using a standard pH probe.			
PH-PCT-VA	Water	pH by Meter (Automated)	APHA 4500-H "pH Value"
This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode			
It is recommended that this analysis be conducted in the field.			
PH-PCT-VA	Water	pH by Meter (Automated)	APHA 4500-H pH Value
This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode			
It is recommended that this analysis be conducted in the field.			
PO4-DO-COL-VA	Water	Diss. Orthophosphate in Water by Colour	APHA 4500-P Phosphorous
This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter.			
TSS-VA	Water	Total Suspended Solids by Gravimetric	APHA 2540 D - GRAVIMETRIC
This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, TSS is determined by drying the filter at 104 degrees celsius.			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
----------------------------	---------------------

Reference Information

VA ALS ENVIRONMENTAL - VANCOUVER, BC, CANADA

Chain of Custody Numbers:

10-253787

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

mg/kg - milligrams per kilogram based on dry weight of sample.

mg/kg wwt - milligrams per kilogram based on wet weight of sample.

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.

mg/L - milligrams per litre.

< - Less than.

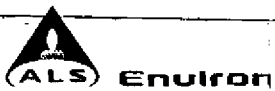
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



Report To		Report Format / Distribution		Service Request: (Rush subject to availability - Contact ALS to confirm TAT)	
Company: <u>Sable Resources Ltd</u>		Standard: <u>Other (specify):</u>		<input checked="" type="checkbox"/> Regular (Standard Turnaround Times - Business Days)	
Contact:		Select: PDF <input checked="" type="checkbox"/> Excel <input checked="" type="checkbox"/> Digital <input type="checkbox"/> Fax		Priority (2-4 Business Days)-50% surcharge - Contact ALS to confirm TAT	
Address: <u>1290 - 625 Howe St</u>		Email 1: <u>Joel.gillham@gmail.com</u>		Emergency (1-2 Business Days)-100% Surcharge - Contact ALS to confirm TAT	
<u>Vancouver BC</u>		Email 2: <u>SableLtd@telus.net</u>		Same Day or Weekend Emergency - Contact ALS to confirm TAT	
Phone: <u>604 685 8565</u> Fax:					

Invoice To		Client / Project Information		Analysis Request									
Same as Report? (circle) <u>Yes</u> or No (if No, provide details)		Job #:		(Indicate Filtered or Preserved, F/P)									
Copy of Invoice with Report? (circle) <u>Yes</u> or No		PO / A/E:											
Company:		LSD:											
Contact:		Quote #:											
Address:													
Phone: Fax:													

Lab Work Order # (lab use only)		ALS Contact:		Sampler:													
<u>L1170605</u>																	
Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Cyanide (total & weak Acid Dissoluble)	Ammonia	Nitrate + Nitrite	Phosphorus (total for tho)	Chloride	Sulphate	E-Coli	Bacteriology BOD ₅ 20°C	Al, Sp. Conduct.	Total Alk, Hardness, Salts	Total Metals ICPMS	Dissolved Metals ICPMS	Number of Containers
	5809-1				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4
	5809-2				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3
	5809-3				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4
	5809-4				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2
	5809-6				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3
	5809-7				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3
	5809-8				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1
	5809-9				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4
	5809-10				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2
	5809-11				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3

Short Holding Time
Rush Processing

Special Instructions / Regulation with water or land use (CCME- Freshwater Aquatic Life/BC CSR-Commercial/AB Tier 1-Natural/ETC) / Hazardous Details

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.
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SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)			
Released by:	Date:	Time:	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations:
<u>J. Gillham</u>			<u>Arid</u>	<u>June 29/12</u>	<u>9:50</u>	<u>7.8 °C</u>				Yes / No ? If Yes add SIF



SABLE RESOURCES LTD.
ATTN: Dan Meldrum
1290 - 625 Howe Street
Vancouver BC V6C 2T6

Date Received: 29-JUN-12
Report Date: 11-JUL-12 12:23 (MT)
Version: FINAL

Client Phone: 604-685-8565

Certificate of Analysis

Lab Work Order #: L1170606
Project P.O. #: NOT SUBMITTED
Job Reference:
C of C Numbers: 10-253786
Legal Site Desc:

Selam Worku
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID Description Sampled Date Sampled Time Client ID	L1170606-1 WATER 8467-1	L1170606-2 WATER 8467-2	L1170606-3 WATER 8467-3
Grouping	Analyte				
WATER					
Physical Tests	Conductivity (uS/cm)		82.3	361	85.0
	Hardness (as CaCO3) (mg/L)		39.5	192	40.3
	pH (pH)		6.56	6.96	7.16
	Total Suspended Solids (mg/L)		59.2	30.5	5.8
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)		20.4	107	22.6
	Ammonia, Total (as N) (mg/L)		<0.0050	1.45	0.0070
	Chloride (Cl) (mg/L)		<0.50	2.14	<0.50
	Nitrate (as N) (mg/L)		0.0226	8.01	0.0738
	Nitrite (as N) (mg/L)		<0.0010	0.0511	<0.0010
	Sulfate (SO4) (mg/L)		20.2	58.6	19.5
Total Metals	Aluminum (Al)-Total (mg/L)		0.0348	0.0296	0.0349
	Antimony (Sb)-Total (mg/L)		<0.00050	0.00211	<0.00050
	Arsenic (As)-Total (mg/L)		<0.00050	<0.00050	<0.00050
	Barium (Ba)-Total (mg/L)		<0.020	0.053	<0.020
	Beryllium (Be)-Total (mg/L)		<0.0010	<0.0010	<0.0010
	Bismuth (Bi)-Total (mg/L)		<0.20	<0.20	<0.20
	Boron (B)-Total (mg/L)		<0.10	<0.10	<0.10
	Cadmium (Cd)-Total (mg/L)		0.000082	0.000065	0.000080
	Calcium (Ca)-Total (mg/L)		13.8	73.6	14.5
	Chromium (Cr)-Total (mg/L)		<0.0010	0.0012	<0.0010
	Cobalt (Co)-Total (mg/L)		0.00037	<0.00030	0.00033
	Copper (Cu)-Total (mg/L)		0.0027	0.0015	0.0024
	Iron (Fe)-Total (mg/L)		<0.030	<0.030	<0.030
	Lead (Pb)-Total (mg/L)		<0.00050	<0.00050	<0.00050
	Lithium (Li)-Total (mg/L)		<0.0050	0.0247	<0.0050
	Magnesium (Mg)-Total (mg/L)		1.56	2.17	1.51
	Manganese (Mn)-Total (mg/L)		0.0138	0.0923	0.0127
	Mercury (Hg)-Total (mg/L)		<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Total (mg/L)		0.0018	0.0212	0.0018
	Nickel (Ni)-Total (mg/L)		0.0010	<0.0010	<0.0010
	Phosphorus (P)-Total (mg/L)		<0.30	<0.30	<0.30
	Potassium (K)-Total (mg/L)		<2.0	2.5	<2.0
	Selenium (Se)-Total (mg/L)		<0.0010	<0.0010	<0.0010
	Silicon (Si)-Total (mg/L)		3.38	3.58	3.31
	Silver (Ag)-Total (mg/L)		0.000056	<0.000020	0.000025
	Sodium (Na)-Total (mg/L)		<2.0	7.9	<2.0
Strontium (Sr)-Total (mg/L)		0.0418	0.761	0.0464	

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1170606-1 WATER 8467-1	L1170606-2 WATER 8467-2	L1170606-3 WATER 8467-3		
Grouping	Analyte					
WATER						
Total Metals	Thallium (Tl)-Total (mg/L)	<0.00020	<0.00020	<0.00020		
	Tin (Sn)-Total (mg/L)	0.00058	<0.00050	<0.00050		
	Titanium (Ti)-Total (mg/L)	<0.010	<0.010	<0.010		
	Uranium (U)-Total (mg/L)	<0.00020	0.00524	<0.00020		
	Vanadium (V)-Total (mg/L)	<0.0010	<0.0010	<0.0010		
	Zinc (Zn)-Total (mg/L)	0.0062	<0.0050	0.0051		
Dissolved Metals	Dissolved Metals Filtration Location	LAB	LAB	LAB		
	Aluminum (Al)-Dissolved (mg/L)	0.0380	0.0207	0.0396		
	Antimony (Sb)-Dissolved (mg/L)	<0.00050	0.00204	<0.00050		
	Arsenic (As)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050		
	Barium (Ba)-Dissolved (mg/L)	<0.020	0.052	<0.020		
	Beryllium (Be)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010		
	Bismuth (Bi)-Dissolved (mg/L)	<0.20	<0.20	<0.20		
	Boron (B)-Dissolved (mg/L)	<0.10	<0.10	<0.10		
	Cadmium (Cd)-Dissolved (mg/L)	0.000071	0.000047	0.000066		
	Calcium (Ca)-Dissolved (mg/L)	13.4	73.2	13.8		
	Chromium (Cr)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010		
	Cobalt (Co)-Dissolved (mg/L)	<0.00030	<0.00030	<0.00030		
	Copper (Cu)-Dissolved (mg/L)	0.0019	0.0011	0.0019		
	Iron (Fe)-Dissolved (mg/L)	<0.030	<0.030	<0.030		
	Lead (Pb)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050		
	Lithium (Li)-Dissolved (mg/L)	<0.0050	0.0250	<0.0050		
	Magnesium (Mg)-Dissolved (mg/L)	1.49	2.13	1.43		
	Manganese (Mn)-Dissolved (mg/L)	0.00925	0.0899	0.00944		
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010		
	Molybdenum (Mo)-Dissolved (mg/L)	0.0019	0.0208	0.0019		
	Nickel (Ni)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010		
	Phosphorus (P)-Dissolved (mg/L)	<0.30	<0.30	<0.30		
	Potassium (K)-Dissolved (mg/L)	<2.0	2.4	<2.0		
	Selenium (Se)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010		
	Silicon (Si)-Dissolved (mg/L)	3.26	3.52	3.12		
	Silver (Ag)-Dissolved (mg/L)	<0.000020	0.000028	<0.000020		
	Sodium (Na)-Dissolved (mg/L)	<2.0	7.7	<2.0		
	Strontium (Sr)-Dissolved (mg/L)	0.0402	0.744	0.0434		
	Thallium (Tl)-Dissolved (mg/L)	<0.00020	<0.00020	<0.00020		
	Tin (Sn)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050		
	Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.010	<0.010		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID	L1170606-1 WATER 8467-1	L1170606-2 WATER 8467-2	L1170606-3 WATER 8467-3		
Grouping	Analyte				
WATER					
Dissolved Metals	Uranium (U)-Dissolved (mg/L)	<0.00020	0.00544	<0.00020	
	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	
	Zinc (Zn)-Dissolved (mg/L)	<0.0050	<0.0050	<0.0050	

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Duplicate	Nitrite (as N)	DLM	L1170606-1, -2, -3
Duplicate	Nitrate (as N)	DLM	L1170606-1, -2, -3
Duplicate	Nitrite (as N)	DLM	L1170606-1, -2, -3
Duplicate	Nitrate (as N)	DLM	L1170606-1, -2, -3
Matrix Spike	Sulfate (SO4)	MS-B	L1170606-1, -2, -3
Matrix Spike	Chloride (Cl)	MS-B	L1170606-1, -2, -3
Matrix Spike	Sulfate (SO4)	MS-B	L1170606-1, -2, -3
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1170606-1, -2, -3
Matrix Spike	Manganese (Mn)-Total	MS-B	L1170606-1, -2, -3

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLM	Detection Limit Adjusted For Sample Matrix Effects
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-COL-VA	Water	Alkalinity by Colourimetric (Automated)	EPA 310.2
This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.			
ANIONS-CL-IC-VA	Water	Chloride by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
ANIONS-NO2-IC-VA	Water	Nitrite in Water by Ion Chromatography	EPA 300.0
This analysis is carried out using procedures adapted from EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Nitrite is detected by UV absorbance.			
ANIONS-NO3-IC-VA	Water	Nitrate in Water by Ion Chromatography	EPA 300.0
This analysis is carried out using procedures adapted from EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Nitrate is detected by UV absorbance.			
ANIONS-SO4-IC-VA	Water	Sulfate by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
EC-PCT-VA	Water	Conductivity (Automated)	APHA 2510 Auto. Conduc.
This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.			
HARDNESS-CALC-VA	Water	Hardness	APHA 2340B
Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.			
HG-DIS-LOW-CVAFS-VA	Water	Dissolved Mercury in Water by CVAFS(Low)	EPA SW-846 3005A & EPA 245.7
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by filtration (EPA Method 3005A) and involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).			
HG-TOT-LOW-CVAFS-VA	Water	Total Mercury in Water by CVAFS(Low)	EPA 245.7
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).			
MET-DIS-CCME-MS-VA	Water	Diss. Metals in Water by ICPMS (CCME)	EPA SW-846 3005A/6020A
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).			
MET-DIS-ICP-VA	Water	Dissolved Metals in Water by ICPOES	EPA SW-846 3005A/6010B
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the			

Reference Information

American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves filtration (EPA Method 3005A) and analysis by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

MET-TOT-CCME-MS-VA Water Total Metals in Water by ICPMS (CCME) EPA SW-846 3005A/6020A

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

MET-TOT-ICP-VA Water Total Metals in Water by ICPOES EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

NH3-F-VA Water Ammonia in Water by Fluorescence J. ENVIRON. MONIT., 2005, 7, 37-42, RSC

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Weston et al.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H "pH Value"

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H pH Value

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

TSS-VA Water Total Suspended Solids by Gravimetric APHA 2540 D - GRAVIMETRIC

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, TSS is determined by drying the filter at 104 degrees celsius.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
VA	ALS ENVIRONMENTAL - VANCOUVER, BC, CANADA

Chain of Custody Numbers:

10-253786

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

mg/kg - milligrams per kilogram based on dry weight of sample.

mg/kg wwt - milligrams per kilogram based on wet weight of sample.

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.

mg/L - milligrams per litre.

< - Less than.

D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



Analytical Request Form
 ree: 1 800 668 9878
 alsglobal.com

Report To	Report Format / Distribution	Service Request: (Rush subject to availability - Contact ALS to confirm TAT)
Company: <u>Sable Resources Ltd</u>	Standard: <u>Other (specify):</u>	<input checked="" type="checkbox"/> Regular (Standard Turnaround Times - Business Days)
Contact:	Select: PDF <input checked="" type="checkbox"/> Excel <input checked="" type="checkbox"/> Digital Fax	Priority (2-4 Business Days)-50% surcharge - Contact ALS to confirm TAT
Address: <u>1290-625 Howe St</u>	Email 1: <u>Joel.Gillham@gmail.com</u>	Emergency (1-2 Business Days)-100% Surcharge - Contact ALS to confirm TAT
<u>Vancouver BC</u>	Email 2: <u>SableLtd@telus.net</u>	Same Day or Weekend Emergency - Contact ALS to confirm TAT
Phone: <u>604 685 8565</u> Fax:		

Invoice To Same as Report? (circle) <input checked="" type="checkbox"/> Yes or No (if No, provide details)	Client / Project Information	Analysis Request												
Copy of Invoice with Report? (circle) <input checked="" type="checkbox"/> Yes or No	Job #:	(Indicate Filtered or Preserved, F/P)												
Company:	PO / AFE:	Ammonia (Total + Uniodized)	Nitrate	Nitrite	Chloride	Sulphate	pH	Sp. Conductance	Total Alkalinity	Total Hardness	Total Susp. Solids	Total Metals ICPMS	Dissolved Metals ICPMS	Number of Containers
Contact:	LSD:													
Address:	Quote #:													
Phone: Fax:	ALS Contact:													
Lab Work Order # (lab use only)	<u>L1170606</u>													

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Ammonia (Total + Uniodized)	Nitrate	Nitrite	Chloride	Sulphate	pH	Sp. Conductance	Total Alkalinity	Total Hardness	Total Susp. Solids	Total Metals ICPMS	Dissolved Metals ICPMS	Number of Containers
	<u>8467 - 1</u>				X											X	
	<u>8467 - 2</u>				X											X	
	<u>8467 - 3</u>				X											X	
	Short Holding Time																
	<i>Rush Processing</i>																

Special Instructions / Regulation with water or land use (CCME - Freshwater Aquatic Life/BC CSR-Commercial/AB Tier 1-Natural/ETC) / Hazardous Details

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.

By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)			
Released by:	Date:	Time:	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations:
<u>J Gillham</u>			<u>Ariel</u>	<u>June 29/12</u>	<u>9:50</u>	<u>7.8 °C</u>				Yes / No - ? If Yes add SIF



SABLE RESOURCES LTD.
ATTN: Joel Gillham
1290 - 625 Howe Street
Vancouver BC V6C 2T6

Date Received: 31-JUL-12
Report Date: 27-AUG-12 18:16 (MT)
Version: FINAL

Client Phone: 604-685-8565

Certificate of Analysis

Lab Work Order #: L1186732
Project P.O. #: NOT SUBMITTED
Job Reference: JULY 5809
C of C Numbers: 10-239572
Legal Site Desc:

Comments: The total and dissolve Silver data is not reported for L1186732-9 due to high concentration.

Selam Worku
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 8081 Lougheed Hwy, Suite 100, Burnaby, BC V5A 1W9 Canada | Phone: +1 604 253 4188 | Fax: +1 604 253 6700
ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1186732-7 SOIL 29-JUL-12 5809-8			
Grouping	Analyte				
SOIL					
Physical Tests	Moisture (%)	10.3			
	pH (1:2 soil:water) (pH)	8.50			
Cyanides	Cyanide, Weak Acid Diss (mg/kg)	15.9			
	Cyanide, Total (mg/kg)	23.8			
Metals	Aluminum (Al) (mg/kg)	1100			
	Antimony (Sb) (mg/kg)	122			
	Arsenic (As) (mg/kg)	311			
	Barium (Ba) (mg/kg)	1.13			
	Beryllium (Be) (mg/kg)	<0.20			
	Bismuth (Bi) (mg/kg)	3.96			
	Cadmium (Cd) (mg/kg)	68.4			
	Calcium (Ca) (mg/kg)	2910			
	Chromium (Cr) (mg/kg)	1.81			
	Cobalt (Co) (mg/kg)	137			
	Copper (Cu) (mg/kg)	3580			
	Iron (Fe) (mg/kg)	336000			
	Lead (Pb) (mg/kg)	2430			
	Lithium (Li) (mg/kg)	<5.0			
	Magnesium (Mg) (mg/kg)	573			
	Manganese (Mn) (mg/kg)	159			
	Mercury (Hg) (mg/kg)	1.03 ^{DLA}			
	Molybdenum (Mo) (mg/kg)	94.0			
	Nickel (Ni) (mg/kg)	46.3			
	Phosphorus (P) (mg/kg)	117			
	Potassium (K) (mg/kg)	300			
	Selenium (Se) (mg/kg)	11.5			
	Silver (Ag) (mg/kg)	64.3			
	Sodium (Na) (mg/kg)	130			
	Strontium (Sr) (mg/kg)	4.23			
	Thallium (Tl) (mg/kg)	0.880			
	Tin (Sn) (mg/kg)	<2.0			
	Titanium (Ti) (mg/kg)	41.0			
	Uranium (U) (mg/kg)	0.545			
	Vanadium (V) (mg/kg)	3.20			
	Zinc (Zn) (mg/kg)	5690			

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID	L1186732-1 WATER 29-JUL-12 5809-1	L1186732-2 WATER 29-JUL-12 5809-2	L1186732-3 WATER 29-JUL-12 5809-3	L1186732-4 WATER 29-JUL-12 5809-4	L1186732-5 WATER 29-JUL-12 5809-6	
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	173	273	153	2020	633
	Hardness (as CaCO3) (mg/L)	79.8	138	71.6	1370	183
	pH (pH)	7.49	7.62	7.76	7.43	8.03
	Total Suspended Solids (mg/L)	<3.0	<3.0	<3.0	77.1	6.3
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	18.9	26.2	29.1	81.0	82.8
	Chloride (Cl) (mg/L)	<0.50	<0.50	<0.50	<10 ^{DLM}	
	Sulfate (SO4) (mg/L)	63.2	107	45.6	1340	
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050				<0.0050
	Cyanide, Total (mg/L)	<0.0050				0.0058
Bacteriological Tests	E. coli (MPN/100mL)	1	105			
Total Metals	Aluminum (Al)-Total (mg/L)	0.0529	0.209	0.0441	1.31	0.947
	Antimony (Sb)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.0010 ^{DLA}	0.00958
	Arsenic (As)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.0010 ^{DLA}	0.00116
	Barium (Ba)-Total (mg/L)	<0.020	<0.020	<0.020	<0.020	0.107
	Beryllium (Be)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	<0.0010
	Bismuth (Bi)-Total (mg/L)	<0.20	<0.20	<0.20	<0.20	<0.20
	Boron (B)-Total (mg/L)	<0.10	<0.10	<0.10	<0.10	0.66
	Cadmium (Cd)-Total (mg/L)	0.000158	0.000479	0.000090	0.00447	<0.00010 ^{DLM}
	Calcium (Ca)-Total (mg/L)	27.0	48.8	24.3	307	71.0
	Chromium (Cr)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	<0.0010
	Cobalt (Co)-Total (mg/L)	0.00034	0.00875	0.00068	0.129	0.00367
	Copper (Cu)-Total (mg/L)	<0.0010	0.0126	0.0020	0.0467	0.0057
	Iron (Fe)-Total (mg/L)	<0.030	0.852	0.071	11.2	0.383
	Lead (Pb)-Total (mg/L)	<0.00050	<0.00050	<0.00050	0.0026	0.00634
	Lithium (Li)-Total (mg/L)	<0.0050	<0.0050	<0.0050	0.025	0.0085
	Magnesium (Mg)-Total (mg/L)	4.17	5.43	2.94	35.8	3.57
	Manganese (Mn)-Total (mg/L)	0.00752	0.249	0.0222	4.13	0.295
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010 ^{DLA}	<0.000010
	Molybdenum (Mo)-Total (mg/L)	<0.0010	0.0012	0.0029	<0.0020 ^{DLA}	0.227
	Nickel (Ni)-Total (mg/L)	0.0017	0.0106	0.0016	0.134	0.0021
	Phosphorus (P)-Total (mg/L)	<0.30	<0.30	<0.30	<0.30	<0.30
	Potassium (K)-Total (mg/L)	<2.0	<2.0	<2.0	<2.0	34.2
	Selenium (Se)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	0.0015
	Silicon (Si)-Total (mg/L)	3.90	4.50	3.82	8.60	5.54
	Silver (Ag)-Total (mg/L)	<0.000020	<0.000020	<0.000020	0.000152	0.000571
	Sodium (Na)-Total (mg/L)	<2.0	<2.0	<2.0	4.9	39.1

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1186732-6 WATER 29-JUL-12 5809-7	L1186732-8 WATER 29-JUL-12 5809-9	L1186732-9 WATER 29-JUL-12 5809-10		
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	370	238	329		
	Hardness (as CaCO3) (mg/L)	145	121	57.6		
	pH (pH)	7.31	7.77	8.45		
	Total Suspended Solids (mg/L)	9.3	<3.0	75.4		
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	126	31.6	70.4		
	Chloride (Cl) (mg/L)	0.77	<0.50			
	Sulfate (SO4) (mg/L)	54.8	86.4			
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050	<0.0050			
	Cyanide, Total (mg/L)	<0.0050	<0.0050			
Bacteriological Tests	E. coli (MPN/100mL)		63			
Total Metals	Aluminum (Al)-Total (mg/L)	0.115	0.133	5.97		
	Antimony (Sb)-Total (mg/L)	<0.00050	<0.00050	0.0598		
	Arsenic (As)-Total (mg/L)	0.00390	<0.00050	0.00319		
	Barium (Ba)-Total (mg/L)	0.037	<0.020	0.118		
	Beryllium (Be)-Total (mg/L)	<0.0010	<0.0010	<0.0010		
	Bismuth (Bi)-Total (mg/L)	<0.20	<0.20	<0.20		
	Boron (B)-Total (mg/L)	0.31	<0.10	2.13		
	Cadmium (Cd)-Total (mg/L)	0.000078	0.000352	<0.00048 ^{DLM}		
	Calcium (Ca)-Total (mg/L)	46.8	43.4	22.3		
	Chromium (Cr)-Total (mg/L)	<0.0010	<0.0010	0.0015		
	Cobalt (Co)-Total (mg/L)	0.00099	0.00565	0.00467		
	Copper (Cu)-Total (mg/L)	0.0038	0.0081	0.765		
	Iron (Fe)-Total (mg/L)	0.420	0.512	2.17		
	Lead (Pb)-Total (mg/L)	0.00197	<0.00050	0.786		
	Lithium (Li)-Total (mg/L)	<0.0050	<0.0050	0.0112		
	Magnesium (Mg)-Total (mg/L)	3.31	4.38	2.53		
	Manganese (Mn)-Total (mg/L)	0.601	0.159	0.136		
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	0.000044		
	Molybdenum (Mo)-Total (mg/L)	0.0043	0.0035	0.115		
	Nickel (Ni)-Total (mg/L)	0.0015	0.0071	0.0265		
	Phosphorus (P)-Total (mg/L)	<0.30	<0.30	<0.30		
	Potassium (K)-Total (mg/L)	2.5	<2.0	32.3		
	Selenium (Se)-Total (mg/L)	<0.0010	<0.0010	0.0184		
	Silicon (Si)-Total (mg/L)	7.05	4.10	14.1		
Silver (Ag)-Total (mg/L)	0.00209	0.000041				
Sodium (Na)-Total (mg/L)	14.9	<2.0	26.8			

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID	L1186732-1 WATER 29-JUL-12 5809-1	L1186732-2 WATER 29-JUL-12 5809-2	L1186732-3 WATER 29-JUL-12 5809-3	L1186732-4 WATER 29-JUL-12 5809-4	L1186732-5 WATER 29-JUL-12 5809-6	
Grouping	Analyte					
WATER						
Total Metals	Strontium (Sr)-Total (mg/L)	0.0851	0.126	0.0728	0.683	0.508
	Thallium (Tl)-Total (mg/L)	<0.00020	<0.00020	<0.00020	<0.00040 ^{DLA}	<0.00020
	Tin (Sn)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.0010 ^{DLA}	<0.00050
	Titanium (Ti)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010	0.011
	Uranium (U)-Total (mg/L)	<0.00020	<0.00020	0.00026	<0.00040 ^{DLA}	0.00366
	Vanadium (V)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	0.0015
	Zinc (Zn)-Total (mg/L)	<0.0050	0.0333	<0.0050	0.398	0.0114
Dissolved Metals	Dissolved Metals Filtration Location	LAB	LAB	LAB	LAB	LAB
	Aluminum (Al)-Dissolved (mg/L)	0.0341	0.0237	0.0217	0.021	0.0209
	Antimony (Sb)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.0010 ^{DLA}	0.00938
	Arsenic (As)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.0010 ^{DLA}	0.00100
	Barium (Ba)-Dissolved (mg/L)	<0.020	<0.020	<0.020	<0.020	0.089
	Beryllium (Be)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	<0.0010
	Bismuth (Bi)-Dissolved (mg/L)	<0.20	<0.20	<0.20	<0.20	<0.20
	Boron (B)-Dissolved (mg/L)	<0.10	<0.10	<0.10	<0.10	0.65 ^{DLM}
	Cadmium (Cd)-Dissolved (mg/L)	0.000150	0.000351	0.000080	0.00685	<0.00010
	Calcium (Ca)-Dissolved (mg/L)	25.5	46.6	23.9	460 ^{DLA}	68.0
	Chromium (Cr)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	<0.0010
	Cobalt (Co)-Dissolved (mg/L)	0.00033	0.00810	0.00059	0.219	0.00335
	Copper (Cu)-Dissolved (mg/L)	<0.0010	<0.0010	0.0012	0.0033	0.0042
	Iron (Fe)-Dissolved (mg/L)	<0.030	<0.030	<0.030	0.427 ^{DLA}	<0.030
	Lead (Pb)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.0010 ^{DLA}	<0.00050
	Lithium (Li)-Dissolved (mg/L)	<0.0050	<0.0050	<0.0050	0.045	0.0080
	Magnesium (Mg)-Dissolved (mg/L)	3.90	5.17	2.89	53.0	3.29
	Manganese (Mn)-Dissolved (mg/L)	0.00691	0.242	0.0200	6.37	0.253
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010 ^{DLA}	<0.000010
	Molybdenum (Mo)-Dissolved (mg/L)	<0.0010	0.0011	0.0028	<0.0020 ^{DLA}	0.218
	Nickel (Ni)-Dissolved (mg/L)	0.0018	0.0098	0.0015	0.226	0.0018
	Phosphorus (P)-Dissolved (mg/L)	<0.30	<0.30	<0.30	<0.30	<0.30
	Potassium (K)-Dissolved (mg/L)	<2.0	<2.0	<2.0	<2.0 ^{DLA}	32.2
	Selenium (Se)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	0.0013
	Silicon (Si)-Dissolved (mg/L)	3.66	4.16	3.72	8.79 ^{DLA}	3.31
	Silver (Ag)-Dissolved (mg/L)	<0.000020	<0.000020	<0.000020	<0.000040 ^{DLA}	0.000053
	Sodium (Na)-Dissolved (mg/L)	<2.0	<2.0	<2.0	6.3	37.4
	Strontium (Sr)-Dissolved (mg/L)	0.0794	0.120	0.0705	0.989	0.484
	Thallium (Tl)-Dissolved (mg/L)	<0.00020	<0.00020	<0.00020	<0.00040 ^{DLA}	<0.00020
	Tin (Sn)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.0010 ^{DLA}	<0.00050

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L1186732-6	L1186732-8	L1186732-9
		Description	WATER	WATER	WATER
		Sampled Date	29-JUL-12	29-JUL-12	29-JUL-12
		Sampled Time			
		Client ID	5809-7	5809-9	5809-10
Grouping	Analyte				
WATER					
Total Metals	Strontium (Sr)-Total (mg/L)		0.120	0.109	0.189
	Thallium (Tl)-Total (mg/L)		<0.00020	<0.00020	0.00027
	Tin (Sn)-Total (mg/L)		<0.00050	<0.00050	<0.00050
	Titanium (Ti)-Total (mg/L)		<0.010	<0.010	0.037
	Uranium (U)-Total (mg/L)		0.00078	0.00028	0.00025
	Vanadium (V)-Total (mg/L)		<0.0010	<0.0010	0.0085
	Zinc (Zn)-Total (mg/L)		0.0085	0.0233	2.99
Dissolved Metals	Dissolved Metals Filtration Location		LAB	LAB	LAB
	Aluminum (Al)-Dissolved (mg/L)		0.0088	0.0288	0.0171
	Antimony (Sb)-Dissolved (mg/L)		<0.00050	<0.00050	0.0546
	Arsenic (As)-Dissolved (mg/L)		0.00482	<0.00050	0.00196
	Barium (Ba)-Dissolved (mg/L)		0.039	<0.020	0.046
	Beryllium (Be)-Dissolved (mg/L)		<0.0010	<0.0010	<0.0010
	Bismuth (Bi)-Dissolved (mg/L)		<0.20	<0.20	<0.20
	Boron (B)-Dissolved (mg/L)		0.39	<0.10	2.02
	Cadmium (Cd)-Dissolved (mg/L)		0.000024	0.000255	<0.00031 ^{DLM}
	Calcium (Ca)-Dissolved (mg/L)		52.5	41.6	20.4
	Chromium (Cr)-Dissolved (mg/L)		<0.0010	<0.0010	<0.0010
	Cobalt (Co)-Dissolved (mg/L)		0.00114	0.00521	0.00405
	Copper (Cu)-Dissolved (mg/L)		0.0016	0.0012	0.705
	Iron (Fe)-Dissolved (mg/L)		0.352	<0.030	<0.030
	Lead (Pb)-Dissolved (mg/L)		0.00069	<0.00050	0.118
	Lithium (Li)-Dissolved (mg/L)		<0.0050	<0.0050	0.0090
	Magnesium (Mg)-Dissolved (mg/L)		3.30	4.14	1.61
	Manganese (Mn)-Dissolved (mg/L)		0.749 ^{DTC}	0.152	0.00507
	Mercury (Hg)-Dissolved (mg/L)		<0.000010	<0.000010	0.000031
	Molybdenum (Mo)-Dissolved (mg/L)		0.0050	0.0033	0.106
	Nickel (Ni)-Dissolved (mg/L)		0.0013	0.0064	0.0238
	Phosphorus (P)-Dissolved (mg/L)		<0.30	<0.30	<0.30
	Potassium (K)-Dissolved (mg/L)		3.0	<2.0	27.1
	Selenium (Se)-Dissolved (mg/L)		<0.0010	<0.0010	0.0122
	Silicon (Si)-Dissolved (mg/L)		7.19	3.81	3.42
	Silver (Ag)-Dissolved (mg/L)		0.00213	<0.000020	
	Sodium (Na)-Dissolved (mg/L)		18.9	<2.0	25.0
	Strontium (Sr)-Dissolved (mg/L)		0.129	0.103	0.172
	Thallium (Tl)-Dissolved (mg/L)		<0.00020	<0.00020	<0.00020
	Tin (Sn)-Dissolved (mg/L)		<0.00050	<0.00050	<0.00050

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	Description	Sampled Date	Sampled Time	Client ID	L1186732-1	L1186732-2	L1186732-3	L1186732-4	L1186732-5
					WATER	WATER	WATER	WATER	WATER
		29-JUL-12			29-JUL-12	29-JUL-12	29-JUL-12	29-JUL-12	29-JUL-12
					5809-1	5809-2	5809-3	5809-4	5809-6
Grouping	Analyte								
WATER									
Dissolved Metals	Titanium (Ti)-Dissolved (mg/L)				<0.010	<0.010	<0.010	<0.010	<0.010
	Uranium (U)-Dissolved (mg/L)				<0.00020	<0.00020	0.00026	<0.00040 ^{DLA}	0.00356
	Vanadium (V)-Dissolved (mg/L)				<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	<0.0010
	Zinc (Zn)-Dissolved (mg/L)				<0.0050	0.0222	<0.0050	0.569	<0.0050
Aggregate Organics	BOD (mg/L)				<5.0	<5.0			

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1186732-6 WATER 29-JUL-12 5809-7	L1186732-8 WATER 29-JUL-12 5809-9	L1186732-9 WATER 29-JUL-12 5809-10	
Grouping	Analyte				
WATER					
Dissolved Metals	Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.010	<0.010	
	Uranium (U)-Dissolved (mg/L)	0.00098	0.00023	<0.00020	
	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	
	Zinc (Zn)-Dissolved (mg/L)	<0.0050	0.0158	2.36	
Aggregate Organics	BOD (mg/L)				

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Duplicate	Cyanide, Weak Acid Diss	DLA	L1186732-1, -5, -6, -8
Duplicate	Chloride (Cl)	DLM	L1186732-1, -2, -3, -4, -6, -8
Duplicate	Antimony (Sb)	DUP-H	L1186732-7
Matrix Spike	Sodium (Na)-Total	MS-B	L1186732-1, -2, -3, -4, -5, -6, -8, -9
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1186732-1, -2, -3, -4, -5, -6, -8, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1186732-1, -2, -3, -4, -5, -6, -8, -9

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLA	Detection Limit Adjusted For required dilution
DLM	Detection Limit Adjusted For Sample Matrix Effects
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-COL-VA	Water	Alkalinity by Colourimetric (Automated)	EPA 310.2
		This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.	
ALK-PCT-VA	Water	Alkalinity by Auto. Titration	APHA 2320 "Alkalinity"
		This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.	
ALK-PCT-VA	Water	Alkalinity by Auto. Titration	APHA 2320 Alkalinity
		This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.	
ANIONS-CL-IC-VA	Water	Chloride by Ion Chromatography	APHA 4110 B.
		This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".	
ANIONS-SO4-IC-VA	Water	Sulfate by Ion Chromatography	APHA 4110 B.
		This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".	
BOD5-VA	Water	Biochemical Oxygen Demand- 5 day	APHA 5210 B- "BIOCHEMICAL OXYGEN DEMAND"
		This analysis is carried out using procedures adapted from APHA Method 5210 B - "Biochemical Oxygen Demand (BOD)". All forms of biochemical oxygen demand (BOD) are determined by diluting and incubating a sample for a specified time period, and measuring the oxygen depletion using a dissolved oxygen meter. Dissolved BOD (SOLUBLE) is determined by filtering the sample through a glass fibre filter prior to dilution. Carbonaceous BOD (CBOD) is determined by adding a nitrification inhibitor to the diluted sample prior to incubation.	
BOD5-VA	Water	Biochemical Oxygen Demand- 5 day	APHA 5210 B- BIOCHEMICAL OXYGEN DEMAND
		This analysis is carried out using procedures adapted from APHA Method 5210 B - "Biochemical Oxygen Demand (BOD)". All forms of biochemical oxygen demand (BOD) are determined by diluting and incubating a sample for a specified time period, and measuring the oxygen depletion using a dissolved oxygen meter. Dissolved BOD (SOLUBLE) is determined by filtering the sample through a glass fibre filter prior to dilution. Carbonaceous BOD (CBOD) is determined by adding a nitrification inhibitor to the diluted sample prior to incubation.	
CN-T-CFA-VA	Water	Total Cyanide in water by CFA	ISO 14403:2002
		This analysis is carried out using procedures adapted from ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourimetric analysis. Method Limitation: This method is susceptible to interference from thiocyanate (SCN). If SCN is present in the sample, there could be a positive interference with this method, but it would be less than 1% and could be as low as zero.	
CN-T-NAOH-CFA-VA	Soil	Total Cyanide in soil by CFA	ONMOE CN-E3015/ISO 14403:2002
		This analysis is carried out using procedures adapted from the Ontario Ministry of Environment CN-E3015 and ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by rotary extraction of the soil with 0.04M Sodium Hydroxide, followed by in-line UV digestion along with sample distillation and final determination by colourimetric analysis.	
CN-WAD-CFA-VA	Water	Weak Acid Diss. Cyanide in water by CFA	APHA 4500-CN CYANIDE
		This analysis is carried out using procedures adapted from APHA Method 4500-CN I. "Weak Acid Dissociable Cyanide". Weak Acid Dissociable (WAD) cyanide is determined by in-line sample distillation with final determination by colourimetric analysis.	
CN-WAD-NAOH-CFA-VA	Soil	Weak Acid Diss. Cyanide in soil by CFA	ONMOE CN-E3015/APHA 4500-CN CYANIDE

Reference Information

This analysis is carried out using procedures adapted from the Ontario Ministry of Environment CN-E3015 and APHA Method 4500-CN I. "Weak Acid Dissociable Cyanide". Weak Acid Dissociable (WAD) cyanide is determined by rotary extraction of the soil with 0.04M Sodium Hydroxide, followed by in-line sample distillation with final determination by colourimetric analysis.

EC-MAN-VA Water Conductivity (Manual) APHA 2510 "Conductivity"

This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.

EC-MAN-VA Water Conductivity (Manual) APHA 2510 Conductivity

This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.

EC-PCT-VA Water Conductivity (Automated) APHA 2510 Auto. Conduc.

This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.

ECOLI-COLI-ENV-VA Water E.coli by Collert APHA METHOD 9223

This analysis is carried out using procedures adapted from APHA Method 9223 "Enzyme Substrate Coliform Test". E. coli and Total Coliform are determined simultaneously. The sample is mixed with a mixture hydrolyzable substrates and then sealed in a multi-well packet. The packet is incubated for 18 or 24 hours and then the number of wells exhibiting a positive response are counted. The final result is obtained by comparing the positive responses to a probability table.

HARDNESS-CALC-VA Water Hardness APHA 2340B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO₃ equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-200.2-CVAF-VA Soil Mercury in Soil by CVAFS EPA 200.2/245.7

This analysis is carried out using procedures from CSR Analytical Method: "Strong Acid Leachable Metals (SALM) in Soil", BC Ministry of Environment, 26 June 2009, and procedures adapted from EPA Method 200.2. The sample is manually homogenized, dried at 60 degrees Celsius, sieved through a 2 mm (10 mesh) sieve (this sieve step is omitted for international soil samples), and a representative subsample of the dry material is weighed. The sample is then digested at 95 degrees Celsius for 2 hours by block digester using concentrated nitric and hydrochloric acids. Instrumental analysis is by atomic fluorescence spectrophotometry (EPA Method 245.7).

Method Limitation: This method is not a total digestion technique. It is a very strong acid digestion that is intended to dissolve those metals that may be environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.

HG-DIS-LOW-CVAFS-VA Water Dissolved Mercury in Water by CVAFS(Low) EPA SW-846 3005A & EPA 245.7

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by filtration (EPA Method 3005A) and involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).

HG-TOT-LOW-CVAFS-VA Water Total Mercury in Water by CVAFS(Low) EPA 245.7

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).

MET-200.2-CCMS-VA Soil Metals in Soil by CRC ICPMS EPA 200.2/6020A

This analysis is carried out using procedures from CSR Analytical Method: "Strong Acid Leachable Metals (SALM) in Soil", BC Ministry of Environment, 26 June 2009, and procedures adapted from EPA Method 200.2. The sample is manually homogenized, dried at 60 degrees Celsius, sieved through a 2 mm (10 mesh) sieve (this sieve step is omitted for international soil samples), and a representative subsample of the dry material is weighed. The sample is then digested at 95 degrees Celsius for 2 hours by block digester using concentrated nitric and hydrochloric acids. Instrumental analysis of the digested extract is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).

Method Limitation: This method is not a total digestion technique. It is a very strong acid digestion that is intended to dissolve those metals that may be environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.

MET-DIS-CCME-MS-VA Water Diss. Metals in Water by ICPMS (CCME) EPA SW-846 3005A/6020A

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

MET-DIS-ICP-VA Water Dissolved Metals in Water by ICPOES EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United

Reference Information

States Environmental Protection Agency (EPA). The procedure involves filtration (EPA Method 3005A) and analysis by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

MET-TOT-CCME-MS-VA Water Total Metals in Water by ICPMS (CCME) EPA SW-846 3005A/6020A

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

MET-TOT-ICP-VA Water Total Metals in Water by ICPOES EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

MOISTURE-VA Soil Moisture content ASTM D2974-00 Method A

This analysis is carried out gravimetrically by drying the sample at 105 C for a minimum of six hours.

PH-1:2-VA Soil pH in Soil (1:2 Soil:Water Extraction) BC WLAP METHOD: PH, ELECTROMETRIC, SOIL

This analysis is carried out in accordance with procedures described in the pH, Electrometric in Soil and Sediment method - Section B Physical/Inorganic and Misc. Constituents, BC Environmental Laboratory Manual 2007. The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water. The pH of the solution is then measured using a standard pH probe.

PH-MAN-VA Water pH by Manual Meter APHA 4500-H "pH Value"

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode.

It is recommended that this analysis be conducted in the field.

PH-MAN-VA Water pH by Manual Meter APHA 4500-H pH Value

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode.

It is recommended that this analysis be conducted in the field.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H "pH Value"

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H pH Value

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

TSS-VA Water Total Suspended Solids by Gravimetric APHA 2540 D - GRAVIMETRIC

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, TSS is determined by drying the filter at 104 degrees celsius.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
VA	ALS ENVIRONMENTAL - VANCOUVER, BC, CANADA

Chain of Custody Numbers:

10-239572

Reference Information

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

mg/kg - milligrams per kilogram based on dry weight of sample.

mg/kg wwt - milligrams per kilogram based on wet weight of sample.

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.

mg/L - milligrams per litre.

< - Less than.

D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



Report To	Report Format / Distribution	Service Request: (Rush subject to availability - Contact ALS to confirm TAT)
Company: <u>Sable Resources Ltd</u>	Standard: <input checked="" type="checkbox"/> Other (specify):	<input checked="" type="checkbox"/> Regular (Standard Turnaround Times - Business Days)
Contact:	Select: PDF <input checked="" type="checkbox"/> Excel <input checked="" type="checkbox"/> Digital Fax	Priority(2-4 Business Days)-50% surcharge - Contact ALS to confirm TAT
Address: <u>1290 - 625 Howe St</u> <u>Vancouver</u>	Email 1: <u>Joel.gillham@gmail.com</u>	Emergency (1-2 Business Days)-100% Surcharge - Contact ALS to confirm TAT
Phone: <u>604 685 8565</u> Fax:	Email 2: <u>SableRld@telus.net</u>	Same Day or Weekend Emergency - Contact ALS to confirm TAT

Invoice To Same as Report ? (circle) <input checked="" type="checkbox"/> Yes or No (if No, provide details)	Client / Project Information	Analysis Request (Indicate Filtered or Preserved, F/P)									
Copy of Invoice with Report? (circle) <input checked="" type="checkbox"/> Yes or No	Job #: <u>July 5809</u>										
Company:	PO / AFE:										
Contact:	LSD:										
Address:	Quote #:										
Phone: Fax:	ALS Contact:										
Lab Work Order # (lab use only)	<u>L1186732</u>										

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Sp-conductivity	Hardness, pH	Total Susp. Solids	Alkalinity	Chloride, Sulphate	5 year old total + /week acid dist	E. Coli	BOD - 5 day total	Total Metals ICPMS	Diss. Metals ICPMS	Number of Containers			
5809-1	Rush Processing Short Holding Time	29-Jul-12		Soil	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
5809-2					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
5809-3					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
5809-4					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
5809-6					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
5809-7					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
5809-8					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
5809-9					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
5809-10					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Special Instructions / Regulation with water or land use (CCME- Freshwater Aquatic Life/BC CSR-Commercial/AB Tier 1



Failure to complete all portions of this form may delay analysis. Please fill in this form LEG

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SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)				Observations: Yes / No ? If Yes add SIF
Released by:	Date:	Time:	Received by: <u>Brittany</u>	Date: <u>July 31</u>	Time: <u>8:55</u>	Temperature: <u>4.8 °C</u>	Verified by:	Date:	Time:		



SABLE RESOURCES LTD.
ATTN: Joel Gillham
1290 - 625 Howe Street
Vancouver BC V6C 2T6

Date Received: 31-JUL-12
Report Date: 27-AUG-12 18:01 (MT)
Version: FINAL

Client Phone: 604-685-8565

Certificate of Analysis

Lab Work Order #: L1186733
Project P.O. #: NOT SUBMITTED
Job Reference: JULY 8467
C of C Numbers: 10-239573
Legal Site Desc:

Selam Worku
Account Manager

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ADDRESS: 8081 Lougheed Hwy, Suite 100, Burnaby, BC V5A 1W9 Canada | Phone: +1 604 253 4188 | Fax: +1 604 253 6700
ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L1186733-1	L1186733-2	L1186733-3
		Description	WATER	WATER	WATER
		Sampled Date	29-JUL-12	29-JUL-12	29-JUL-12
		Sampled Time			
		Client ID	8467-1	8467-2	8467-3
Grouping	Analyte				
WATER					
Physical Tests	Conductivity (uS/cm)		135	392	134
	Hardness (as CaCO3) (mg/L)		61.3	173	62.9
	pH (pH)		7.89	8.20	7.92
	Total Suspended Solids (mg/L)		<3.0	7.0	<3.0
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)		31.4	112	33.6
	Ammonia, Total (as N) (mg/L)		<0.0050	0.95	0.0055
	Chloride (Cl) (mg/L)		<0.50	1.86	<0.50
	Nitrate (as N) (mg/L)		0.0115	8.86	0.0751
	Nitrite (as N) (mg/L)		<0.0010	0.0509	<0.0010
	Sulfate (SO4) (mg/L)		34.2	59.9	32.3
Total Metals	Aluminum (Al)-Total (mg/L)		0.0310	0.152	0.0362
	Antimony (Sb)-Total (mg/L)		<0.00050	0.00169	<0.00050
	Arsenic (As)-Total (mg/L)		<0.00050	<0.00050	<0.00050
	Barium (Ba)-Total (mg/L)		<0.020	0.037	<0.020
	Beryllium (Be)-Total (mg/L)		<0.0010	<0.0010	<0.0010
	Bismuth (Bi)-Total (mg/L)		<0.20	<0.20	<0.20
	Boron (B)-Total (mg/L)		<0.10	<0.10	<0.10
	Cadmium (Cd)-Total (mg/L)		0.000052	0.000053	0.000047
	Calcium (Ca)-Total (mg/L)		21.2	50.6 ^{DTC}	21.9
	Chromium (Cr)-Total (mg/L)		<0.0010	<0.0010	<0.0010
	Cobalt (Co)-Total (mg/L)		<0.00030	<0.00030	<0.00030
	Copper (Cu)-Total (mg/L)		0.0015	0.0021	0.0036
	Iron (Fe)-Total (mg/L)		0.040	0.117	0.042
	Lead (Pb)-Total (mg/L)		<0.00050	0.00119	<0.00050
	Lithium (Li)-Total (mg/L)		<0.0050	0.0222	<0.0050
	Magnesium (Mg)-Total (mg/L)		2.19	2.40	2.23
	Manganese (Mn)-Total (mg/L)		0.00854	0.0574	0.00832
	Mercury (Hg)-Total (mg/L)		<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Total (mg/L)		0.0027	0.0150	0.0027
	Nickel (Ni)-Total (mg/L)		<0.0010	<0.0010	<0.0010
	Phosphorus (P)-Total (mg/L)		<0.30	<0.30	<0.30
	Potassium (K)-Total (mg/L)		<2.0	<2.0	<2.0
	Selenium (Se)-Total (mg/L)		<0.0010	<0.0010	<0.0010
	Silicon (Si)-Total (mg/L)		3.53	4.22	3.64
	Silver (Ag)-Total (mg/L)		<0.000020	0.000087	<0.000020
	Sodium (Na)-Total (mg/L)		<2.0	7.2	<2.0
Strontium (Sr)-Total (mg/L)		0.0608	0.561 ^{DTC}	0.0706	

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1186733-1 WATER 29-JUL-12 8467-1	L1186733-2 WATER 29-JUL-12 8467-2	L1186733-3 WATER 29-JUL-12 8467-3		
Grouping	Analyte					
WATER						
Total Metals	Thallium (Tl)-Total (mg/L)	<0.00020	<0.00020	<0.00020		
	Tin (Sn)-Total (mg/L)	<0.00050	<0.00050	<0.00050		
	Titanium (Ti)-Total (mg/L)	<0.010	<0.010	<0.010		
	Uranium (U)-Total (mg/L)	0.00029	0.00379	0.00031		
	Vanadium (V)-Total (mg/L)	<0.0010	<0.0010	<0.0010		
	Zinc (Zn)-Total (mg/L)	<0.0050	0.0068	<0.0050		
Dissolved Metals	Dissolved Metals Filtration Location	LAB	LAB	LAB		
	Aluminum (Al)-Dissolved (mg/L)	0.0135	<0.0050	0.0153		
	Antimony (Sb)-Dissolved (mg/L)	<0.00050	0.00281 ^{DTC}	<0.00050		
	Arsenic (As)-Dissolved (mg/L)	<0.00050	0.00051	<0.00050		
	Barium (Ba)-Dissolved (mg/L)	<0.020	0.051	<0.020		
	Beryllium (Be)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010		
	Bismuth (Bi)-Dissolved (mg/L)	<0.20	<0.20	<0.20		
	Boron (B)-Dissolved (mg/L)	<0.10	<0.10	<0.10		
	Cadmium (Cd)-Dissolved (mg/L)	0.000043	0.000037 ^{DTC}	0.000040		
	Calcium (Ca)-Dissolved (mg/L)	21.0	65.8	21.6		
	Chromium (Cr)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010		
	Cobalt (Co)-Dissolved (mg/L)	<0.00030	<0.00030	<0.00030		
	Copper (Cu)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010		
	Iron (Fe)-Dissolved (mg/L)	<0.030	<0.030	<0.030		
	Lead (Pb)-Dissolved (mg/L)	<0.00050	<0.00050 ^{DTC}	<0.00050		
	Lithium (Li)-Dissolved (mg/L)	<0.0050	0.0390 ^{DTC}	<0.0050		
	Magnesium (Mg)-Dissolved (mg/L)	2.13	2.03 ^{DTC}	2.18		
	Manganese (Mn)-Dissolved (mg/L)	0.00727	0.0781 ^{DTC}	0.00670		
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010 ^{DTC}	<0.000010		
	Molybdenum (Mo)-Dissolved (mg/L)	0.0026	0.0241 ^{DTC}	0.0026		
	Nickel (Ni)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010		
	Phosphorus (P)-Dissolved (mg/L)	<0.30	<0.30	<0.30		
	Potassium (K)-Dissolved (mg/L)	<2.0	2.5	<2.0		
	Selenium (Se)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010		
	Silicon (Si)-Dissolved (mg/L)	3.42	3.63	3.52		
	Silver (Ag)-Dissolved (mg/L)	<0.000020	<0.000020	<0.000020		
	Sodium (Na)-Dissolved (mg/L)	<2.0	10.6 ^{DTC}	<2.0		
	Strontium (Sr)-Dissolved (mg/L)	0.0587	0.834 ^{DTC}	0.0684		
	Thallium (Tl)-Dissolved (mg/L)	<0.00020	<0.00020	<0.00020		
	Tin (Sn)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050		
	Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.010	<0.010		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	Description	Sampled Date	Sampled Time	Client ID		
L1186733-1	WATER	29-JUL-12		8467-1		
L1186733-2	WATER	29-JUL-12		8467-2		
L1186733-3	WATER	29-JUL-12		8467-3		
Grouping	Analyte					
WATER						
Dissolved Metals	Uranium (U)-Dissolved (mg/L)	0.00027	0.00568 ^{DTC}	0.00029		
	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010		
	Zinc (Zn)-Dissolved (mg/L)	<0.0050	<0.0050	<0.0050		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Duplicate	Nitrite (as N)	DLM	L1186733-1, -2, -3
Duplicate	Nitrate (as N)	DLM	L1186733-1, -2, -3
Duplicate	Sulfate (SO4)	DLM	L1186733-1, -2, -3
Matrix Spike	Nitrate (as N)	MS-B	L1186733-1, -2, -3
Matrix Spike	Nitrate (as N)	MS-B	L1186733-1, -2, -3
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1186733-1, -2, -3
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1186733-1, -2, -3
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1186733-1, -2, -3
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1186733-1, -2, -3

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLM	Detection Limit Adjusted For Sample Matrix Effects
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-COL-VA	Water	Alkalinity by Colourimetric (Automated)	EPA 310.2
This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.			
ANIONS-CL-IC-VA	Water	Chloride by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
ANIONS-NO2-IC-VA	Water	Nitrite in Water by Ion Chromatography	EPA 300.0
This analysis is carried out using procedures adapted from EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Nitrite is detected by UV absorbance.			
ANIONS-NO3-IC-VA	Water	Nitrate in Water by Ion Chromatography	EPA 300.0
This analysis is carried out using procedures adapted from EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Nitrate is detected by UV absorbance.			
ANIONS-SO4-IC-VA	Water	Sulfate by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
EC-PCT-VA	Water	Conductivity (Automated)	APHA 2510 Auto. Conduc.
This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.			
HARDNESS-CALC-VA	Water	Hardness	APHA 2340B
Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.			
HG-DIS-LOW-CVAFS-VA	Water	Dissolved Mercury in Water by CVAFS(Low)	EPA SW-846 3005A & EPA 245.7
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by filtration (EPA Method 3005A) and involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).			
HG-TOT-LOW-CVAFS-VA	Water	Total Mercury in Water by CVAFS(Low)	EPA 245.7
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).			
MET-DIS-CCME-MS-VA	Water	Diss. Metals in Water by ICPMS (CCME)	EPA SW-846 3005A/6020A
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).			
MET-DIS-ICP-VA	Water	Dissolved Metals in Water by ICPOES	EPA SW-846 3005A/6010B

Reference Information

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves filtration (EPA Method 3005A) and analysis by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

MET-TOT-CCME-MS-VA Water Total Metals in Water by ICPMS (CCME) EPA SW-846 3005A/6020A

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

MET-TOT-ICP-VA Water Total Metals in Water by ICPOES EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

NH3-F-VA Water Ammonia in Water by Fluorescence J. ENVIRON. MONIT., 2005, 7, 37-42, RSC

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H "pH Value"

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H pH Value

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

TSS-VA Water Total Suspended Solids by Gravimetric APHA 2540 D - GRAVIMETRIC

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, TSS is determined by drying the filter at 104 degrees celsius.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
VA	ALS ENVIRONMENTAL - VANCOUVER, BC, CANADA

Chain of Custody Numbers:

10-239573

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

mg/kg - milligrams per kilogram based on dry weight of sample.

mg/kg wwt - milligrams per kilogram based on wet weight of sample.

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.

mg/L - milligrams per litre.

< - Less than.

D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



Report To	Report Format / Distribution	Service Request: (Rush subject to availability - Contact ALS to confirm TAT)
Company: <u>Sable Resources Ltd</u>	Standard: <input checked="" type="checkbox"/> Other (specify):	<input checked="" type="checkbox"/> Regular (Standard Turnaround Times - Business Days)
Contact:	Select: PDF <input checked="" type="checkbox"/> Excel <input type="checkbox"/> Digital <input type="checkbox"/> Fax	Priority(2-4 Business Days)-90% surcharge - Contact ALS to confirm TAT
Address: <u>1290 - 625 Howe St</u>	Email 1: <u>Joel.gillham@gmail.com</u>	Emergency (1-2 Business Days)-100% Surcharge - Contact ALS to confirm TAT
<u>Vancouver BC</u>	Email 2: <u>SableLtd@telus-net</u>	Same Day or Weekend Emergency - Contact ALS to confirm TAT
Phone: <u>604 685 5565</u> Fax:		

Invoice To Same as Report ? (circle) <input checked="" type="checkbox"/> Yes or No (if No, provide details)	Client / Project Information	Analysis Request (Indicate Filtered or Preserved, F/P)												
Copy of Invoice with Report? (circle) <input checked="" type="checkbox"/> Yes or No	Job #: <u>Jul- 8467</u>	Sp. Conductivity	Hardness	pH	Total Susp-Solids	Alkalinity	Ammonia	Chloride	Nitrate	Nitrite	Sulphate	Total Metals ICPMS	Dis. Metals ICPMS	Number of Containers
Company:	PO / AFE:													
Contact:	LSD:													
Address:														
Phone: Fax:	Quote #:													

Lab Work Order # (lab use only)	<u>L1186733</u>	ALS Contact:	Sampler:
--	-----------------	---------------------	-----------------

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Sp. Conductivity	Hardness	pH	Total Susp-Solids	Alkalinity	Ammonia	Chloride	Nitrate	Nitrite	Sulphate	Total Metals ICPMS	Dis. Metals ICPMS	Number of Containers
	<u>8467 - 1</u>	<u>29-Jul-12</u>															
	<u>8467 - 2</u>	<u>29-Jul-12</u>															
	<u>8467 - 3</u>	<u>29-Jul-12</u>															

Short Holding Time
 Rush Processing



Special Instructions / Regulation with water or land use (CCME- Freshwater Aquatic Life/BC CSR-Commercial/AB Tier 1-Natural/ETC) / Hazardous Details

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.

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SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)			
Released by: <u>[Signature]</u>	Date:	Time:	Received by: <u>Brittany</u>	Date: <u>July 31</u>	Time: <u>8:55</u>	Temperature: <u>4.8 °C</u>	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF



SABLE RESOURCES LTD.
ATTN: Joel Gillham
1290 - 625 Howe Street
Vancouver BC V6C 2T6

Date Received: 05-SEP-12
Report Date: 19-SEP-12 14:29 (MT)
Version: FINAL

Client Phone: 604-685-8565

Certificate of Analysis

Lab Work Order #: L1204849
Project P.O. #: NOT SUBMITTED
Job Reference: AUGUST 5809
C of C Numbers: 10-239570, 10-239571
Legal Site Desc:

Comments: Please note that sub-samples were taken from the unpreserved bottle for metals analysis where necessary. In addition, micro analysis cannot be done for L1204849-1 and -2 due to hold time exceedance upon sample receipt. Silver data cannot be reported for L1204849-5 diss. and -9 tot./diss. because its final result is greater than 0.1 mg/L (any result above this level is unstable).

Selam Worku
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1204849-7
Description	Soil
Sampled Date	31-AUG-12
Sampled Time	
Client ID	5809-8
Grouping	Analyte
SOIL	
Physical Tests	Moisture (%)
	13.5
	pH (1:2 soil:water) (pH)
	10.02
Cyanides	Cyanide, Weak Acid Diss (mg/kg)
	361
	Cyanide, Total (mg/kg)
	418
Metals	Aluminum (Al) (mg/kg)
	1200
	Antimony (Sb) (mg/kg)
	12.1
	Arsenic (As) (mg/kg)
	234
	Barium (Ba) (mg/kg)
	0.86
	Beryllium (Be) (mg/kg)
	<0.20
	Bismuth (Bi) (mg/kg)
	3.09
	Cadmium (Cd) (mg/kg)
	25.7
	Calcium (Ca) (mg/kg)
	3130
	Chromium (Cr) (mg/kg)
	1.74
	Cobalt (Co) (mg/kg)
	113
	Copper (Cu) (mg/kg)
	1260
	Iron (Fe) (mg/kg)
	327000
	Lead (Pb) (mg/kg)
	2650
	Lithium (Li) (mg/kg)
	<5.0
	Magnesium (Mg) (mg/kg)
	844
	Manganese (Mn) (mg/kg)
	212
	Mercury (Hg) (mg/kg)
	0.360
	Molybdenum (Mo) (mg/kg)
	33.4
	Nickel (Ni) (mg/kg)
	47.1
	Phosphorus (P) (mg/kg)
	207
	Potassium (K) (mg/kg)
	300
	Selenium (Se) (mg/kg)
	8.72
	Silver (Ag) (mg/kg)
	44.6
	Sodium (Na) (mg/kg)
	510
	Strontium (Sr) (mg/kg)
	4.64
	Thallium (Tl) (mg/kg)
	0.443
	Tin (Sn) (mg/kg)
	<2.0
	Titanium (Ti) (mg/kg)
	134
	Uranium (U) (mg/kg)
	0.653
	Vanadium (V) (mg/kg)
	4.22
	Zinc (Zn) (mg/kg)
	2920

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID	L1204849-1 Water 31-AUG-12 5809-1	L1204849-2 Water 31-AUG-12 5809-2	L1204849-3 Water 31-AUG-12 5809-3	L1204849-4 Water 31-AUG-12 5809-4	L1204849-5 Water 31-AUG-12 5809-6	
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	189	342	161	1830	337
	Hardness (as CaCO3) (mg/L)	113	177	78.5	1260	78.8
	pH (pH)	7.69	7.78	7.87	7.52	8.11
	Total Suspended Solids (mg/L)	<3.0	<3.0	<3.0	42.2	<3.0
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	20.4	30.2	33.6	111	69.9
	Chloride (Cl) (mg/L)	<0.50	<0.50	<0.50	<10 ^{DLM}	
	Sulfate (SO4) (mg/L)	64.2	131	41.9	1120	
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050				<0.0050
	Cyanide, Total (mg/L)	<0.0050				<0.0050
Total Metals	Aluminum (Al)-Total (mg/L)	0.0250	0.0430	0.0127	0.058	0.0420
	Antimony (Sb)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.0025 ^{DLA}	0.00349
	Arsenic (As)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.0025 ^{DLA}	0.00061
	Barium (Ba)-Total (mg/L)	<0.020	<0.020	<0.020	<0.020	0.064
	Beryllium (Be)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0050 ^{DLA}	<0.0010
	Bismuth (Bi)-Total (mg/L)	<0.20	<0.20	<0.20	<0.20	<0.20
	Boron (B)-Total (mg/L)	<0.10	<0.10	<0.10	<0.10	0.29 ^{DTC}
	Cadmium (Cd)-Total (mg/L)	0.000142 ^{DTC}	0.000251	0.000026	0.00221	0.000046
	Calcium (Ca)-Total (mg/L)	30.6	60.7	26.3	441	44.3
	Chromium (Cr)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0050 ^{DLA}	<0.0010
	Cobalt (Co)-Total (mg/L)	<0.00030	0.00769	<0.00030	0.126	0.00041
	Copper (Cu)-Total (mg/L)	<0.0010	0.0034	<0.0010	<0.0050 ^{DLA}	0.0010
	Iron (Fe)-Total (mg/L)	<0.030 ^{DTC}	0.349	<0.030	0.843 ^{DTC}	<0.030
	Lead (Pb)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.0025 ^{DLA}	<0.00050
	Lithium (Li)-Total (mg/L)	<0.0050	<0.0050	<0.0050	0.031	<0.0050 ^{DTC}
	Magnesium (Mg)-Total (mg/L)	4.24	6.20	2.76	40.8	1.37 ^{DTC}
	Manganese (Mn)-Total (mg/L)	0.00291	0.270	0.00115	4.46	0.00301
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Total (mg/L)	<0.0010	<0.0010	0.0033	<0.0050 ^{DLA}	0.0743
	Nickel (Ni)-Total (mg/L)	0.0016	0.0088	<0.0010	0.119	<0.0010
	Phosphorus (P)-Total (mg/L)	<0.30	<0.30	<0.30	<0.30	<0.30
	Potassium (K)-Total (mg/L)	<2.0	<2.0	<2.0	<2.0	16.7 ^{DTC}
	Selenium (Se)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0050 ^{DLA}	0.0012
	Silicon (Si)-Total (mg/L)	4.20	4.80	3.81	8.93	1.33 ^{DTC}
	Silver (Ag)-Total (mg/L)	<0.000020	<0.000020	0.000041	<0.00010 ^{DLA}	0.000153
	Sodium (Na)-Total (mg/L)	<2.0	2.0	<2.0	6.7	17.7 ^{DTC}
	Strontium (Sr)-Total (mg/L)	0.0901	0.163	0.0772	1.04	0.242 ^{DTC}
	Thallium (Tl)-Total (mg/L)	<0.00020	<0.00020	<0.00020	<0.0010 ^{DLA}	<0.00020

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L1204849-6	L1204849-8	L1204849-9	L1204849-10
		Description	Water	Water	Water	Water
		Sampled Date	31-AUG-12	31-AUG-12	31-AUG-12	31-AUG-12
		Sampled Time				
		Client ID	5809-7	5809-9	5809-10	5809-11
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)		653	288	327	305
	Hardness (as CaCO3) (mg/L)		306	144	71.2	72.8
	pH (pH)		8.19	7.91	8.15	8.34
	Total Suspended Solids (mg/L)		<3.0	<3.0	114	
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)		87.6	39.3	56.2	42.4
	Chloride (Cl) (mg/L)		0.81	<0.50		
	Sulfate (SO4) (mg/L)		197	98.0		
Cyanides	Cyanide, Weak Acid Diss (mg/L)		<0.0050	<0.0050		<0.0050
	Cyanide, Total (mg/L)		<0.0050	<0.0050		<0.0050
Total Metals	Aluminum (Al)-Total (mg/L)		0.0098	0.0233	1.58	0.917
	Antimony (Sb)-Total (mg/L)		<0.00050	<0.00050	0.00997	0.00451
	Arsenic (As)-Total (mg/L)		0.00179	<0.00050	0.00061	0.00061
	Barium (Ba)-Total (mg/L)		0.046	<0.020	0.065	0.052
	Beryllium (Be)-Total (mg/L)		<0.0010	<0.0010	<0.0010	<0.0010
	Bismuth (Bi)-Total (mg/L)		<0.20	<0.20	<0.20	<0.20
	Boron (B)-Total (mg/L)		0.43	<0.10	0.95	<0.10
	Cadmium (Cd)-Total (mg/L)		0.000053	0.000170	0.000050	0.000106
	Calcium (Ca)-Total (mg/L)		106	49.9	23.7	22.1
	Chromium (Cr)-Total (mg/L)		<0.0010	<0.0010	<0.0010	<0.0010
	Cobalt (Co)-Total (mg/L)		0.00591	0.00365	0.00455	<0.00030
	Copper (Cu)-Total (mg/L)		0.0039	0.0021	0.335	0.0011
	Iron (Fe)-Total (mg/L)		0.081	0.139 ^{DTC}	0.830	0.993
	Lead (Pb)-Total (mg/L)		<0.00050	<0.00050	0.0115	0.00765
	Lithium (Li)-Total (mg/L)		<0.0050	<0.0050	0.0128	0.0181
	Magnesium (Mg)-Total (mg/L)		7.44	4.50	2.21	2.04
	Manganese (Mn)-Total (mg/L)		0.0181	0.124	0.122	0.194
	Mercury (Hg)-Total (mg/L)		<0.000010	<0.000010	0.000026	<0.000010
	Molybdenum (Mo)-Total (mg/L)		0.0049	0.0040	0.0723	0.0463
	Nickel (Ni)-Total (mg/L)		<0.0010	0.0044	0.0295	<0.0010
	Phosphorus (P)-Total (mg/L)		<0.30	<0.30	<0.30	<0.30
	Potassium (K)-Total (mg/L)		<2.0	<2.0	34.9	43.3
	Selenium (Se)-Total (mg/L)		<0.0010	<0.0010	0.0038	<0.0010
	Silicon (Si)-Total (mg/L)		1.72	4.12	6.83	4.84
	Silver (Ag)-Total (mg/L)		0.000903	0.000141	Not Reportable ^{RRR}	0.00230
	Sodium (Na)-Total (mg/L)		27.0	2.3	18.4	12.8
	Strontium (Sr)-Total (mg/L)		0.316	0.133	0.268	0.295
Thallium (Tl)-Total (mg/L)		<0.00020	<0.00020	<0.00020	<0.00020	

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	Description	Sampled Date	Sampled Time	Client ID	L1204849-1	L1204849-2	L1204849-3	L1204849-4	L1204849-5
					Water	Water	Water	Water	Water
					31-AUG-12	31-AUG-12	31-AUG-12	31-AUG-12	31-AUG-12
					5809-1	5809-2	5809-3	5809-4	5809-6
Grouping	Analyte								
WATER									
Total Metals	Tin (Sn)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.0025 ^{DLA}	<0.00050	<0.00050	<0.00050	<0.00050
	Titanium (Ti)-Total (mg/L)	<0.010	<0.010	<0.010	0.018	<0.010	<0.010	<0.010	<0.010
	Uranium (U)-Total (mg/L)	<0.00020	<0.00020	0.00035	<0.0010 ^{DLA}	<0.00020	<0.00020	<0.00020	0.00079
	Vanadium (V)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0050 ^{DLA}	<0.0010	<0.0010	<0.0010	<0.0010
	Zinc (Zn)-Total (mg/L)	<0.0050	0.0193	<0.0050	0.247	<0.0050	<0.0050	<0.0050	<0.0050 ^{DTC}
Dissolved Metals	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0104	0.0679 ^{DTC}	0.0138	0.050	0.0651 ^{DTC}	0.050	0.0651 ^{DTC}	0.0651 ^{DTC}
	Antimony (Sb)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.0025 ^{DLA}	<0.00050	<0.00050	<0.0025 ^{DLA}	0.00938 ^{DTC}
	Arsenic (As)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.0025 ^{DLA}	<0.00050	<0.00050	<0.0025 ^{DLA}	<0.00050
	Barium (Ba)-Dissolved (mg/L)	<0.020	<0.020	<0.020	<0.020	0.037	<0.020	<0.020	0.037
	Beryllium (Be)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0050 ^{DLA}	<0.0010	<0.0010	<0.0050 ^{DLA}	<0.0010
	Bismuth (Bi)-Dissolved (mg/L)	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
	Boron (B)-Dissolved (mg/L)	<0.10	<0.10	<0.10	<0.10	1.91 ^{DTC}	<0.10	<0.10	1.91 ^{DTC}
	Cadmium (Cd)-Dissolved (mg/L)	0.000029 ^{DTC}	0.000239	0.000044	0.00269	0.000050	0.000044	0.00269	0.000050
	Calcium (Ca)-Dissolved (mg/L)	37.6 ^{DTC}	60.7	26.8	440	28.2	26.8	440	28.2
	Chromium (Cr)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0050 ^{DLA}	<0.0010	<0.0010	<0.0050 ^{DLA}	<0.0010 ^{DTC}
	Cobalt (Co)-Dissolved (mg/L)	<0.00030	0.00759 ^{DTC}	<0.00030	0.125	0.00371 ^{DTC}	<0.00030	0.125	0.00371 ^{DTC}
	Copper (Cu)-Dissolved (mg/L)	0.0011 ^{DTC}	0.0065 ^{DTC}	<0.0010	0.0089	0.401 ^{DTC}	<0.0010	0.0089	0.401 ^{DTC}
	Iron (Fe)-Dissolved (mg/L)	0.257 ^{DTC}	0.318	<0.030	16.1 ^{DTC}	<0.030	<0.030	16.1 ^{DTC}	<0.030 ^{DTC}
	Lead (Pb)-Dissolved (mg/L)	<0.00050	0.00120	<0.00050	<0.0025 ^{DLA}	0.00424 ^{DTC}	<0.00050	<0.0025 ^{DLA}	0.00424 ^{DTC}
	Lithium (Li)-Dissolved (mg/L)	<0.0050	<0.0050	<0.0050	0.030	0.0144 ^{DTC}	<0.0050	0.030	0.0144 ^{DTC}
	Magnesium (Mg)-Dissolved (mg/L)	4.77	6.22	2.81	40.1	2.06 ^{DTC}	2.81	40.1	2.06 ^{DTC}
	Manganese (Mn)-Dissolved (mg/L)	0.00262	0.270	0.00834 ^{DTC}	4.42	0.0321 ^{DTC}	0.00834 ^{DTC}	4.42	0.0321 ^{DTC}
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010 ^{DLA}	<0.000010	<0.000010	<0.000010 ^{DLA}	<0.000010
	Molybdenum (Mo)-Dissolved (mg/L)	0.0027	0.0017	0.0031	<0.0050 ^{DLA}	0.0609 ^{DTC}	0.0031	<0.0050 ^{DLA}	0.0609 ^{DTC}
	Nickel (Ni)-Dissolved (mg/L)	<0.0010	0.0089	<0.0010	0.120	0.0262 ^{DTC}	<0.0010	0.120	0.0262 ^{DTC}
	Phosphorus (P)-Dissolved (mg/L)	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
	Potassium (K)-Dissolved (mg/L)	<2.0	<2.0	<2.0	<2.0	31.2 ^{DTC}	<2.0	<2.0	31.2 ^{DTC}
	Selenium (Se)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0050 ^{DLA}	0.0045 ^{DTC}	<0.0010	<0.0050 ^{DLA}	0.0045 ^{DTC}
	Silicon (Si)-Dissolved (mg/L)	4.35	4.86	3.83	10.4	3.13 ^{DTC}	3.83	10.4	3.13 ^{DTC}
	Silver (Ag)-Dissolved (mg/L)	<0.000020	0.00334 ^{DTC}	<0.000020	0.00092 ^{DTC}	Not Reportable ^{RRR}	<0.000020	0.00092 ^{DTC}	Not Reportable ^{RRR}
	Sodium (Na)-Dissolved (mg/L)	<2.0	2.3	<2.0	6.4	23.9 ^{DTC}	<2.0	6.4	23.9 ^{DTC}
	Strontium (Sr)-Dissolved (mg/L)	0.103	0.167	0.0790	1.00	0.298 ^{DTC}	0.0790	1.00	0.298 ^{DTC}
	Thallium (Tl)-Dissolved (mg/L)	<0.00020	<0.00020	<0.00020	<0.0010 ^{DLA}	<0.00020	<0.00020	<0.0010 ^{DLA}	<0.00020
	Tin (Sn)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.0025 ^{DLA}	<0.00050	<0.00050	<0.0025 ^{DLA}	<0.00050
	Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.010	<0.010	0.018	<0.010	<0.010	0.018	<0.010
	Uranium (U)-Dissolved (mg/L)	0.00037	<0.00020	0.00035	<0.0010 ^{DLA}	0.00057	0.00035	<0.0010 ^{DLA}	0.00057

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1204849-6 Water 31-AUG-12 5809-7	L1204849-8 Water 31-AUG-12 5809-9	L1204849-9 Water 31-AUG-12 5809-10	L1204849-10 Water 31-AUG-12 5809-11
Grouping	Analyte				
WATER					
Total Metals	Tin (Sn)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050
	Titanium (Ti)-Total (mg/L)	0.013	<0.010	0.018	0.013
	Uranium (U)-Total (mg/L)	0.00506	0.00047	0.00052	0.00027
	Vanadium (V)-Total (mg/L)	<0.0010	<0.0010	0.0025	0.0017
	Zinc (Zn)-Total (mg/L)	<0.0050 ^{DTC}	0.0107	0.0315	0.0111
Dissolved Metals	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0970 ^{DTC}	0.0318	0.0510	0.724 ^{DTC}
	Antimony (Sb)-Dissolved (mg/L)	0.00057	<0.00050	0.0104	0.00572 ^{DTC}
	Arsenic (As)-Dissolved (mg/L)	0.00176	<0.00050	0.00050	0.00058
	Barium (Ba)-Dissolved (mg/L)	0.048	<0.020	0.041	0.054
	Beryllium (Be)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010
	Bismuth (Bi)-Dissolved (mg/L)	<0.20	<0.20	<0.20	<0.20
	Boron (B)-Dissolved (mg/L)	0.44	<0.10	0.95	<0.10
	Cadmium (Cd)-Dissolved (mg/L)	0.000069	0.000187	0.000048	0.000070
	Calcium (Ca)-Dissolved (mg/L)	110	50.3	25.2	26.0
	Chromium (Cr)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010
	Cobalt (Co)-Dissolved (mg/L)	0.00579	0.00359	0.00453	<0.00030
	Copper (Cu)-Dissolved (mg/L)	0.0114 ^{DTC}	0.0027	0.333	0.0023
	Iron (Fe)-Dissolved (mg/L)	0.137 ^{DTC}	0.227 ^{DTC}	<0.030	0.983 ^{DTC}
	Lead (Pb)-Dissolved (mg/L)	0.00197 ^{DTC}	<0.00050	0.00125	0.0173 ^{DTC}
	Lithium (Li)-Dissolved (mg/L)	<0.0050	<0.0050	0.0125	0.0233
	Magnesium (Mg)-Dissolved (mg/L)	7.47	4.40	2.00	1.88
	Manganese (Mn)-Dissolved (mg/L)	0.0263 ^{DTC}	0.122	0.0546	0.227
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010	0.000021	<0.000010
	Molybdenum (Mo)-Dissolved (mg/L)	0.0053	0.0038	0.0705	0.0338
	Nickel (Ni)-Dissolved (mg/L)	0.0011	0.0044	0.0289	<0.0010
	Phosphorus (P)-Dissolved (mg/L)	<0.30	<0.30	<0.30	<0.30
	Potassium (K)-Dissolved (mg/L)	2.5	<2.0	35.0	47.9
	Selenium (Se)-Dissolved (mg/L)	<0.0010	<0.0010	0.0038	<0.0010
	Silicon (Si)-Dissolved (mg/L)	1.92	4.12	3.28	5.19
	Silver (Ag)-Dissolved (mg/L)	0.00725 ^{DTC}	0.000118	Not Reportable ^{RRR}	0.000423
	Sodium (Na)-Dissolved (mg/L)	27.3	2.2	19.1	13.1
	Strontium (Sr)-Dissolved (mg/L)	0.319	0.128	0.270	0.311
	Thallium (Tl)-Dissolved (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020
	Tin (Sn)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	0.00125
	Titanium (Ti)-Dissolved (mg/L)	0.014	<0.010	<0.010	0.013
	Uranium (U)-Dissolved (mg/L)	0.00469	0.00044	0.00052	0.00028

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID	L1204849-1 Water 31-AUG-12 5809-1	L1204849-2 Water 31-AUG-12 5809-2	L1204849-3 Water 31-AUG-12 5809-3	L1204849-4 Water 31-AUG-12 5809-4	L1204849-5 Water 31-AUG-12 5809-6	
Grouping	Analyte					
WATER						
Dissolved Metals	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0050 ^{DLA}	<0.0010
	Zinc (Zn)-Dissolved (mg/L)	0.0133	0.0209	<0.0050	0.299	0.0597 ^{DTC}
Aggregate Organics	BOD (mg/L)	<5.0	<5.0			

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	Description	Sampled Date	Sampled Time	Client ID				
L1204849-6	Water	31-AUG-12		5809-7				
L1204849-8	Water	31-AUG-12		5809-9				
L1204849-9	Water	31-AUG-12		5809-10				
L1204849-10	Water	31-AUG-12		5809-11				
Grouping	Analyte							
WATER								
Dissolved Metals	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	0.0015			
	Zinc (Zn)-Dissolved (mg/L)	0.0597 ^{DTC}	0.0120	0.0113	0.0144			
Aggregate Organics	BOD (mg/L)							

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Duplicate	Chloride (Cl)	DLM	L1204849-1, -2, -3, -4, -6, -8
Duplicate	Cyanide, Weak Acid Diss	DLM	L1204849-1, -10, -5, -6, -8
Matrix Spike	Mercury (Hg)-Total	MS-B	L1204849-1, -10, -2, -3, -4, -5, -6, -8, -9
Matrix Spike	Mercury (Hg)-Total	MS-B	L1204849-1, -10, -2, -3, -4, -5, -6, -8, -9

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLA	Detection Limit Adjusted For required dilution
DLM	Detection Limit Adjusted For Sample Matrix Effects
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RRR	Refer to Report Remarks for issues regarding this analysis

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-COL-VA	Water	Alkalinity by Colourimetric (Automated)	EPA 310.2
This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.			
ANIONS-CL-IC-VA	Water	Chloride by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
ANIONS-SO4-IC-VA	Water	Sulfate by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
BOD5-VA	Water	Biochemical Oxygen Demand- 5 day	APHA 5210 B- "BIOCHEMICAL OXYGEN DEMAND"
This analysis is carried out using procedures adapted from APHA Method 5210 B - "Biochemical Oxygen Demand (BOD)". All forms of biochemical oxygen demand (BOD) are determined by diluting and incubating a sample for a specified time period, and measuring the oxygen depletion using a dissolved oxygen meter. Dissolved BOD (SOLUBLE) is determined by filtering the sample through a glass fibre filter prior to dilution. Carbonaceous BOD (CBOD) is determined by adding a nitrification inhibitor to the diluted sample prior to incubation.			
BOD5-VA	Water	Biochemical Oxygen Demand- 5 day	APHA 5210 B- BIOCHEMICAL OXYGEN DEMAND
This analysis is carried out using procedures adapted from APHA Method 5210 B - "Biochemical Oxygen Demand (BOD)". All forms of biochemical oxygen demand (BOD) are determined by diluting and incubating a sample for a specified time period, and measuring the oxygen depletion using a dissolved oxygen meter. Dissolved BOD (SOLUBLE) is determined by filtering the sample through a glass fibre filter prior to dilution. Carbonaceous BOD (CBOD) is determined by adding a nitrification inhibitor to the diluted sample prior to incubation.			
CN-T-CFA-VA	Water	Total Cyanide in water by CFA	ISO 14403:2002
This analysis is carried out using procedures adapted from ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourimetric analysis. Method Limitation: This method is susceptible to interference from thiocyanate (SCN). If SCN is present in the sample, there could be a positive interference with this method, but it would be less than 1% and could be as low as zero.			
CN-T-NAOH-CFA-VA	Soil	Total Cyanide in soil by CFA	ONMOE CN-E3015/ISO 14403:2002
This analysis is carried out using procedures adapted from the Ontario Ministry of Environment CN-E3015 and ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by rotary extraction of the soil with 0.04M Sodium Hydroxide, followed by in-line UV digestion along with sample distillation and final determination by colourimetric analysis.			
CN-WAD-CFA-VA	Water	Weak Acid Diss. Cyanide in water by CFA	APHA 4500-CN CYANIDE
This analysis is carried out using procedures adapted from APHA Method 4500-CN I. "Weak Acid Dissociable Cyanide". Weak Acid Dissociable (WAD) cyanide is determined by in-line sample distillation with final determination by colourimetric analysis.			
CN-WAD-NAOH-CFA-VA	Soil	Weak Acid Diss. Cyanide in soil by CFA	ONMOE CN-E3015/APHA 4500-CN CYANIDE
This analysis is carried out using procedures adapted from the Ontario Ministry of Environment CN-E3015 and APHA Method 4500-CN I. "Weak Acid Dissociable Cyanide". Weak Acid Dissociable (WAD) cyanide is determined by rotary extraction of the soil with 0.04M Sodium Hydroxide, followed by in-line sample distillation with final determination by colourimetric analysis.			
EC-PCT-VA	Water	Conductivity (Automated)	APHA 2510 Auto. Conduc.
This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.			
HARDNESS-CALC-VA	Water	Hardness	APHA 2340B
Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.			

Reference Information

HG-200.2-CVAF-VA	Soil	Mercury in Soil by CVAFS	EPA 200.2/245.7
<p>This analysis is carried out using procedures from CSR Analytical Method: "Strong Acid Leachable Metals (SALM) in Soil", BC Ministry of Environment, 26 June 2009, and procedures adapted from EPA Method 200.2. The sample is manually homogenized, dried at 60 degrees Celsius, sieved through a 2 mm (10 mesh) sieve (this sieve step is omitted for international soil samples), and a representative subsample of the dry material is weighed. The sample is then digested at 95 degrees Celsius for 2 hours by block digester using concentrated nitric and hydrochloric acids. Instrumental analysis is by atomic fluorescence spectrophotometry (EPA Method 245.7).</p>			
<p>Method Limitation: This method is not a total digestion technique. It is a very strong acid digestion that is intended to dissolve those metals that may be environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.</p>			
HG-DIS-LOW-CVAFS-VA	Water	Dissolved Mercury in Water by CVAFS(Low)	EPA SW-846 3005A & EPA 245.7
<p>This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by filtration (EPA Method 3005A) and involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).</p>			
HG-TOT-LOW-CVAFS-VA	Water	Total Mercury in Water by CVAFS(Low)	EPA 245.7
<p>This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).</p>			
MET-200.2-CCMS-VA	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A
<p>This analysis is carried out using procedures from CSR Analytical Method: "Strong Acid Leachable Metals (SALM) in Soil", BC Ministry of Environment, 26 June 2009, and procedures adapted from EPA Method 200.2. The sample is manually homogenized, dried at 60 degrees Celsius, sieved through a 2 mm (10 mesh) sieve (this sieve step is omitted for international soil samples), and a representative subsample of the dry material is weighed. The sample is then digested at 95 degrees Celsius for 2 hours by block digester using concentrated nitric and hydrochloric acids. Instrumental analysis of the digested extract is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).</p>			
<p>Method Limitation: This method is not a total digestion technique. It is a very strong acid digestion that is intended to dissolve those metals that may be environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.</p>			
MET-DIS-CCME-MS-VA	Water	Diss. Metals in Water by ICPMS (CCME)	EPA SW-846 3005A/6020A
<p>This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).</p>			
MET-DIS-ICP-VA	Water	Dissolved Metals in Water by ICPOES	EPA SW-846 3005A/6010B
<p>This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves filtration (EPA Method 3005A) and analysis by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).</p>			
MET-TOT-CCME-MS-VA	Water	Total Metals in Water by ICPMS (CCME)	EPA SW-846 3005A/6020A
<p>This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).</p>			
MET-TOT-ICP-VA	Water	Total Metals in Water by ICPOES	EPA SW-846 3005A/6010B
<p>This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).</p>			
MOISTURE-VA	Soil	Moisture content	ASTM D2974-00 Method A
<p>This analysis is carried out gravimetrically by drying the sample at 105 C for a minimum of six hours.</p>			
PH-1:2-VA	Soil	pH in Soil (1:2 Soil:Water Extraction)	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL
<p>This analysis is carried out in accordance with procedures described in the pH, Electrometric in Soil and Sediment method - Section B Physical/Inorganic and Misc. Constituents, BC Environmental Laboratory Manual 2007. The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water. The pH of the solution is then measured using a standard pH probe.</p>			
PH-PCT-VA	Water	pH by Meter (Automated)	APHA 4500-H "pH Value"

Reference Information

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H pH Value

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

TSS-VA Water Total Suspended Solids by Gravimetric APHA 2540 D - GRAVIMETRIC

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, TSS is determined by drying the filter at 104 degrees celsius.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

10-239570 10-239571

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

mg/kg - milligrams per kilogram based on dry weight of sample.

mg/kg wwt - milligrams per kilogram based on wet weight of sample.

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.

mg/L - milligrams per litre.

< - Less than.

D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



L1204849-COFC

10-239570



Environmental

Chain of Custody / Analytical Request Form
Canada-Toll Free: 1-800-668-9878
www.alsglobal.com

Page ___ of ___

Report To: Sable Resources Ltd
Report Format / Distribution: Standard X Other (specify):
Service Request: (Rush subject to availability - Contact ALS to confirm TAT)
Company:
Contact:
Address:
Phone: 604-685-8565 Fax:
Email 1: Joel.gillham@gmail.com
Email 2: SableLtd@telus.net

Invoice To: Same as Report? (circle) Yes or No (If No, provide details)
Copy of Invoice with Report? (circle) Yes or No
Client / Project Information: Job #: August 5809
PO / AFE:
LSD:
Quote #:
Analysis Request: (Indicate Filtered or Preserved, F/P)

Lab Work Order # (lab use only): L1204849
ALS Contact:
Sampler: N. Candemir

Table with columns: Sample #, Sam (This description), Date (dd-mmm-yy), Time (hh:mm), Sample Type, Sp. Conductivity, Hardness, pH, Total Susp. Solids, Alkalinity, Chloride, Sulfate, Cyanide, total + weak acid dis., E. Coli, BOD 5/20, Total Metals ICPMS, Dis. Metals ICPMS, Number of Containers. Rows 1-10 with handwritten data.

Short Holding Time
Rush Processing

Special Instructions / Regulation with water or land use (CCME - Freshwater Aquatic Life/BC CSR-Commercial/AB Tier 1-Natural/ETC) / Hazardous Details

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.

By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

SHIPMENT RELEASE (client use) / SHIPMENT RECEPTION (lab use only) / SHIPMENT VERIFICATION (lab use only)
Released by: Date: Time: Received by: Brittany Date: Sept. 5 Time: 9:40 Temperature: 5.6 °C Verified by: Date: Time: Observations: Yes / No? If Yes add SIF



Sample Receipt Confirmation

Report Distribution:

Company Name: SABLE RESOURCES LTD.
Contact: Joel Gillham
Address: 1290 - 625 Howe Street,
 Vancouver, BC, V6C 2T6
Phone: 604-685-8565
Fax: 604-685-7625
Email: sableltd@telus.net
 shasta@sableresources.com
 joel.gillham@gmail.com
Report Name: CROSSTAB_ALS
Digital Type: --
Digital Email: --
Distribution: Hard Copy: Y Email: Y Fax: N

Invoice Distribution:

Acct Name: SABLE RESOURCES LTD.
Contact: Accounts Payable
Address: 1290 - 625 Howe Street,
 Vancouver, BC, V6C 2T6
Phone: 604-685-8565
Fax: 604-685-7625
Invoice Email: --
Project #: N/A
Account #: SAB100

Client Information:

Job Reference #: 8467-SEP
Project PO #:
Legal Site Description: N/A
Quote #: N/A
Date Sampled: 29-AUG-12
Date Received: 04-OCT-12
Sampled By:
Chain Of Custody: 10-272795

Workorder Summary:

Lab Work Order #: L1219327
Estimated completion date: 16-OCT-12
3 Samples received at ALS in: VANCOUVER
Client Job #: 8467-SEP
Account Manager: Selam Worku
Estimated sample disposal date: 15-NOV-12

Lab Sample ID	Client Sample ID	Date Sampled	Date Received	Sample Due Date	Priority Flag	Sample Type
L1219327-1	8467-1	29-AUG-12 00:00	04-OCT-12 09:50	16-OCT-12		water
L1219327-2	8467-2	29-AUG-12 00:00	04-OCT-12 09:50	16-OCT-12		water
L1219327-3	8467-3	29-AUG-12 00:00	04-OCT-12 09:50	16-OCT-12		water

Analysis Requested:

	Alkalinity by Colourimetric [Automated]	Chloride by Ion Chromatography	Nitrite in Water by Ion Chromatography	Nitrate in Water by Ion Chromatography	Sulfate by Ion Chromatography	Conductivity [Automated]	Diss. Metals in Water [CCME/BCWQG] + ICP	Total Metals in Water [CCME/BCWQG] + ICP	Ammonia in Water by Fluorescence	Un-Ionized Ammonia	pH by Meter [Automated]	Total Suspended Solids by Gravimetric	Sample Handling and Disposal Fee
8467-1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
8467-2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
8467-3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Hold Time Exceedences:

The following samples have exceeded recommended holding times prior to sample receipt.

Analysis Requested	Lab Sample ID	Recommended Hold Time	Date Sampled	Date Received
Dissolved Mercury in Water by CVAf	L1219327-1, 2, 3	28 days	29-AUG-12	04-OCT-12
Alkalinity by Colourimetric (Automate	L1219327-1, 2, 3	14 days	29-AUG-12	04-OCT-12



Hold Time Exceedences:

Analysis Requested	Lab Sample ID	Recommended Hold Time	Date Sampled	Date Received
Sulfate by Ion Chromatography	L1219327-1, 2, 3	28 days	29-AUG-12	04-OCT-12
Nitrate in Water by Ion Chromatogra	L1219327-1, 2, 3	3 days	29-AUG-12	04-OCT-12
Ammonia in Water by Fluorescence	L1219327-1, 2, 3	28 days	29-AUG-12	04-OCT-12
pH by Meter (Automated)	L1219327-1, 2, 3	0.25 hours	29-AUG-12	04-OCT-12
Chloride by Ion Chromatography	L1219327-1, 2, 3	28 days	29-AUG-12	04-OCT-12
Conductivity (Automated)	L1219327-1, 2, 3	28 days	29-AUG-12	04-OCT-12
Total Mercury in Water by CVAFS(L	L1219327-1, 2, 3	28 days	29-AUG-12	04-OCT-12
Nitrite in Water by Ion Chromatograp	L1219327-1, 2, 3	3 days	29-AUG-12	04-OCT-12
Total Suspended Solids by Gravimet	L1219327-1, 2, 3	7 days	29-AUG-12	04-OCT-12

Sample Integrity Observations: No observations were identified for this work order submission.

ALS Group strives to deliver on-time results to our clients at all times. However, there are times when due to capacity issues or other unforeseen circumstances we are unable to meet our expected turnaround times. The information above is related to a recent workorder you have submitted to our laboratory. In the event that you have an inquiry, please refer to the Lab Work Order # when calling your Account Manager.



SABLE RESOURCES LTD.
ATTN: Joel Gillham
1290 - 625 Howe Street
Vancouver BC V6C 2T6

Date Received: 04-OCT-12
Report Date: 19-OCT-12 16:27 (MT)
Version: FINAL

Client Phone: 604-685-8565

Certificate of Analysis

Lab Work Order #: L1219369
Project P.O. #: NOT SUBMITTED
Job Reference: 5809-SEP.
C of C Numbers: 10-272796
Legal Site Desc:

Comments: Please note that E. Coli. cannot be analyzed as appropriate bottles were not received for L1219369-1, -2, and -3.

Selam Worku
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 8081 Lougheed Hwy, Suite 100, Burnaby, BC V5A 1W9 Canada | Phone: +1 604 253 4188 | Fax: +1 604 253 6700
ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID	L1219369-7 water 29-SEP-12 5809-8				
Grouping	Analyte				
SOIL					
Physical Tests	Moisture (%)	7.57			
	pH (1:2 soil:water) (pH)	9.96			
Cyanides	Cyanide, Weak Acid Diss (mg/kg)	265			
	Cyanide, Total (mg/kg)	335			
Metals	Aluminum (Al) (mg/kg)	962			
	Antimony (Sb) (mg/kg)	72.4			
	Arsenic (As) (mg/kg)	315			
	Barium (Ba) (mg/kg)	1.86			
	Beryllium (Be) (mg/kg)	<0.20			
	Bismuth (Bi) (mg/kg)	3.67			
	Cadmium (Cd) (mg/kg)	66.2			
	Calcium (Ca) (mg/kg)	2820			
	Chromium (Cr) (mg/kg)	1.52			
	Cobalt (Co) (mg/kg)	135			
	Copper (Cu) (mg/kg)	2820			
	Iron (Fe) (mg/kg)	374000			
	Lead (Pb) (mg/kg)	2380			
	Lithium (Li) (mg/kg)	<5.0			
	Magnesium (Mg) (mg/kg)	532			
	Manganese (Mn) (mg/kg)	161			
	Mercury (Hg) (mg/kg)	0.931			
	Molybdenum (Mo) (mg/kg)	64.1			
	Nickel (Ni) (mg/kg)	45.9			
	Phosphorus (P) (mg/kg)	153			
	Potassium (K) (mg/kg)	260			
	Selenium (Se) (mg/kg)	11.5			
	Silver (Ag) (mg/kg)	57.8			
	Sodium (Na) (mg/kg)	1810			
	Strontium (Sr) (mg/kg)	3.76			
	Thallium (Tl) (mg/kg)	0.668			
	Tin (Sn) (mg/kg)	<2.0			
	Titanium (Ti) (mg/kg)	54.0			
	Uranium (U) (mg/kg)	0.551			
	Vanadium (V) (mg/kg)	3.25			
Zinc (Zn) (mg/kg)	6090				

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID	L1219369-1 water 29-SEP-12 5809-1	L1219369-2 water 29-SEP-12 5809-2	L1219369-3 water 29-SEP-12 5809-3	L1219369-4 water 29-SEP-12 5809-4	L1219369-5 water 29-SEP-12 5809-6	
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	201	286	158	1700	460
	Hardness (as CaCO3) (mg/L)	104	187	76.4	1170	79.1
	pH (pH)	7.51	7.66	7.80	7.77	8.08
	Total Suspended Solids (mg/L)	<3.0	<3.0	<3.0	47.0	442000 ^{DLHS}
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	15.8	26.8	6.8	105	42.3
	Ammonia, Total (as N) (mg/L)	0.111	0.0861	<0.0050		
	Chloride (Cl) (mg/L)	<0.50	<0.50	<0.50	<10 ^{DLM}	
	Nitrate (as N) (mg/L)	0.0099	0.0147	0.0408		
	Nitrite (as N) (mg/L)	<0.0010	0.0018	<0.0010		
	Orthophosphate-Dissolved (as P) (mg/L)	<0.0010	<0.0010	<0.0010		
	Phosphorus (P)-Total (mg/L)	<0.0020	0.0080	<0.0020		
	Sulfate (SO4) (mg/L)	81.2	117	43.8	1090	
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050		<0.0050		3.02
	Cyanide, Total (mg/L)	<0.0050		<0.0050		3.61
Total Metals	Aluminum (Al)-Total (mg/L)	0.0413	0.0449	0.0096	0.159	305
	Antimony (Sb)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.0010 ^{DLA}	<0.025 ^{DLA}
	Arsenic (As)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.0010 ^{DLA}	0.146
	Barium (Ba)-Total (mg/L)	<0.020	<0.020	<0.020	<0.020	2.97
	Beryllium (Be)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	<0.050 ^{DLA}
	Bismuth (Bi)-Total (mg/L)	<0.20	<0.20	<0.20	<0.20	<2.0
	Boron (B)-Total (mg/L)	<0.10	<0.10	<0.10	<0.10	2.0
	Cadmium (Cd)-Total (mg/L)	0.000177	0.000163 ^{DTC}	0.000036	0.00164	0.0788
	Calcium (Ca)-Total (mg/L)	32.3	52.5	25.7	406	5360
	Chromium (Cr)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	0.631
	Cobalt (Co)-Total (mg/L)	<0.00030	0.00408	<0.00030	0.0989	0.171
	Copper (Cu)-Total (mg/L)	<0.0010	0.0025 ^{DTC}	<0.0010	0.0073	1.98
	Iron (Fe)-Total (mg/L)	<0.030	0.283 ^{DTC}	<0.030	4.52 ^{DTC}	700
	Lead (Pb)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.0010 ^{DLA}	8.39
	Lithium (Li)-Total (mg/L)	<0.0050	<0.0050	<0.0050	0.026	0.32
	Magnesium (Mg)-Total (mg/L)	5.15	5.31	2.61	33.9	149
	Manganese (Mn)-Total (mg/L)	0.00558	0.150	0.00560	3.91	160
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.0010
	Molybdenum (Mo)-Total (mg/L)	<0.0010	<0.0010	0.0035	0.0031	0.108
	Nickel (Ni)-Total (mg/L)	0.0022	0.0052	<0.0010	0.0915	0.364
	Phosphorus (P)-Total (mg/L)	<0.30	<0.30	<0.30	<0.30	26.7
	Potassium (K)-Total (mg/L)	<2.0	<2.0	<2.0	<2.0	118
Selenium (Se)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	<0.050 ^{DLA}	

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	Description	L1219369-6	L1219369-8	L1219369-9	L1219369-10
Sampled Date	Sampled Time	water 29-SEP-12	water 29-SEP-12	water 29-SEP-12	water 29-SEP-12
Client ID	5809-7	5809-9	5809-10	5809-11	
Grouping	Analyte				
WATER					
Physical Tests	Conductivity (uS/cm)	500	223	257	194
	Hardness (as CaCO3) (mg/L)	230	124	93.5	112
	pH (pH)	7.89	7.74	7.86	7.79
	Total Suspended Solids (mg/L)	50.3	<3.0	4370	2450
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	93.5	31.2	59.5	36.9
	Ammonia, Total (as N) (mg/L)		0.682		0.105
	Chloride (Cl) (mg/L)	1.44	<0.50		
	Nitrate (as N) (mg/L)		0.0308		0.0416
	Nitrite (as N) (mg/L)		<0.0010		0.0031
	Orthophosphate-Dissolved (as P) (mg/L)		<0.0010		
	Phosphorus (P)-Total (mg/L)		0.0032		
	Sulfate (SO4) (mg/L)	155	80.1		
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050	<0.0050		<0.0050
	Cyanide, Total (mg/L)	<0.0050	<0.0050		<0.0050
Total Metals	Aluminum (Al)-Total (mg/L)	0.0337	0.0286	13.7	3.56
	Antimony (Sb)-Total (mg/L)	<0.00050	<0.00050	0.00399	<0.00050
	Arsenic (As)-Total (mg/L)	0.00092	<0.00050	0.00296	<0.00050
	Barium (Ba)-Total (mg/L)	0.032	<0.020	0.444	0.079
	Beryllium (Be)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010
	Bismuth (Bi)-Total (mg/L)	<0.20	<0.20	<0.20	<0.20
	Boron (B)-Total (mg/L)	0.31	<0.10	0.34	<0.10
	Cadmium (Cd)-Total (mg/L)	0.000048	0.000097	0.000401	0.000103
	Calcium (Ca)-Total (mg/L)	83.6	38.7	34.2	32.2
	Chromium (Cr)-Total (mg/L)	<0.0010	<0.0010	0.0053	0.0011
	Cobalt (Co)-Total (mg/L)	0.00412	0.00202	0.00446	0.00038
	Copper (Cu)-Total (mg/L)	0.0030	0.0016	0.121	0.0045
	Iron (Fe)-Total (mg/L)	0.050	0.143	13.4	2.27
	Lead (Pb)-Total (mg/L)	0.00234	<0.00050	0.536	0.0252
	Lithium (Li)-Total (mg/L)	<0.0050	<0.0050	0.0140	<0.0050
	Magnesium (Mg)-Total (mg/L)	5.57	3.94	7.55	4.42
	Manganese (Mn)-Total (mg/L)	0.0469	0.0750	1.18	0.272
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	0.000021	<0.000010
	Molybdenum (Mo)-Total (mg/L)	0.0028	0.0021	0.0516	0.0015
	Nickel (Ni)-Total (mg/L)	<0.0010	0.0027	0.0125	0.0013
	Phosphorus (P)-Total (mg/L)	<0.30	<0.30	<0.30	<0.30
	Potassium (K)-Total (mg/L)	2.8	<2.0	32.1	3.8
Selenium (Se)-Total (mg/L)	<0.0010	<0.0010	0.0027	<0.0010	

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID	L1219369-1 water 29-SEP-12 5809-1	L1219369-2 water 29-SEP-12 5809-2	L1219369-3 water 29-SEP-12 5809-3	L1219369-4 water 29-SEP-12 5809-4	L1219369-5 water 29-SEP-12 5809-6	
Grouping	Analyte					
WATER						
Total Metals	Silicon (Si)-Total (mg/L)	4.38	4.74	3.75	8.85	236
	Silver (Ag)-Total (mg/L)	<0.000020	<0.000020	<0.000020	<0.000040 ^{DLA}	0.248
	Sodium (Na)-Total (mg/L)	<2.0	2.0	<2.0	6.1	32
	Strontium (Sr)-Total (mg/L)	0.0935	0.137	0.0734	0.977	6.56
	Thallium (Tl)-Total (mg/L)	<0.00020	<0.00020	<0.00020	<0.00040 ^{DLA}	<0.010 ^{DLA}
	Tin (Sn)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.0010 ^{DLA}	<0.025 ^{DLA}
	Titanium (Ti)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010	0.21
	Uranium (U)-Total (mg/L)	<0.00020	<0.00020	0.00040	<0.00040 ^{DLA}	0.018
	Vanadium (V)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	0.313
	Zinc (Zn)-Total (mg/L)	0.0068	0.0155	<0.0050	0.203	14.5
Dissolved Metals	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	LAB
	Aluminum (Al)-Dissolved (mg/L)	0.0368	0.0329	0.0142	0.019	0.191
	Antimony (Sb)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.0010 ^{DLA}	0.0110
	Arsenic (As)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.0010 ^{DLA}	0.00083 ^{DLA}
	Barium (Ba)-Dissolved (mg/L)	<0.020	<0.020	<0.020	<0.020 ^{DLA}	<0.20
	Beryllium (Be)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	<0.0010 ^{DLA}
	Bismuth (Bi)-Dissolved (mg/L)	<0.20	<0.20	<0.20	<0.20	<2.0
	Boron (B)-Dissolved (mg/L)	<0.10	<0.10	<0.10	<0.10	2.4 ^{DLM}
	Cadmium (Cd)-Dissolved (mg/L)	0.000191	0.000170 ^{DTC}	0.000041	0.00185	<0.000051
	Calcium (Ca)-Dissolved (mg/L)	33.2	64.8	26.3	414	27.8
	Chromium (Cr)-Dissolved (mg/L)	<0.0010	<0.0010 ^{DTC}	<0.0010	<0.0020 ^{DLA}	<0.0010
	Cobalt (Co)-Dissolved (mg/L)	0.00032	0.00689 ^{DTC}	<0.00030	0.0976	0.00966
	Copper (Cu)-Dissolved (mg/L)	0.0011	0.0018 ^{DTC}	<0.0010	0.0037 ^{DTC}	0.0788 ^{DLA}
	Iron (Fe)-Dissolved (mg/L)	<0.030	0.500 ^{DTC}	0.031	11.3 ^{DTC}	<0.30 ^{DLA}
	Lead (Pb)-Dissolved (mg/L)	<0.00050	0.00067	<0.00050	<0.0010 ^{DLA}	0.00401
	Lithium (Li)-Dissolved (mg/L)	<0.0050	<0.0050	<0.0050	0.025	0.0262
	Magnesium (Mg)-Dissolved (mg/L)	5.13	6.09 ^{DTC}	2.61	34.1	2.4
	Manganese (Mn)-Dissolved (mg/L)	0.00938 ^{DTC}	0.257 ^{DTC}	0.00637	3.90	0.0616
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000050
	Molybdenum (Mo)-Dissolved (mg/L)	<0.0010	<0.0010 ^{DTC}	0.0033	0.0035	0.118
	Nickel (Ni)-Dissolved (mg/L)	0.0021	0.0077 ^{DTC}	<0.0010	0.0907	0.147 ^{DLA}
	Phosphorus (P)-Dissolved (mg/L)	<0.30	<0.30	<0.30	<0.30	<3.0
	Potassium (K)-Dissolved (mg/L)	<2.0	<2.0	<2.0	<2.0	53
	Selenium (Se)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	0.0228
	Silicon (Si)-Dissolved (mg/L)	4.38	4.79 ^{DTC}	3.77	9.51	3.91
	Silver (Ag)-Dissolved (mg/L)	<0.000020	0.000166 ^{DTC}	0.000038	0.000041	0.00234
	Sodium (Na)-Dissolved (mg/L)	<2.0	2.1	<2.0	6.0	27

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	Description	L1219369-6	L1219369-8	L1219369-9	L1219369-10
Sampled Date	Sampled Time	water 29-SEP-12	water 29-SEP-12	water 29-SEP-12	water 29-SEP-12
Client ID	5809-7	5809-9	5809-10	5809-11	
Grouping	Analyte				
WATER					
Total Metals	Silicon (Si)-Total (mg/L)	0.216	4.21	54.8	13.6
	Silver (Ag)-Total (mg/L)	0.000482	<0.000020	0.125 ^{RRR}	0.0119
	Sodium (Na)-Total (mg/L)	19.1	<2.0	10.8	2.2
	Strontium (Sr)-Total (mg/L)	0.222	0.106	0.216	0.109
	Thallium (Tl)-Total (mg/L)	<0.00020	<0.00020	0.00036	<0.00020
	Tin (Sn)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050
	Titanium (Ti)-Total (mg/L)	<0.010	<0.010	0.165	0.046
	Uranium (U)-Total (mg/L)	0.00367	0.00026	0.00068	<0.00020
	Vanadium (V)-Total (mg/L)	<0.0010	<0.0010	0.0167	0.0048
	Zinc (Zn)-Total (mg/L)	<0.0050	0.0095	0.924	0.0519
Dissolved Metals	Dissolved Metals Filtration Location	LAB	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0151	0.0334	2.12	1.57
	Antimony (Sb)-Dissolved (mg/L)	<0.00050	<0.00050	0.00429	<0.00050
	Arsenic (As)-Dissolved (mg/L)	0.00085	<0.00050	0.00062	<0.00050
	Barium (Ba)-Dissolved (mg/L)	0.032	<0.020	0.095	0.071
	Beryllium (Be)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010
	Bismuth (Bi)-Dissolved (mg/L)	<0.20	<0.20	<0.20	<0.20
	Boron (B)-Dissolved (mg/L)	0.32	<0.10	0.35	<0.10
	Cadmium (Cd)-Dissolved (mg/L)	0.000044	0.000055	0.000092	0.000056
	Calcium (Ca)-Dissolved (mg/L)	83.0	42.7	32.8	37.4
	Chromium (Cr)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	0.0010
	Cobalt (Co)-Dissolved (mg/L)	0.00373	0.00229	0.00284	<0.00030
	Copper (Cu)-Dissolved (mg/L)	0.0024	<0.0010	0.0962	0.0048
	Iron (Fe)-Dissolved (mg/L)	<0.030	0.047	1.44	2.06
	Lead (Pb)-Dissolved (mg/L)	0.00135	0.00124	0.0557	0.0367 ^{DTC}
	Lithium (Li)-Dissolved (mg/L)	<0.0050	<0.0050	0.0064	<0.0050
	Magnesium (Mg)-Dissolved (mg/L)	5.64	4.19	2.84	4.40
	Manganese (Mn)-Dissolved (mg/L)	0.0456	0.0951 ^{DTC}	0.264	0.254
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Dissolved (mg/L)	0.0028	0.0019	0.0481	<0.0010
	Nickel (Ni)-Dissolved (mg/L)	<0.0010	0.0029	0.0110	0.0015
	Phosphorus (P)-Dissolved (mg/L)	<0.30	<0.30	<0.30	<0.30
	Potassium (K)-Dissolved (mg/L)	2.9	<2.0	21.8	3.2
	Selenium (Se)-Dissolved (mg/L)	<0.0010	<0.0010	0.0019	<0.0010
	Silicon (Si)-Dissolved (mg/L)	0.228	4.34	12.0	14.2
	Silver (Ag)-Dissolved (mg/L)	0.000250	0.000022	0.0134	0.00387
	Sodium (Na)-Dissolved (mg/L)	19.3	<2.0	12.5	2.3

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1219369-1 water 29-SEP-12 5809-1	L1219369-2 water 29-SEP-12 5809-2	L1219369-3 water 29-SEP-12 5809-3	L1219369-4 water 29-SEP-12 5809-4	L1219369-5 water 29-SEP-12 5809-6
Grouping	Analyte					
WATER						
Dissolved Metals	Strontium (Sr)-Dissolved (mg/L)	0.0933	0.161	0.0725	0.955	0.395
	Thallium (Tl)-Dissolved (mg/L)	<0.00020	<0.00020	<0.00020	<0.00040 ^{DLA}	<0.00020
	Tin (Sn)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.0010 ^{DLA}	<0.00050 ^{DLA}
	Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.010	<0.010	<0.010 ^{DLA}	<0.10 ^{DLA}
	Uranium (U)-Dissolved (mg/L)	<0.00020	<0.00020	0.00039	<0.00040 ^{DLA}	<0.00020
	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	<0.0010 ^{DLA}
	Zinc (Zn)-Dissolved (mg/L)	0.0107	0.0201	<0.0050	0.217	<0.050 ^{DLA}
Aggregate Organics	BOD (mg/L)	<5.0	<5.0			

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	Description	Sampled Date	Sampled Time	Client ID				
L1219369-6	water	29-SEP-12		5809-7				
L1219369-8	water	29-SEP-12		5809-9				
L1219369-9	water	29-SEP-12		5809-10				
L1219369-10	water	29-SEP-12		5809-11				
Grouping	Analyte							
WATER								
Dissolved Metals	Strontium (Sr)-Dissolved (mg/L)	0.226	0.112	0.202	0.116			
	Thallium (Tl)-Dissolved (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020			
	Tin (Sn)-Dissolved (mg/L)	<0.00050	<0.00050	0.00201 ^{DTC}	<0.00050			
	Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.010	0.049	0.055			
	Uranium (U)-Dissolved (mg/L)	0.00363	0.00027	0.00038	<0.00020			
	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.0010	0.0029	0.0022			
	Zinc (Zn)-Dissolved (mg/L)	<0.0050	0.0109	0.148	0.0633			
Aggregate Organics	BOD (mg/L)							

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Duplicate	Nitrite (as N)	DLM	L1219369-1, -10, -2, -3, -8
Duplicate	Nitrite (as N)	DLM	L1219369-1, -10, -2, -3, -8
Duplicate	Nitrate (as N)	DLM	L1219369-1, -10, -2, -3, -8
Duplicate	Nitrite (as N)	DLM	L1219369-1, -10, -2, -3, -8
Duplicate	Nitrate (as N)	DLM	L1219369-1, -10, -2, -3, -8
Duplicate	Mercury (Hg)	DUP-H	L1219369-7
Duplicate	Copper (Cu)	DUP-H	L1219369-7
Duplicate	Lead (Pb)	DUP-H	L1219369-7
Duplicate	Cadmium (Cd)	DUP-H	L1219369-7
Duplicate	Manganese (Mn)	DUP-H	L1219369-7
Matrix Spike	Boron (B)-Dissolved	MS-B	L1219369-1, -10, -2, -3, -4, -8, -9
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1219369-1, -10, -2, -3, -4, -8, -9
Matrix Spike	Magnesium (Mg)-Dissolved	MS-B	L1219369-1, -10, -2, -3, -4, -8, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1219369-1, -10, -2, -3, -4, -8, -9
Matrix Spike	Orthophosphate-Dissolved (as P)	MS-B	L1219369-1
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1219369-1, -10, -2, -3, -4, -8, -9
Matrix Spike	Magnesium (Mg)-Dissolved	MS-B	L1219369-1, -10, -2, -3, -4, -8, -9
Matrix Spike	Phosphorus (P)-Total	MS-B	L1219369-1, -2, -3, -8
Matrix Spike	Phosphorus (P)-Total	MS-B	L1219369-1, -2, -3, -8
Matrix Spike	Boron (B)-Dissolved	MS-B	L1219369-1, -10, -2, -3, -4, -8, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1219369-1, -10, -2, -3, -4, -8, -9
Matrix Spike	Aluminum (Al)-Total	MS-B	L1219369-6
Matrix Spike	Cadmium (Cd)-Total	MS-B	L1219369-6
Matrix Spike	Copper (Cu)-Total	MS-B	L1219369-6
Matrix Spike	Lead (Pb)-Total	MS-B	L1219369-6
Matrix Spike	Manganese (Mn)-Total	MS-B	L1219369-6
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1219369-1, -10, -2, -3, -4, -8, -9
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1219369-5, -6
Matrix Spike	Magnesium (Mg)-Dissolved	MS-B	L1219369-5, -6
Matrix Spike	Calcium (Ca)-Total	MS-B	L1219369-6

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLA	Detection Limit Adjusted For required dilution
DLHS	Detection Limit Adjusted: Insufficient volume; sample contains high sediment limiting volume analyzed.
DLM	Detection Limit Adjusted For Sample Matrix Effects
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RRR	Refer to Report Remarks for issues regarding this analysis

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-COL-VA	Water	Alkalinity by Colourimetric (Automated)	EPA 310.2
This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.			
ALK-PCT-VA	Water	Alkalinity by Auto. Titration	APHA 2320 "Alkalinity"
This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.			
ALK-PCT-VA	Water	Alkalinity by Auto. Titration	APHA 2320 Alkalinity
This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.			

Reference Information

ANIONS-CL-IC-VA	Water	Chloride by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
ANIONS-NO2-IC-VA	Water	Nitrite in Water by Ion Chromatography	EPA 300.0
This analysis is carried out using procedures adapted from EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Nitrite is detected by UV absorbance.			
ANIONS-NO3-IC-VA	Water	Nitrate in Water by Ion Chromatography	EPA 300.0
This analysis is carried out using procedures adapted from EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Nitrate is detected by UV absorbance.			
ANIONS-SO4-IC-VA	Water	Sulfate by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
BOD5-VA	Water	Biochemical Oxygen Demand- 5 day	APHA 5210 B- "BIOCHEMICAL OXYGEN DEMAND"
This analysis is carried out using procedures adapted from APHA Method 5210 B - "Biochemical Oxygen Demand (BOD)". All forms of biochemical oxygen demand (BOD) are determined by diluting and incubating a sample for a specified time period, and measuring the oxygen depletion using a dissolved oxygen meter. Dissolved BOD (SOLUBLE) is determined by filtering the sample through a glass fibre filter prior to dilution. Carbonaceous BOD (CBOD) is determined by adding a nitrification inhibitor to the diluted sample prior to incubation.			
BOD5-VA	Water	Biochemical Oxygen Demand- 5 day	APHA 5210 B- BIOCHEMICAL OXYGEN DEMAND
This analysis is carried out using procedures adapted from APHA Method 5210 B - "Biochemical Oxygen Demand (BOD)". All forms of biochemical oxygen demand (BOD) are determined by diluting and incubating a sample for a specified time period, and measuring the oxygen depletion using a dissolved oxygen meter. Dissolved BOD (SOLUBLE) is determined by filtering the sample through a glass fibre filter prior to dilution. Carbonaceous BOD (CBOD) is determined by adding a nitrification inhibitor to the diluted sample prior to incubation.			
CN-T-CFA-VA	Water	Total Cyanide in water by CFA	ISO 14403:2002
This analysis is carried out using procedures adapted from ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourimetric analysis. Method Limitation: This method is susceptible to interference from thiocyanate (SCN). If SCN is present in the sample, there could be a positive interference with this method, but it would be less than 1% and could be as low as zero.			
CN-T-NAOH-CFA-VA	Soil	Total Cyanide in soil by CFA	ONMOE CN-E3015/ISO 14403:2002
This analysis is carried out using procedures adapted from the Ontario Ministry of Environment CN-E3015 and ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by rotary extraction of the soil with 0.04M Sodium Hydroxide, followed by in-line UV digestion along with sample distillation and final determination by colourimetric analysis.			
CN-WAD-CFA-VA	Water	Weak Acid Diss. Cyanide in water by CFA	APHA 4500-CN CYANIDE
This analysis is carried out using procedures adapted from APHA Method 4500-CN I. "Weak Acid Dissociable Cyanide". Weak Acid Dissociable (WAD) cyanide is determined by in-line sample distillation with final determination by colourimetric analysis.			
CN-WAD-NAOH-CFA-VA	Soil	Weak Acid Diss. Cyanide in soil by CFA	ONMOE CN-E3015/APHA 4500-CN CYANIDE
This analysis is carried out using procedures adapted from the Ontario Ministry of Environment CN-E3015 and APHA Method 4500-CN I. "Weak Acid Dissociable Cyanide". Weak Acid Dissociable (WAD) cyanide is determined by rotary extraction of the soil with 0.04M Sodium Hydroxide, followed by in-line sample distillation with final determination by colourimetric analysis.			
EC-PCT-VA	Water	Conductivity (Automated)	APHA 2510 Auto. Conduc.
This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.			
HARDNESS-CALC-VA	Water	Hardness	APHA 2340B
Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.			
HG-200.2-CVAF-VA	Soil	Mercury in Soil by CVAFS	EPA 200.2/245.7
This analysis is carried out using procedures from CSR Analytical Method: "Strong Acid Leachable Metals (SALM) in Soil", BC Ministry of Environment, 26 June 2009, and procedures adapted from EPA Method 200.2. The sample is manually homogenized, dried at 60 degrees Celsius, sieved through a 2 mm (10 mesh) sieve (this sieve step is omitted for international soil samples), and a representative subsample of the dry material is weighed. The sample is then digested at 95 degrees Celsius for 2 hours by block digester using concentrated nitric and hydrochloric acids. Instrumental analysis is by atomic fluorescence spectrophotometry (EPA Method 245.7).			
Method Limitation: This method is not a total digestion technique. It is a very strong acid digestion that is intended to dissolve those metals that may be environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.			
HG-DIS-LOW-CVAFS-VA	Water	Dissolved Mercury in Water by CVAFS(Low)	EPA SW-846 3005A & EPA 245.7
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by filtration (EPA Method 3005A) and involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental			

Reference Information

analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).

HG-TOT-LOW-CVAFS-VA Water Total Mercury in Water by CVAFS(Low) EPA 245.7

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).

MET-200.2-CCMS-VA Soil Metals in Soil by CRC ICPMS EPA 200.2/6020A

This analysis is carried out using procedures from CSR Analytical Method: "Strong Acid Leachable Metals (SALM) in Soil", BC Ministry of Environment, 26 June 2009, and procedures adapted from EPA Method 200.2. The sample is manually homogenized, dried at 60 degrees Celsius, sieved through a 2 mm (10 mesh) sieve (this sieve step is omitted for international soil samples), and a representative subsample of the dry material is weighed. The sample is then digested at 95 degrees Celsius for 2 hours by block digester using concentrated nitric and hydrochloric acids. Instrumental analysis of the digested extract is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).

Method Limitation: This method is not a total digestion technique. It is a very strong acid digestion that is intended to dissolve those metals that may be environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.

MET-DIS-CCME-MS-VA Water Diss. Metals in Water by ICPMS (CCME) EPA SW-846 3005A/6020A

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

MET-DIS-ICP-VA Water Dissolved Metals in Water by ICPOES EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves filtration (EPA Method 3005A) and analysis by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

MET-TOT-CCME-MS-VA Water Total Metals in Water by ICPMS (CCME) EPA SW-846 3005A/6020A

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

MET-TOT-ICP-VA Water Total Metals in Water by ICPOES EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

MOISTURE-VA Soil Moisture content ASTM D2974-00 Method A

This analysis is carried out gravimetrically by drying the sample at 105 C for a minimum of six hours.

NH3-F-VA Water Ammonia in Water by Fluorescence J. ENVIRON. MONIT., 2005, 7, 37-42, RSC

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

P-T-COL-VA Water Total P in Water by Colour APHA 4500-P Phosphorous

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.

PH-1:2-VA Soil pH in Soil (1:2 Soil:Water Extraction) BC WLAP METHOD: PH, ELECTROMETRIC, SOIL

This analysis is carried out in accordance with procedures described in the pH, Electrometric in Soil and Sediment method - Section B Physical/Inorganic and Misc. Constituents, BC Environmental Laboratory Manual 2007. The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water. The pH of the solution is then measured using a standard pH probe.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H "pH Value"

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H pH Value

Reference Information

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

PO4-DO-COL-VA Water Diss. Orthophosphate in Water by Colour APHA 4500-P Phosphorous

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter.

TSS-VA Water Total Suspended Solids by Gravimetric APHA 2540 D - GRAVIMETRIC

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, TSS is determined by drying the filter at 104 degrees celsius.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

10-272796

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

mg/kg - milligrams per kilogram based on dry weight of sample.

mg/kg wwt - milligrams per kilogram based on wet weight of sample.

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.

mg/L - milligrams per litre.

< - Less than.

D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



Report To	Report Format / Distribution	Service Request: (Rush subject to availability - Contact ALS to confirm TAT)
Company: <i>Sable Resources Ltd.</i>	Standard: Other (specify):	<input checked="" type="checkbox"/> Regular (Standard Turnaround Times - Business Days)
Contact:	Select: PDF <input checked="" type="checkbox"/> Excel <input checked="" type="checkbox"/> Digital Fax	<input type="checkbox"/> Priority(2-4 Business Days)-50% surcharge - Contact ALS to confirm TAT
Address: <i>1290 - 625 Howe St</i>	Email 1: <i>doel.gillham@gmail.com</i>	<input type="checkbox"/> Emergency (1-2 Business Days)-100% Surcharge - Contact ALS to confirm TAT
<i>Vancouver BC</i>	Email 2: <i>SableLtd@telus.net</i>	<input type="checkbox"/> Same Day or Weekend Emergency - Contact ALS to confirm TAT
Phone: <i>604 685 8565</i> Fax:		

Invoice To Same as Report? (circle) <input checked="" type="checkbox"/> Yes or No (if No, provide details)	Client / Project Information	Analysis Request																					
Copy of Invoice with Report? (circle) <input checked="" type="checkbox"/> Yes or No	Job #: <i>5809 - Sep.</i>	(Indicate Filtered or Preserved, F/P)																					
Company:	PO / AFE:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
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Lab Work Order # (lab use only)	<i>L1219369</i>	ALS Contact:	Sampler: <i>N. Candemir</i>
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Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	<i>C. Yeast (week end)</i>	<i>Ammonia, Nitrite</i>	<i>Total Phosphorus</i>	<i>Chloride, Sulphate</i>	<i>E. Coli</i>	<i>BOD 5 day total</i>	<i>pH</i>	<i>Spa Conductance</i>	<i>Total Alkalinity</i>	<i>Total Hardness</i>	<i>Total Susp Solids</i>	<i>Total Metals ICPMS</i>	<i>Dissolved Metals ICPMS</i>	Number of Containers
1	5809-1	29-Sep-12			X	X	X	X	X	X	X	X	X	X	X	X	X	
2	5809-2					X	X	X	X	X	X	X	X	X	X	X	X	
3	5809-3				X	X	X	X	X		X	X	X	X	X	X	X	
4	5809-4							X			X	X	X	X	X	X	X	
5	5809-6				X						X	X	X	X	X	X	X	
6	5809-7				X			X			X	X	X	X	X	X	X	
7	5809-8				X											X	X	
8	5809-9				X	X	X	X	X		X	X	X	X	X	X	X	
9	5809-10										X	X	X	X	X	X	X	
10	5809-11				X	X					X	X	X	X	X	X	X	

Rush Processing Short Holding Time

Special Instructions / Regulation with water or land use (CCME - Freshwater Aquatic Life/BC CSR-Commercial/AB Tier 1-Natural/ETC) / Hazardous Details

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.

By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)			
Released by:	Date:	Time:	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
			<i>Br.H</i>	<i>Oct. 4</i>	<i>9:50</i>	<i>6.0 °C</i>				



SABLE RESOURCES LTD.
ATTN: Joel Gillham
1290 - 625 Howe Street
Vancouver BC V6C 2T6

Date Received: 16-OCT-12
Report Date: 26-OCT-12 17:40 (MT)
Version: FINAL

Client Phone: 604-685-8565

Certificate of Analysis

Lab Work Order #: L1224177
Project P.O. #: NOT SUBMITTED
Job Reference: 5809-OCT
C of C Numbers: 10-272797
Legal Site Desc:

Comments: Please note that E. Coli analysis cannot be done on samples #1, 2, and 8 as no appropriate bottles were provided.

Selam Worku
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 8081 Lougheed Hwy, Suite 100, Burnaby, BC V5A 1W9 Canada | Phone: +1 604 253 4188 | Fax: +1 604 253 6700
ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID				
	L1224177-7 Soil 5809-8				
Grouping	Analyte				
SOIL					
Physical Tests	Moisture (%)	2.79			
	pH (1:2 soil:water) (pH)	8.80			
Cyanides	Cyanide, Weak Acid Diss (mg/kg)	<1.0 ^{DLA}			
	Cyanide, Total (mg/kg)	28.4			
Metals	Aluminum (Al) (mg/kg)	1490			
	Antimony (Sb) (mg/kg)	33.1			
	Arsenic (As) (mg/kg)	309			
	Barium (Ba) (mg/kg)	2.43			
	Beryllium (Be) (mg/kg)	<0.20			
	Bismuth (Bi) (mg/kg)	3.57			
	Cadmium (Cd) (mg/kg)	68.3			
	Calcium (Ca) (mg/kg)	5430			
	Chromium (Cr) (mg/kg)	2.14			
	Cobalt (Co) (mg/kg)	129			
	Copper (Cu) (mg/kg)	1860			
	Iron (Fe) (mg/kg)	394000			
	Lead (Pb) (mg/kg)	3200			
	Lithium (Li) (mg/kg)	<5.0			
	Magnesium (Mg) (mg/kg)	862			
	Manganese (Mn) (mg/kg)	276			
	Mercury (Hg) (mg/kg)	0.595			
	Molybdenum (Mo) (mg/kg)	90.8			
	Nickel (Ni) (mg/kg)	42.8			
	Phosphorus (P) (mg/kg)	198			
	Potassium (K) (mg/kg)	440			
	Selenium (Se) (mg/kg)	11.4			
	Silver (Ag) (mg/kg)	68.3			
	Sodium (Na) (mg/kg)	<100			
	Strontium (Sr) (mg/kg)	6.47			
	Thallium (Tl) (mg/kg)	0.680			
	Tin (Sn) (mg/kg)	<2.0			
	Titanium (Ti) (mg/kg)	114			
Uranium (U) (mg/kg)	0.706				
Vanadium (V) (mg/kg)	4.65				
Zinc (Zn) (mg/kg)	5820				

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1224177-1 Water 5809-1	L1224177-2 Water 5809-2	L1224177-3 Water 5809-3	L1224177-4 Water 5809-4	L1224177-5 Water 5809-6
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	203	289	155	1690	509
	Hardness (as CaCO3) (mg/L)	108	150	74.0	1170	83.9
	pH (pH)	7.57	7.68	7.74	7.72	8.00
	Total Suspended Solids (mg/L)	<3.0	<3.0	<3.0	38.4	
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	18.6	25.3	32.2	97.2	103
	Chloride (Cl) (mg/L)	<0.50	<0.50	<0.50	<10 ^{DLM}	
	Sulfate (SO4) (mg/L)	79.5	117	44.6	1100	
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050				<0.0050
	Cyanide, Total (mg/L)	<0.0050				0.0979
Total Metals	Aluminum (Al)-Total (mg/L)	0.0481	0.0485	0.0109	1.27 ^{DLA}	400 ^{DLA}
	Antimony (Sb)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.0010 ^{DLA}	<0.010 ^{DLA}
	Arsenic (As)-Total (mg/L)	<0.00050	<0.00050	<0.00050	0.0010	0.162
	Barium (Ba)-Total (mg/L)	<0.020	<0.020	<0.020	<0.020 ^{DLA}	6.35 ^{DLA}
	Beryllium (Be)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	<0.020 ^{DLA}
	Bismuth (Bi)-Total (mg/L)	<0.20	<0.20	<0.20	<0.20	<0.60 ^{DLA}
	Boron (B)-Total (mg/L)	<0.10	<0.10	<0.10	<0.10	0.78
	Cadmium (Cd)-Total (mg/L)	0.000172	0.000212	0.000039	0.00199	0.0469
	Calcium (Ca)-Total (mg/L)	33.3	50.7	24.6	406 ^{DLA}	2960
	Chromium (Cr)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	0.489
	Cobalt (Co)-Total (mg/L)	<0.00030	0.00439	<0.00030	0.0995	0.155
	Copper (Cu)-Total (mg/L)	<0.0010	0.0032	<0.0010	0.0509	2.47
	Iron (Fe)-Total (mg/L)	<0.030	0.266	<0.030	15.2 ^{DLA}	788
	Lead (Pb)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.0010 ^{DLA}	6.57
	Lithium (Li)-Total (mg/L)	<0.0050	<0.0050	<0.0050	0.028	0.45
	Magnesium (Mg)-Total (mg/L)	4.89	5.04	2.57	33.9	259
	Manganese (Mn)-Total (mg/L)	0.00657	0.162	0.00669	3.97	114
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	0.000243
	Molybdenum (Mo)-Total (mg/L)	<0.0010	<0.0010	0.0030	0.0036	0.356
	Nickel (Ni)-Total (mg/L)	0.0020	0.0057	<0.0010	0.0916	0.268
	Phosphorus (P)-Total (mg/L)	<0.30	<0.30	<0.30	<0.30	16.5
	Potassium (K)-Total (mg/L)	<2.0	<2.0	<2.0	<2.0 ^{DLA}	102
	Selenium (Se)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	0.052
	Silicon (Si)-Total (mg/L)	4.22	4.65	3.64	10.2 ^{DLA}	251 ^{RRR}
	Silver (Ag)-Total (mg/L)	0.000094	<0.000020	0.000067	<0.000040 ^{DLA}	Not Reportable
	Sodium (Na)-Total (mg/L)	<2.0	2.0	<2.0	6.8	77.4
	Strontium (Sr)-Total (mg/L)	0.0934	0.138	0.0750	1.04 ^{DLA}	3.95
Thallium (Tl)-Total (mg/L)	<0.00020	<0.00020	<0.00020	<0.00040 ^{DLA}	0.0043	

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1224177-6 Water 5809-7	L1224177-8 Water 5809-9	L1224177-9 Water 5809-10	L1224177-10 Water 5809-11	L1224177-11 Water 5809-12(1)
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	535	222	302	2050	
	Hardness (as CaCO3) (mg/L)	275	121	106	221	
	pH (pH)	8.10	7.70	8.09	11.26	
	Total Suspended Solids (mg/L)	13.1	<3.0	901	12500	
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	114	29.2	75.2	1200	
	Chloride (Cl) (mg/L)	1.43	<0.50			
	Sulfate (SO4) (mg/L)	157	79.0			
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050	<0.0050		0.0436	0.199
	Cyanide, Total (mg/L)	<0.0050	<0.0050		30.0	6.00
Total Metals	Aluminum (Al)-Total (mg/L)	0.130	0.0245	13.9	16.3	
	Antimony (Sb)-Total (mg/L)	<0.00050	<0.00050	0.00461	0.206	
	Arsenic (As)-Total (mg/L)	0.00086	<0.00050	0.00570	1.24	
	Barium (Ba)-Total (mg/L)	0.043	<0.020	0.342	0.050	
	Beryllium (Be)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.10	DLA
	Bismuth (Bi)-Total (mg/L)	<0.20	<0.20	<0.20	<0.40	DLA
	Boron (B)-Total (mg/L)	0.30	<0.10	0.40	<0.20	DLA
	Cadmium (Cd)-Total (mg/L)	0.000082	0.000119	0.00140	0.292	
	Calcium (Ca)-Total (mg/L)	99.3	38.9	57.3	1210	
	Chromium (Cr)-Total (mg/L)	<0.0010	<0.0010	0.0102	<0.10	DLA
	Cobalt (Co)-Total (mg/L)	0.00360	0.00210	0.00716	0.537	
	Copper (Cu)-Total (mg/L)	0.0036	0.0016	0.0843	27.9	
	Iron (Fe)-Total (mg/L)	0.181	0.111	18.3	1310	
	Lead (Pb)-Total (mg/L)	0.00259	<0.00050	0.392	41.4	
	Lithium (Li)-Total (mg/L)	<0.0050	<0.0050	0.0178	<0.50	DLA
	Magnesium (Mg)-Total (mg/L)	5.63	3.83	9.16	19.5	
	Manganese (Mn)-Total (mg/L)	0.0380	0.0778	1.68	5.82	
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	0.000020	0.000921	
	Molybdenum (Mo)-Total (mg/L)	0.0034	0.0020	0.0756	2.50	
	Nickel (Ni)-Total (mg/L)	<0.0010	0.0029	0.0109	0.22	
	Phosphorus (P)-Total (mg/L)	<0.30	<0.30	<0.30	2.84	
	Potassium (K)-Total (mg/L)	2.8	<2.0	27.3	5.1	
	Selenium (Se)-Total (mg/L)	<0.0010	<0.0010	0.0025	0.59	
	Silicon (Si)-Total (mg/L)	0.604	4.21	37.4	29.3	
	Silver (Ag)-Total (mg/L)	0.00278	0.000051	Not Reportable	Not Reportable	RRR
	Sodium (Na)-Total (mg/L)	18.2	<2.0	13.2	363	
	Strontium (Sr)-Total (mg/L)	0.246	0.106	0.277	2.83	
Thallium (Tl)-Total (mg/L)	<0.00020	<0.00020	0.00034	<0.020	DLA	

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID				
	L1224177-12 Water 5809-12(2)				
Grouping	Analyte				
WATER					
Physical Tests	Conductivity (uS/cm) Hardness (as CaCO3) (mg/L) pH (pH) Total Suspended Solids (mg/L)				
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L) Chloride (Cl) (mg/L) Sulfate (SO4) (mg/L)				
Cyanides	Cyanide, Weak Acid Diss (mg/L) Cyanide, Total (mg/L)	1.36 85.4			
Total Metals	Aluminum (Al)-Total (mg/L) Antimony (Sb)-Total (mg/L) Arsenic (As)-Total (mg/L) Barium (Ba)-Total (mg/L) Beryllium (Be)-Total (mg/L) Bismuth (Bi)-Total (mg/L) Boron (B)-Total (mg/L) Cadmium (Cd)-Total (mg/L) Calcium (Ca)-Total (mg/L) Chromium (Cr)-Total (mg/L) Cobalt (Co)-Total (mg/L) Copper (Cu)-Total (mg/L) Iron (Fe)-Total (mg/L) Lead (Pb)-Total (mg/L) Lithium (Li)-Total (mg/L) Magnesium (Mg)-Total (mg/L) Manganese (Mn)-Total (mg/L) Mercury (Hg)-Total (mg/L) Molybdenum (Mo)-Total (mg/L) Nickel (Ni)-Total (mg/L) Phosphorus (P)-Total (mg/L) Potassium (K)-Total (mg/L) Selenium (Se)-Total (mg/L) Silicon (Si)-Total (mg/L) Silver (Ag)-Total (mg/L) Sodium (Na)-Total (mg/L) Strontium (Sr)-Total (mg/L) Thallium (Tl)-Total (mg/L)				

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID	L1224177-1 Water 5809-1	L1224177-2 Water 5809-2	L1224177-3 Water 5809-3	L1224177-4 Water 5809-4	L1224177-5 Water 5809-6
Grouping	Analyte				
WATER					
Total Metals					
Tin (Sn)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.0010 ^{DLA}	<0.010 ^{DLA}
Titanium (Ti)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010	0.898
Uranium (U)-Total (mg/L)	<0.00020	<0.00020	0.00032	<0.00040 ^{DLA}	0.0184
Vanadium (V)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	0.637
Zinc (Zn)-Total (mg/L)	0.0079	0.0175	<0.0050	0.242	11.2
Dissolved Metals					
Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved (mg/L)	0.0384	0.0267	0.0163	0.090	0.210
Antimony (Sb)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.0010 ^{DLA}	0.00507
Arsenic (As)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.0010 ^{DLA}	0.00066
Barium (Ba)-Dissolved (mg/L)	<0.020	<0.020	<0.020	<0.020	<0.060 ^{DLA}
Beryllium (Be)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	<0.0010 ^{DLA}
Bismuth (Bi)-Dissolved (mg/L)	<0.20	<0.20	<0.20	<0.20	<0.60 ^{DLA}
Boron (B)-Dissolved (mg/L)	<0.10	<0.10	<0.10	<0.10	0.73 ^{DLM}
Cadmium (Cd)-Dissolved (mg/L)	0.000169	0.000079	0.000044	0.00187	<0.00017
Calcium (Ca)-Dissolved (mg/L)	35.0	51.7	25.3	412	28.9
Chromium (Cr)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	<0.0010
Cobalt (Co)-Dissolved (mg/L)	0.00115 ^{DTC}	0.00420	<0.00030	0.0961	0.0105
Copper (Cu)-Dissolved (mg/L)	0.0010 ^{DTC}	0.0012	<0.0010	0.0072	2.53
Iron (Fe)-Dissolved (mg/L)	0.102 ^{DTC}	0.075	<0.030	12.2	0.442
Lead (Pb)-Dissolved (mg/L)	0.00076	0.00063	<0.00050	0.0014	0.00782
Lithium (Li)-Dissolved (mg/L)	<0.0050	<0.0050	<0.0050	0.027	0.0078
Magnesium (Mg)-Dissolved (mg/L)	4.95	5.06	2.63	34.0	2.85
Manganese (Mn)-Dissolved (mg/L)	0.0524 ^{DTC}	0.164	0.0135 ^{DTC}	3.89	0.0379
Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Molybdenum (Mo)-Dissolved (mg/L)	<0.0010	<0.0010	0.0027	0.0032	0.371
Nickel (Ni)-Dissolved (mg/L)	0.0028	0.0055	<0.0010	0.0883	0.0551
Phosphorus (P)-Dissolved (mg/L)	<0.30	<0.30	<0.30	<0.30	<0.90 ^{DLA}
Potassium (K)-Dissolved (mg/L)	<2.0	<2.0	<2.0	<2.0	24.6
Selenium (Se)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	0.0505
Silicon (Si)-Dissolved (mg/L)	4.56	4.73	3.73	10.4	3.78
Silver (Ag)-Dissolved (mg/L)	0.000063	0.000026	0.000075	0.000420 ^{DTC}	0.0208
Sodium (Na)-Dissolved (mg/L)	<2.0	2.1	<2.0	6.9	116 ^{DTC}
Strontium (Sr)-Dissolved (mg/L)	0.101	0.137	0.0764	1.04	0.300
Thallium (Tl)-Dissolved (mg/L)	<0.00020	<0.00020	<0.00020	<0.00040 ^{DLA}	<0.00020
Tin (Sn)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.0010 ^{DLA}	0.0160
Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.010	<0.010	0.012	<0.030 ^{DLA}
Uranium (U)-Dissolved (mg/L)	<0.00020	<0.00020	0.00030	<0.00040 ^{DLA}	0.00022

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID	L1224177-6 Water 5809-7	L1224177-8 Water 5809-9	L1224177-9 Water 5809-10	L1224177-10 Water 5809-11	L1224177-11 Water 5809-12(1)
Grouping	Analyte				
WATER					
Total Metals	Tin (Sn)-Total (mg/L)	<0.00050	<0.00050	<0.00050	0.192
	Titanium (Ti)-Total (mg/L)	0.012	<0.010	0.165	0.373
	Uranium (U)-Total (mg/L)	0.00391	0.00023	0.00099	<0.020 ^{DLA}
	Vanadium (V)-Total (mg/L)	<0.0010	<0.0010	0.0215	<0.10 ^{DLA}
	Zinc (Zn)-Total (mg/L)	0.0176	0.0098	0.774	1100
Dissolved Metals	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0540	0.0176	0.251	0.108
	Antimony (Sb)-Dissolved (mg/L)	<0.00050	<0.00050	0.00481	<0.0050 ^{DLA}
	Arsenic (As)-Dissolved (mg/L)	0.00078	<0.00050	0.00052	<0.0050 ^{DLA}
	Barium (Ba)-Dissolved (mg/L)	0.041	<0.020	0.048	0.029
	Beryllium (Be)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.010 ^{DLA}
	Bismuth (Bi)-Dissolved (mg/L)	<0.20	<0.20	<0.20	<0.20
	Boron (B)-Dissolved (mg/L)	0.29	<0.10	0.39	<0.10
	Cadmium (Cd)-Dissolved (mg/L)	0.000082	0.000065	0.000054	<0.00038 ^{DLM}
	Calcium (Ca)-Dissolved (mg/L)	101	41.7	38.2	84.5 ^{DLA}
	Chromium (Cr)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.010 ^{DLA}
	Cobalt (Co)-Dissolved (mg/L)	0.00345	0.00233	0.00366	0.0197
	Copper (Cu)-Dissolved (mg/L)	0.0047	<0.0010	0.0225	4.36
	Iron (Fe)-Dissolved (mg/L)	0.094	0.049	0.154	4.07
	Lead (Pb)-Dissolved (mg/L)	0.00209	0.00055	0.00560	0.459
	Lithium (Li)-Dissolved (mg/L)	<0.0050	<0.0050	0.0061	<0.050 ^{DLA}
	Magnesium (Mg)-Dissolved (mg/L)	5.68	4.05	2.53	2.36
	Manganese (Mn)-Dissolved (mg/L)	0.0346	0.0911	0.191	0.0157
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	0.000013
	Molybdenum (Mo)-Dissolved (mg/L)	0.0032	0.0017	0.0628	1.82
	Nickel (Ni)-Dissolved (mg/L)	<0.0010	0.0032	0.0050	0.012
	Phosphorus (P)-Dissolved (mg/L)	<0.30	<0.30	<0.30	<0.30
	Potassium (K)-Dissolved (mg/L)	3.0	<2.0	20.8	2.3
	Selenium (Se)-Dissolved (mg/L)	<0.0010	<0.0010	0.0017	0.333
	Silicon (Si)-Dissolved (mg/L)	0.450	4.32	3.73	3.19
	Silver (Ag)-Dissolved (mg/L)	0.000449	0.000104 ^{DTC}	0.0104	Not Reportable ^{RRR}
	Sodium (Na)-Dissolved (mg/L)	18.5	<2.0	14.0	353
	Strontium (Sr)-Dissolved (mg/L)	0.250	0.112	0.239	0.771
	Thallium (Tl)-Dissolved (mg/L)	<0.00020 ^{DTC}	<0.00020	<0.00020	<0.0020 ^{DLA}
	Tin (Sn)-Dissolved (mg/L)	0.00173	<0.00050	<0.00050	<0.0050 ^{DLA}
	Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.010	<0.010	0.014
	Uranium (U)-Dissolved (mg/L)	0.00360	<0.00020	0.00043	<0.0020 ^{DLA}

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1224177-12	Water		
Grouping	Analyte				
WATER					
Total Metals	Tin (Sn)-Total (mg/L) Titanium (Ti)-Total (mg/L) Uranium (U)-Total (mg/L) Vanadium (V)-Total (mg/L) Zinc (Zn)-Total (mg/L)				
Dissolved Metals	Dissolved Metals Filtration Location Aluminum (Al)-Dissolved (mg/L) Antimony (Sb)-Dissolved (mg/L) Arsenic (As)-Dissolved (mg/L) Barium (Ba)-Dissolved (mg/L) Beryllium (Be)-Dissolved (mg/L) Bismuth (Bi)-Dissolved (mg/L) Boron (B)-Dissolved (mg/L) Cadmium (Cd)-Dissolved (mg/L) Calcium (Ca)-Dissolved (mg/L) Chromium (Cr)-Dissolved (mg/L) Cobalt (Co)-Dissolved (mg/L) Copper (Cu)-Dissolved (mg/L) Iron (Fe)-Dissolved (mg/L) Lead (Pb)-Dissolved (mg/L) Lithium (Li)-Dissolved (mg/L) Magnesium (Mg)-Dissolved (mg/L) Manganese (Mn)-Dissolved (mg/L) Mercury (Hg)-Dissolved (mg/L) Molybdenum (Mo)-Dissolved (mg/L) Nickel (Ni)-Dissolved (mg/L) Phosphorus (P)-Dissolved (mg/L) Potassium (K)-Dissolved (mg/L) Selenium (Se)-Dissolved (mg/L) Silicon (Si)-Dissolved (mg/L) Silver (Ag)-Dissolved (mg/L) Sodium (Na)-Dissolved (mg/L) Strontium (Sr)-Dissolved (mg/L) Thallium (Tl)-Dissolved (mg/L) Tin (Sn)-Dissolved (mg/L) Titanium (Ti)-Dissolved (mg/L) Uranium (U)-Dissolved (mg/L)				

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1224177-1 Water 5809-1	L1224177-2 Water 5809-2	L1224177-3 Water 5809-3	L1224177-4 Water 5809-4	L1224177-5 Water 5809-6
Grouping	Analyte					
WATER						
Dissolved Metals	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020 ^{DLA}	0.0011
	Zinc (Zn)-Dissolved (mg/L)	0.0120	0.0187	0.0064	0.239	4.74
Aggregate Organics	BOD (mg/L)	<5.0	<5.0			

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1224177-6	L1224177-8	L1224177-9	L1224177-10	L1224177-11
Description	Water	Water	Water	Water	Water	Water
Sampled Date						
Sampled Time						
Client ID	5809-7	5809-9	5809-10	5809-11	5809-12(1)	
Grouping	Analyte					
WATER						
Dissolved Metals	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.010 ^{DLA}	
	Zinc (Zn)-Dissolved (mg/L)	0.0227	0.0140	0.0438	1.37	
Aggregate Organics	BOD (mg/L)					

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1224177-12 Water 5809-12(2)			
Grouping	Analyte				
WATER					
Dissolved Metals	Vanadium (V)-Dissolved (mg/L) Zinc (Zn)-Dissolved (mg/L)				
Aggregate Organics	BOD (mg/L)				

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Duplicate	Chloride (Cl)	DLM	L1224177-1, -2, -3, -4, -6, -8
Matrix Spike	Mercury (Hg)-Total	MS-B	L1224177-10, -9
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1224177-1, -2, -3, -4, -5, -6, -8, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1224177-1, -2, -3, -4, -5, -6, -8, -9
Matrix Spike	Mercury (Hg)-Total	MS-B	L1224177-5
Matrix Spike	Mercury (Hg)-Total	MS-B	L1224177-5
Matrix Spike	Aluminum (Al)-Total	MS-B	L1224177-5
Matrix Spike	Lithium (Li)-Total	MS-B	L1224177-5
Matrix Spike	Manganese (Mn)-Total	MS-B	L1224177-5
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1224177-10
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1224177-10
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1224177-10
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1224177-10

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLA	Detection Limit Adjusted For required dilution
DLM	Detection Limit Adjusted For Sample Matrix Effects
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RRR	Refer to Report Remarks for issues regarding this analysis

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-COL-VA	Water	Alkalinity by Colourimetric (Automated)	EPA 310.2
This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.			
ANIONS-CL-IC-VA	Water	Chloride by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
ANIONS-SO4-IC-VA	Water	Sulfate by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
BOD5-VA	Water	Biochemical Oxygen Demand- 5 day	APHA 5210 B- "BIOCHEMICAL OXYGEN DEMAND"
This analysis is carried out using procedures adapted from APHA Method 5210 B - "Biochemical Oxygen Demand (BOD)". All forms of biochemical oxygen demand (BOD) are determined by diluting and incubating a sample for a specified time period, and measuring the oxygen depletion using a dissolved oxygen meter. Dissolved BOD (SOLUBLE) is determined by filtering the sample through a glass fibre filter prior to dilution. Carbonaceous BOD (CBOD) is determined by adding a nitrification inhibitor to the diluted sample prior to incubation.			
BOD5-VA	Water	Biochemical Oxygen Demand- 5 day	APHA 5210 B- BIOCHEMICAL OXYGEN DEMAND
This analysis is carried out using procedures adapted from APHA Method 5210 B - "Biochemical Oxygen Demand (BOD)". All forms of biochemical oxygen demand (BOD) are determined by diluting and incubating a sample for a specified time period, and measuring the oxygen depletion using a dissolved oxygen meter. Dissolved BOD (SOLUBLE) is determined by filtering the sample through a glass fibre filter prior to dilution. Carbonaceous BOD (CBOD) is determined by adding a nitrification inhibitor to the diluted sample prior to incubation.			
CN-T-CFA-VA	Water	Total Cyanide in water by CFA	ISO 14403:2002
This analysis is carried out using procedures adapted from ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourimetric analysis. Method Limitation: This method is susceptible to interference from thiocyanate (SCN). If SCN is present in the sample, there could be a positive interference with this method, but it would be less than 1% and could be as low as zero.			
CN-T-NAOH-CFA-VA	Soil	Total Cyanide in soil by CFA	ONMOE CN-E3015/ISO 14403:2002
This analysis is carried out using procedures adapted from the Ontario Ministry of Environment CN-E3015 and ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by rotary extraction of the soil with 0.04M Sodium Hydroxide, followed by in-line UV digestion along with sample distillation and final determination by colourimetric analysis.			
CN-WAD-CFA-VA	Water	Weak Acid Diss. Cyanide in water by CFA	APHA 4500-CN CYANIDE
This analysis is carried out using procedures adapted from APHA Method 4500-CN I. "Weak Acid Dissociable Cyanide". Weak Acid Dissociable (WAD) cyanide is determined by in-line sample distillation with final determination by colourimetric analysis.			

Reference Information

CN-WAD-NAOH-CFA-VA	Soil	Weak Acid Diss. Cyanide in soil by CFA	ONMOE CN-E3015/APHA 4500-CN CYANIDE
<p>This analysis is carried out using procedures adapted from the Ontario Ministry of Environment CN-E3015 and APHA Method 4500-CN I. "Weak Acid Dissociable Cyanide". Weak Acid Dissociable (WAD) cyanide is determined by rotary extraction of the soil with 0.04M Sodium Hydroxide, followed by in-line sample distillation with final determination by colourimetric analysis.</p>			
EC-PCT-VA	Water	Conductivity (Automated)	APHA 2510 Auto. Conduc.
<p>This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.</p>			
HARDNESS-CALC-VA	Water	Hardness	APHA 2340B
<p>Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO₃ equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.</p>			
HG-200.2-CVAF-VA	Soil	Mercury in Soil by CVAFS	EPA 200.2/245.7
<p>This analysis is carried out using procedures from CSR Analytical Method: "Strong Acid Leachable Metals (SALM) in Soil", BC Ministry of Environment, 26 June 2009, and procedures adapted from EPA Method 200.2. The sample is manually homogenized, dried at 60 degrees Celsius, sieved through a 2 mm (10 mesh) sieve (this sieve step is omitted for international soil samples), and a representative subsample of the dry material is weighed. The sample is then digested at 95 degrees Celsius for 2 hours by block digester using concentrated nitric and hydrochloric acids. Instrumental analysis is by atomic fluorescence spectrophotometry (EPA Method 245.7).</p>			
<p>Method Limitation: This method is not a total digestion technique. It is a very strong acid digestion that is intended to dissolve those metals that may be environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.</p>			
HG-DIS-LOW-CVAFS-VA	Water	Dissolved Mercury in Water by CVAFS(Low)	EPA SW-846 3005A & EPA 245.7
<p>This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by filtration (EPA Method 3005A) and involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).</p>			
HG-TOT-LOW-CVAFS-VA	Water	Total Mercury in Water by CVAFS(Low)	EPA 245.7
<p>This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).</p>			
MET-200.2-CCMS-VA	Soil	Metals in Soil by CRC ICPMS	EPA 200.2/6020A
<p>This analysis is carried out using procedures from CSR Analytical Method: "Strong Acid Leachable Metals (SALM) in Soil", BC Ministry of Environment, 26 June 2009, and procedures adapted from EPA Method 200.2. The sample is manually homogenized, dried at 60 degrees Celsius, sieved through a 2 mm (10 mesh) sieve (this sieve step is omitted for international soil samples), and a representative subsample of the dry material is weighed. The sample is then digested at 95 degrees Celsius for 2 hours by block digester using concentrated nitric and hydrochloric acids. Instrumental analysis of the digested extract is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).</p>			
<p>Method Limitation: This method is not a total digestion technique. It is a very strong acid digestion that is intended to dissolve those metals that may be environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.</p>			
MET-DIS-CCME-MS-VA	Water	Diss. Metals in Water by ICPMS (CCME)	EPA SW-846 3005A/6020A
<p>This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).</p>			
MET-DIS-ICP-VA	Water	Dissolved Metals in Water by ICPOES	EPA SW-846 3005A/6010B
<p>This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves filtration (EPA Method 3005A) and analysis by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).</p>			
MET-TOT-CCME-MS-VA	Water	Total Metals in Water by ICPMS (CCME)	EPA SW-846 3005A/6020A
<p>This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).</p>			
MET-TOT-ICP-VA	Water	Total Metals in Water by ICPOES	EPA SW-846 3005A/6010B
<p>This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or</p>			

Reference Information

microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

MOISTURE-VA Soil Moisture content ASTM D2974-00 Method A

This analysis is carried out gravimetrically by drying the sample at 105 C for a minimum of six hours.

PH-1:2-VA Soil pH in Soil (1:2 Soil:Water Extraction) BC WLAP METHOD: PH, ELECTROMETRIC, SOIL

This analysis is carried out in accordance with procedures described in the pH, Electrometric in Soil and Sediment method - Section B Physical/Inorganic and Misc. Constituents, BC Environmental Laboratory Manual 2007. The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water. The pH of the solution is then measured using a standard pH probe.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H "pH Value"

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H pH Value

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

TSS-VA Water Total Suspended Solids by Gravimetric APHA 2540 D - GRAVIMETRIC

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, TSS is determined by drying the filter at 104 degrees celsius.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

10-272797

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

mg/kg - milligrams per kilogram based on dry weight of sample.

mg/kg wwt - milligrams per kilogram based on wet weight of sample.

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.

mg/L - milligrams per litre.

< - Less than.

D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



L1224177-COFC



Chain of Custody / Analytical Request Form
Canada Toll Free: 1 800 668 9878
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10-272797

Page ___ of ___

Report To	Report Format / Distribution	Service Request: (Rush subject to availability - Contact ALS to confirm TAT)
Company: <u>Sable Resources</u>	Standard: <input checked="" type="checkbox"/> Other (specify):	<input checked="" type="checkbox"/> Regular (Standard Turnaround Times - Business Days)
Contact: <u>#</u>	Select: PDF <input checked="" type="checkbox"/> Excel <input checked="" type="checkbox"/> Digital Fax	Priority(2-4 Business Days)-50% surcharge - Contact ALS to confirm TAT
Address: <u>1290-625 Howe St</u> <u>Vancouver</u>	Email 1: <u>Joel.Gillman@gmail.com</u>	Emergency (1-2 Business Days)-100% Surcharge - Contact ALS to confirm TAT
Phone: <u>604 685 8565</u> Fax:	Email 2:	Same Day or Weekend Emergency - Contact ALS to confirm TAT

Invoice To Same as Report? (circle) <input checked="" type="checkbox"/> Yes or No (if No, provide details)	Client / Project Information	Analysis Request (Indicate Filtered or Preserved, F/P)											
Copy of Invoice with Report? (circle) <input checked="" type="checkbox"/> Yes or No	Job #: <u>5809 - Oct</u>												
Company:	PO / AFE:												
Contact:	LSD:												
Address:	Quote #:												
Phone: Fax:													

Lab Work Order # (lab use only)	<u>L122477</u>	ALS Contact:	Sampler: <u>N. Gendreau</u>
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Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Cyanide, Total and Dissolved	Chloride/Sulfate	pH, Sp. Conductivity	Total Hardness	Total Susp. Solids	Total Metals ICPMS	Dissolved Metals ICPMS	E. Coli	BOD 5-Day	Number of Containers
	5809-1				X	X	X	X	X	X	X	X	X	
	5809-2					X	X	X	X	X	X	X	X	
	5809-3					X	X	X	X	X	X	X	X	
	5809-4					X	X	X	X	X	X	X	X	
	5809-6				X		X	X		X	X			
	5809-7				X	X	X	X	X	X	X			
	5809-8				X					X				
	5809-9				X	X	X	X	X	X	X	X		
	5809-10						X	X	X	X	X			
	5809-11				X		X	X	X	X	X			
	5809-12(1)				X									
	5809-12(2)				X									

Short Holding Time
Rush Processing

Special Instructions / Regulation with water or land use (CCME - Freshwater Aquatic Life/BC CSR-Commercial/AB Tier 1-Natural/ETC) / Hazardous Details

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.

By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)			
Released by:	Date:	Time:	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
			<u>Brittany</u>	<u>Oct. 16</u>	<u>8:40</u>	<u>8.1 °C</u>				



SABLE RESOURCES LTD.
ATTN: Joel Gillham
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Vancouver BC V6C 2T6

Date Received: 16-OCT-12
Report Date: 31-OCT-12 10:47 (MT)
Version: FINAL

Client Phone: 604-685-8565

Certificate of Analysis

Lab Work Order #: L1224180
Project P.O. #: NOT SUBMITTED
Job Reference: 8467 OCT
C of C Numbers: 10-272791
Legal Site Desc:

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Account Manager

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ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1224180-1 Water 11-OCT-12 8467-1	L1224180-2 Water 11-OCT-12 8467-2	L1224180-3 Water 11-OCT-12 8467-3	
Grouping	Analyte				
WATER					
Physical Tests	Conductivity (uS/cm)	139	264	137	
	Hardness (as CaCO3) (mg/L)	67.7	161	68.2	
	pH (pH)	7.87	8.02	7.89	
	Total Suspended Solids (mg/L)	<3.0	16.8	<3.0	
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	34.6	75.3	36.1	
	Ammonia, Total (as N) (mg/L)	<0.0050	1.18	<0.0050	
	Chloride (Cl) (mg/L)	<0.50	0.85	<0.50	
	Nitrate (as N) (mg/L)	0.0348	5.17	0.0391	
	Nitrite (as N) (mg/L)	<0.0010	0.0933	<0.0010	
	Sulfate (SO4) (mg/L)	35.1	46.2	33.2	
Total Metals	Aluminum (Al)-Total (mg/L)	0.0389	0.397	0.0135	
	Antimony (Sb)-Total (mg/L)	<0.00050	0.00143	<0.00050	
	Arsenic (As)-Total (mg/L)	<0.00050	<0.00050	<0.00050	
	Barium (Ba)-Total (mg/L)	<0.020	0.034	<0.020	
	Beryllium (Be)-Total (mg/L)	<0.0010	<0.0010	<0.0010	
	Bismuth (Bi)-Total (mg/L)	<0.20	<0.20	<0.20	
	Boron (B)-Total (mg/L)	<0.10	<0.10	<0.10	
	Cadmium (Cd)-Total (mg/L)	0.000024	0.000044	0.000024	
	Calcium (Ca)-Total (mg/L)	23.1	42.9	24.3	
	Chromium (Cr)-Total (mg/L)	<0.0010	<0.0010	<0.0010	
	Cobalt (Co)-Total (mg/L)	<0.00030	<0.00030	<0.00030	
	Copper (Cu)-Total (mg/L)	0.0020	0.0034	<0.0010	
	Iron (Fe)-Total (mg/L)	<0.030	0.189	<0.030	
	Lead (Pb)-Total (mg/L)	<0.00050	0.00189	<0.00050	
	Lithium (Li)-Total (mg/L)	<0.0050	0.0222	<0.0050	
	Magnesium (Mg)-Total (mg/L)	2.12	2.10	2.13	
	Manganese (Mn)-Total (mg/L)	0.00200	0.0761	0.00192	
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010	
	Molybdenum (Mo)-Total (mg/L)	0.0025	0.0121	0.0026	
	Nickel (Ni)-Total (mg/L)	<0.0010	<0.0010	<0.0010	
	Phosphorus (P)-Total (mg/L)	<0.30	<0.30	<0.30	
	Potassium (K)-Total (mg/L)	<2.0	<2.0	<2.0	
	Selenium (Se)-Total (mg/L)	<0.0010	<0.0010	<0.0010	
	Silicon (Si)-Total (mg/L)	3.72	4.21	3.71	
	Silver (Ag)-Total (mg/L)	<0.000020	0.000293	0.000021	
	Sodium (Na)-Total (mg/L)	<2.0	6.9	<2.0	
	Strontium (Sr)-Total (mg/L)	0.0701	0.471	0.0716	

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1224180-1 Water 11-OCT-12 8467-1	L1224180-2 Water 11-OCT-12 8467-2	L1224180-3 Water 11-OCT-12 8467-3	
Grouping	Analyte				
WATER					
Total Metals	Thallium (Tl)-Total (mg/L)	<0.00020	<0.00020	<0.00020	
	Tin (Sn)-Total (mg/L)	<0.00050	<0.00050	<0.00050	
	Titanium (Ti)-Total (mg/L)	<0.010	<0.010	<0.010	
	Uranium (U)-Total (mg/L)	0.00031	0.00278	0.00033	
	Vanadium (V)-Total (mg/L)	<0.0010	<0.0010	<0.0010	
	Zinc (Zn)-Total (mg/L)	<0.0050	0.0108	<0.0050	
Dissolved Metals	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	
	Aluminum (Al)-Dissolved (mg/L)	0.0092	0.0210	0.0187	
	Antimony (Sb)-Dissolved (mg/L)	<0.00050	0.00269 ^{DTC}	<0.00050	
	Arsenic (As)-Dissolved (mg/L)	<0.00050	0.00054	<0.00050	
	Barium (Ba)-Dissolved (mg/L)	<0.020	0.042	<0.020	
	Beryllium (Be)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	
	Bismuth (Bi)-Dissolved (mg/L)	<0.20	<0.20	<0.20	
	Boron (B)-Dissolved (mg/L)	<0.10	<0.10	<0.10	
	Cadmium (Cd)-Dissolved (mg/L)	0.000028	0.000028	0.000029	
	Calcium (Ca)-Dissolved (mg/L)	23.6	61.3 ^{DTC}	23.9	
	Chromium (Cr)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	
	Cobalt (Co)-Dissolved (mg/L)	<0.00030	<0.00030	<0.00030	
	Copper (Cu)-Dissolved (mg/L)	<0.0010	0.0021	<0.0010	
	Iron (Fe)-Dissolved (mg/L)	<0.030	<0.030	<0.030	
	Lead (Pb)-Dissolved (mg/L)	<0.00050	<0.00050	0.00055	
	Lithium (Li)-Dissolved (mg/L)	<0.0050	0.0419 ^{DTC}	<0.0050	
	Magnesium (Mg)-Dissolved (mg/L)	2.15	2.00	2.08	
	Manganese (Mn)-Dissolved (mg/L)	0.00619 ^{DTC}	0.109 ^{DTC}	0.00716 ^{DTC}	
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	
	Molybdenum (Mo)-Dissolved (mg/L)	0.0025	0.0198 ^{DTC}	0.0024	
	Nickel (Ni)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	
	Phosphorus (P)-Dissolved (mg/L)	<0.30	<0.30	<0.30	
	Potassium (K)-Dissolved (mg/L)	<2.0	2.9	<2.0	
	Selenium (Se)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	
	Silicon (Si)-Dissolved (mg/L)	3.72	3.38	3.67	
	Silver (Ag)-Dissolved (mg/L)	0.000026	0.000209	0.000030	
	Sodium (Na)-Dissolved (mg/L)	<2.0	11.6 ^{DTC}	<2.0	
	Strontium (Sr)-Dissolved (mg/L)	0.0705	0.806 ^{DTC}	0.0711	
	Thallium (Tl)-Dissolved (mg/L)	<0.00020	<0.00020	<0.00020	
	Tin (Sn)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	
	Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.010	<0.010	

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1224180-1	L1224180-2	L1224180-3		
Description	Water	Water	Water		
Sampled Date	11-OCT-12	11-OCT-12	11-OCT-12		
Sampled Time					
Client ID	8467-1	8467-2	8467-3		
Grouping	Analyte				
WATER					
Dissolved Metals	Uranium (U)-Dissolved (mg/L)	0.00032	0.00462 ^{DTC}	0.00033	
	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	
	Zinc (Zn)-Dissolved (mg/L)	<0.0050	0.0058	<0.0050	

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Duplicate	Chloride (Cl)	DLM	L1224180-1, -2, -3
Duplicate	Nitrite (as N)	DLM	L1224180-1, -2, -3
Matrix Spike	Mercury (Hg)-Total	MS-B	L1224180-1, -2, -3
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1224180-1, -2, -3
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1224180-1, -2, -3
Matrix Spike	Calcium (Ca)-Total	MS-B	L1224180-1, -2, -3

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLM	Detection Limit Adjusted For Sample Matrix Effects
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-COL-VA	Water	Alkalinity by Colourimetric (Automated)	EPA 310.2
This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.			
ANIONS-CL-IC-VA	Water	Chloride by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
ANIONS-NO2-IC-VA	Water	Nitrite in Water by Ion Chromatography	EPA 300.0
This analysis is carried out using procedures adapted from EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Nitrite is detected by UV absorbance.			
ANIONS-NO3-IC-VA	Water	Nitrate in Water by Ion Chromatography	EPA 300.0
This analysis is carried out using procedures adapted from EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography". Nitrate is detected by UV absorbance.			
ANIONS-SO4-IC-VA	Water	Sulfate by Ion Chromatography	APHA 4110 B.
This analysis is carried out using procedures adapted from APHA Method 4110 B. "Ion Chromatography with Chemical Suppression of Eluent Conductivity" and EPA Method 300.0 "Determination of Inorganic Anions by Ion Chromatography".			
EC-PCT-VA	Water	Conductivity (Automated)	APHA 2510 Auto. Conduc.
This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.			
HARDNESS-CALC-VA	Water	Hardness	APHA 2340B
Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.			
HG-DIS-LOW-CVAFS-VA	Water	Dissolved Mercury in Water by CVAFS(Low)	EPA SW-846 3005A & EPA 245.7
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by filtration (EPA Method 3005A) and involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).			
HG-TOT-LOW-CVAFS-VA	Water	Total Mercury in Water by CVAFS(Low)	EPA 245.7
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry (EPA Method 245.7).			
MET-DIS-CCME-MS-VA	Water	Diss. Metals in Water by ICPMS (CCME)	EPA SW-846 3005A/6020A
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).			
MET-DIS-ICP-VA	Water	Dissolved Metals in Water by ICPOES	EPA SW-846 3005A/6010B
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves filtration (EPA Method 3005A) and analysis by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).			

Reference Information

MET-TOT-CCME-MS-VA Water Total Metals in Water by ICPMS (CCME) EPA SW-846 3005A/6020A

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

MET-TOT-ICP-VA Water Total Metals in Water by ICPOES EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

NH3-L-CFA-ED Water Ammonia in Water by Colour APHA 4500 NH3-NITROGEN (AMMONIA)

This analysis is carried out using procedures adapted from APHA Method 4500 NH3 "NITROGEN (AMMONIA)". Ammonia is determined using the automated phenate colourimetric method.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H "pH Value"

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H pH Value

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

TSS-VA Water Total Suspended Solids by Gravimetric APHA 2540 D - GRAVIMETRIC

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, TSS is determined by drying the filter at 104 degrees celsius.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

10-272791

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

mg/kg - milligrams per kilogram based on dry weight of sample.

mg/kg wwt - milligrams per kilogram based on wet weight of sample.

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.

mg/L - milligrams per litre.

< - Less than.

D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



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L1224180-COFC

Report To	Report Format / Distribution	Service Request (rush subject to availability - Contact ALS to confirm TAT)
Company: <i>Sonble Resources</i>	Standard: <input checked="" type="checkbox"/> Other (specify):	<input checked="" type="checkbox"/> Regular (Standard Turnaround Times - Business Days)
Contact:	Select: PDF <input checked="" type="checkbox"/> Excel <input type="checkbox"/> Digital <input type="checkbox"/> Fax <input type="checkbox"/>	Priority (2-4 Business Days)-50% surcharge - Contact ALS to confirm TAT
Address: <i>1290-625 Howe St Vancouver BC</i>	Email 1: <i>Joel.gillham@gmail.com</i>	Emergency (1-2 Business Days)-100% Surcharge - Contact ALS to confirm TAT
Phone: <i>604 685 8565</i> Fax:	Email 2:	Same Day or Weekend Emergency - Contact ALS to confirm TAT

Invoice To Same as Report? (circle) <input checked="" type="checkbox"/> Yes or No (if No, provide details)	Client / Project Information	Analysis Request (Indicate Filtered or Preserved, F/P)	
Copy of Invoice with Report? (circle) <input checked="" type="checkbox"/> Yes or No	Job #: <i>8467 Oct</i>		
Company:	PO / AFE:		
Contact:	LSD:		
Address:	Quote #:		
Phone: Fax:	ALS Contact:		

Lab Work Order # (lab use only)	<i>L1224180</i>	Sampler: <i>N. Candemir</i>
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Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	<i>Ammonia</i>	<i>Nitrite/Nitrate</i>	<i>Chloride/Sulfate</i>	<i>pH Sp. Conduct.</i>	<i>Total Alkalinity</i>	<i>Hardness</i>	<i>Total Susp. Solids</i>	<i>Total Metals ICPMS</i>	<i>D:Solid Metals ICPMS</i>	Number of Containers
	<i>8467-1</i>	<i>11-07-12</i>			X	X	X	X	X	X	X	X	X	
	<i>8467-2</i>	<i>↓</i>			X	X	X	X	X	X	X	X	X	
	<i>8467-3</i>				X	X	X	X	X	X	X	X	X	

Short Holding Time
Rush Processing

Special Instructions / Regulation with water or land use (CCME- Freshwater Aquatic Life/BC CSR-Commercial/AB Tier 1-Natural/ETC) / Hazardous Details

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.

By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)				Observations: Yes / No ? If Yes add SIF
Released by:	Date:	Time:	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:		
			<i>Brittany</i>	<i>Oct. 16</i>	<i>8:40</i>	<i>8.1 °C</i>					



Appendix B

Water Quality Data 2016

CLIENT NAME: MISC AGAT CLIENT BC, BC
(403)

ATTENTION TO: Mel Rahal

PROJECT:

AGAT WORK ORDER: 16V139126

MICROBIOLOGY ANALYSIS REVIEWED BY: Andrew Garrard, B.Sc., General Manager

WATER ANALYSIS REVIEWED BY: Andrew Garrard, B.Sc., General Manager

DATE REPORTED: Sep 29, 2016

PAGES (INCLUDING COVER): 28

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (778) 452-4000

***NOTES**

VERSION 1: Sample receipt temperature 10°C.

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



Certificate of Analysis

AGAT WORK ORDER: 16V139126

PROJECT:

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
<http://www.agatlabs.com>

CLIENT NAME: MISC AGAT CLIENT BC

ATTENTION TO: Mel Rahal

SAMPLING SITE:

SAMPLED BY:

E.Coli by Enzyme Substrate

DATE RECEIVED: 2016-09-19

DATE REPORTED: 2016-09-20

Parameter	Unit	SAMPLE DESCRIPTION:		5809-1	5809-2	5809-3	5809-9
		G / S	RDL	7858203	7858204	7858206	7858220
Escherichia Coli (E.coli)	MPN/100mL			1	1	2	2
							<1

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BCCSR(IW)mg/L(Van)

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 16V139126

PROJECT:

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CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
<http://www.agatlabs.com>

CLIENT NAME: MISC AGAT CLIENT BC

ATTENTION TO: Mel Rahal

SAMPLING SITE:

SAMPLED BY:

Anions

DATE RECEIVED: 2016-09-19

DATE REPORTED: 2016-09-20

SAMPLE DESCRIPTION: 5809-4

SAMPLE TYPE: Water

DATE SAMPLED: 9/17/2016

Parameter	Unit	G / S	RDL	7858207
Chloride	mg/L	100	0.05	0.35
Sulphate	mg/L		5	1030

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BCCSR(IW)mg/L(Van)

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 16V139126

PROJECT:

Unit 120, 8600 Glenlyon Parkway
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<http://www.agatlabs.com>

CLIENT NAME: MISC AGAT CLIENT BC

ATTENTION TO: Mel Rahal

SAMPLING SITE:

SAMPLED BY:

Anions and Nutrients

DATE RECEIVED: 2016-09-19

DATE REPORTED: 2016-09-23

Parameter	Unit	SAMPLE DESCRIPTION:		5809-1		5809-2		5809-9	
		SAMPLE TYPE:		Water		Water		Water	
		DATE SAMPLED:		9/18/2016		9/18/2016		9/18/2016	
		G / S	RDL	7858203	RDL	7858204	RDL	7858220	
Chloride	mg/L	100	0.05	0.13	0.05	0.13	0.05	0.13	
Nitrate-N	mg/L		0.005	0.016	0.005	0.023	0.005	0.026	
Nitrite-N	mg/L		0.005	<0.005	0.005	<0.005	0.005	<0.005	
Sulphate	mg/L		0.5	78.1	5	132	0.5	79.5	
Ammonia-N	mg/L		0.01	<0.01	0.01	<0.01	0.01	<0.01	
Ortho-Phosphate	mg/L		0.001	0.001	0.001	<0.001	0.001	0.001	
Phosphorus Total	mg/L		0.005	0.006	0.005	0.006	0.005	0.006	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BCCSR(1W)mg/L(Van)

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 16V139126

PROJECT:

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CANADA V5J 0B6
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FAX (778)452-4074
<http://www.agatlabs.com>

CLIENT NAME: MISC AGAT CLIENT BC

ATTENTION TO: Mel Rahal

SAMPLING SITE:

SAMPLED BY:

Anions and Nutrients

DATE RECEIVED: 2016-09-19

DATE REPORTED: 2016-09-23

SAMPLE DESCRIPTION: 5809-3

SAMPLE TYPE: Water

DATE SAMPLED: 9/18/2016

Parameter	Unit	G / S	RDL	7858206
Nitrate-N	mg/L		0.005	<0.005
Nitrite-N	mg/L		0.005	<0.005
Sulphate	mg/L		0.5	45.1
Ammonia-N	mg/L		0.01	<0.01
Ortho-Phosphate	mg/L		0.001	<0.001
Phosphorus Total	mg/L		0.005	0.006

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BCCSR(IW)mg/L(Van)

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 16V139126

PROJECT:

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
<http://www.agatlabs.com>

CLIENT NAME: MISC AGAT CLIENT BC

ATTENTION TO: Mel Rahal

SAMPLING SITE:

SAMPLED BY:

Anions and Nutrients

DATE RECEIVED: 2016-09-19

DATE REPORTED: 2016-09-23

Parameter	Unit	SAMPLE DESCRIPTION:		DATE SAMPLED:	
		G / S	RDL	7858223	7858224
Chloride	mg/L	100	0.05	0.12	0.10
Nitrate-N	mg/L		0.005	<0.005	<0.005
Nitrite-N	mg/L		0.005	<0.005	<0.005
Sulphate	mg/L		0.5	34.7	33.5
Ammonia-N	mg/L		0.01	0.01	<0.01

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BCCSR(IW)mg/L(Van)

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 16V139126

PROJECT:

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
<http://www.agatlabs.com>

CLIENT NAME: MISC AGAT CLIENT BC

ATTENTION TO: Mel Rahal

SAMPLING SITE:

SAMPLED BY:

Biochemical Oxygen Demand

DATE RECEIVED: 2016-09-19

DATE REPORTED: 2016-09-24

Parameter	Unit	SAMPLE DESCRIPTION:		DATE SAMPLED:	
		G / S	RDL		
		5809-1	5809-2	9/18/2016	9/18/2016
		Water	Water	7858203	7858204
BOD (5 day)	mg/L	4	<4	<4	<4

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BCCSR(IW)mg/L(Van)

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 16V139126

PROJECT:

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
<http://www.agatlabs.com>

CLIENT NAME: MISC AGAT CLIENT BC

ATTENTION TO: Mel Rahal

SAMPLING SITE:

SAMPLED BY:

British Columbia CSR - Schedule 6 Total Metals

DATE RECEIVED: 2016-09-19

DATE REPORTED: 2016-09-26

Parameter	Unit	SAMPLE DESCRIPTION:		5809-1	5809-2	5809-3	5809-4		5809-7	5809-9	
		SAMPLE TYPE:		Water	Water	Water	Water		Water	Water	
		DATE SAMPLED:		9/18/2016	9/18/2016	9/18/2016	9/17/2016		9/17/2016	9/18/2016	
		G / S	RDL	7858203	7858204	7858206	RDL	7858207	RDL	7858210	7858220
Aluminum Total	µg/L	5000	5	50	290	26	5	1720	5	11	85
Antimony Total	µg/L		0.5	<0.5	<0.5	<0.5	0.5	<0.5	0.5	<0.5	<0.5
Arsenic Total	µg/L	100	0.1	0.1	0.4	0.2	0.1	0.8	0.1	0.6	0.2
Barium Total	µg/L		0.5	18.9	16.7	11.6	0.5	6.3	0.5	32.1	13.4
Beryllium Total	µg/L	100	0.05	<0.05	<0.05	<0.05	0.05	0.17	0.05	<0.05	<0.05
Boron Total	µg/L		5	<5	8	<5	5	8	5	103	7
Cadmium Total	µg/L	5	0.01	0.16	0.39	0.06	0.01	1.93	0.01	0.02	0.19
Calcium Total	µg/L		50	29200	53700	24600	250	377000	50	84000	37100
Chromium Total	µg/L		0.5	<0.5	<0.5	<0.5	0.5	0.7	0.5	<0.5	<0.5
Cobalt Total	µg/L	50	0.05	0.40	5.68	0.18	0.05	94.0	0.05	0.44	2.14
Copper Total	µg/L	200	0.5	2.7	26.7	1.8	0.5	64.0	0.5	1.5	7.1
Iron Total	µg/L	5000	10	17	789	45	10	16300	10	322	206
Lead Total	µg/L	200	0.05	<0.05	0.07	<0.05	0.05	1.14	0.05	0.21	<0.05
Lithium Total	µg/L	2500	0.5	0.5	2.5	0.5	0.5	28.8	0.5	<0.5	1.1
Magnesium Total	µg/L		50	4460	6200	2970	50	35900	50	3420	3950
Manganese Total	µg/L	200	1	10	223	8	1	3760	1	188	62
Mercury Total	µg/L	1	0.01	<0.01	0.20	<0.01	0.01	<0.01	0.01	<0.01	<0.01
Molybdenum Total	µg/L		0.1	0.3	0.5	2.6	0.1	2.9	0.1	2.4	4.7
Nickel Total	µg/L	200	0.5	2.8	8.5	0.7	0.5	98.2	0.5	<0.5	3.2
Potassium Total	µg/L		100	203	175	122	100	357	100	510	168
Selenium Total	µg/L		0.5	<0.5	<0.5	<0.5	0.5	<0.5	0.5	<0.5	<0.5
Silver Total	µg/L		0.02	<0.02	<0.02	<0.02	0.02	<0.02	0.02	0.10	<0.02
Sodium Total	µg/L	100	1850	2120	1520	1520	100	6750	100	4470	1650
Thallium Total	µg/L		0.02	<0.02	<0.02	<0.02	0.02	<0.02	0.02	<0.02	<0.02
Titanium Total	µg/L		1	<1	<1	<1	1	2	1	<1	1
Uranium Total	µg/L	10	0.01	0.03	0.11	0.27	0.01	0.12	0.01	1.92	0.39
Vanadium Total	µg/L	100	1	<1	<1	<1	1	<1	1	<1	<1
Zinc Total	µg/L		5	7	31	<5	5	276	5	<5	12
Total Hardness (calc)	ug CaCO3/L		100	91300	160000	73700	100	1090000	100	224000	109000

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 16V139126

PROJECT:

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
<http://www.agatlabs.com>

CLIENT NAME: MISC AGAT CLIENT BC

ATTENTION TO: Mel Rahal

SAMPLING SITE:

SAMPLED BY:

British Columbia CSR - Schedule 6 Total Metals

DATE RECEIVED: 2016-09-19

DATE REPORTED: 2016-09-26

Parameter	Unit	SAMPLE DESCRIPTION: 5809-10				8467-1		8467-3		5809-6	
		SAMPLE TYPE: Water		Water		Water		Water		Water	
		DATE SAMPLED: 9/17/2016		9/17/2016		9/17/2016		9/17/2016		9/17/2016	
		G / S	RDL	7858222	RDL	7858223	7858224	RDL	7858229		
Aluminum Total	µg/L	5000	50	4390	5	27	24	50	14100		
Antimony Total	µg/L		0.5	0.6	0.5	<0.5	<0.5	0.5	0.7		
Arsenic Total	µg/L	100	0.1	0.7	0.1	<0.1	0.2	0.1	1.2		
Barium Total	µg/L		0.5	98.6	0.5	11.5	12.0	0.5	143		
Beryllium Total	µg/L	100	0.05	0.17	0.05	<0.05	<0.05	0.05	0.17		
Boron Total	µg/L		5	53	5	<5	<5	5	11		
Cadmium Total	µg/L	5	0.01	0.17	0.01	0.03	0.03	0.01	0.30		
Calcium Total	µg/L		50	44200	50	22100	22200	50	23400		
Chromium Total	µg/L		0.5	2.7	0.5	<0.5	<0.5	0.5	3.1		
Cobalt Total	µg/L	50	0.05	0.53	0.05	<0.05	0.06	0.05	0.88		
Copper Total	µg/L	200	0.5	9.1	0.5	1.5	1.3	0.5	11.9		
Iron Total	µg/L	5000	10	3700	10	58	41	10	4910		
Lead Total	µg/L	200	0.05	45.3	0.05	<0.05	<0.05	0.05	190		
Lithium Total	µg/L	2500	0.5	4.8	0.5	<0.5	<0.5	0.5	4.0		
Magnesium Total	µg/L		50	2750	50	2380	2270	50	2260		
Manganese Total	µg/L	200	1	295	1	4	3	1	365		
Mercury Total	µg/L	1	0.01	<0.01	0.01	<0.01	<0.01	0.01	<0.01		
Molybdenum Total	µg/L		0.1	27.4	0.1	2.5	2.4	0.1	13.3		
Nickel Total	µg/L	200	0.5	1.5	0.5	<0.5	0.5	0.5	1.3		
Potassium Total	µg/L		100	9330	100	144	135	100	9370		
Selenium Total	µg/L		0.5	0.8	0.5	<0.5	<0.5	0.5	<0.5		
Silver Total	µg/L		0.02	7.88	0.02	0.03	<0.02	0.02	5.43		
Sodium Total	µg/L	100	100	1530	100	1420	1390	100	386		
Thallium Total	µg/L		0.02	0.13	0.02	<0.02	<0.02	0.02	0.22		
Titanium Total	µg/L		1	15	1	1	2	1	30		
Uranium Total	µg/L	10	0.01	1.26	0.01	0.27	0.27	0.01	0.35		
Vanadium Total	µg/L	100	1	5	1	<1	<1	1	9		
Zinc Total	µg/L		5	78	5	<5	<5	5	204		
Total Hardness (calc)	ug CaCO3/L		100	122000	100	65000	64800	100	67700		

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 16V139126

PROJECT:

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
<http://www.agatlabs.com>

CLIENT NAME: MISC AGAT CLIENT BC

ATTENTION TO: Mel Rahal

SAMPLING SITE:

SAMPLED BY:

British Columbia CSR - Schedule 6 Total Metals

DATE RECEIVED: 2016-09-19

DATE REPORTED: 2016-09-26

- Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BCCSR(IW)ug/L(Van)
- 7858203-7858207 Total Mercury sample container inappropriate as per analysis requirements.
Total Mercury, Total Metals sample improperly preserved as per analysis requirements.
Some total metal results are less than the dissolved metal results; results are within the precision of the method.
 - 7858210 Total Mercury sample container inappropriate as per analysis requirements.
Total Mercury, Total Metals sample improperly preserved as per analysis requirements.
Some dissolved metal results are greater than the total metal results; results have been verified.
 - 7858220 Total Mercury sample container inappropriate as per analysis requirements.
Total Mercury, Total Metals sample improperly preserved as per analysis requirements.
Some total metal results are less than the dissolved metal results; results are within the precision of the method.
 - 7858222 Total Mercury sample container inappropriate as per analysis requirements.
Total Mercury, Total Metals sample improperly preserved as per analysis requirements.
 - 7858223-7858229 Total Mercury sample container inappropriate as per analysis requirements.
Total Mercury, Total Metals sample improperly preserved as per analysis requirements.
Some total metal results are less than the dissolved metal results; results are within the precision of the method.

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 16V139126

PROJECT:

Unit 120, 8600 Glenlyon Parkway
 Burnaby, British Columbia
 CANADA V5J 0B6
 TEL (778)452-4000
 FAX (778)452-4074
<http://www.agatlabs.com>

CLIENT NAME: MISC AGAT CLIENT BC

ATTENTION TO: Mel Rahal

SAMPLING SITE:

SAMPLED BY:

British Columbia CSR- Schedule 6 Dissolved Metals

DATE RECEIVED: 2016-09-19

DATE REPORTED: 2016-09-26

Parameter	Unit	SAMPLE DESCRIPTION:		5809-1	5809-2	5809-3	5809-4		5809-7	5809-9	
		SAMPLE TYPE:		Water	Water	Water	Water		Water	Water	
		DATE SAMPLED:		9/18/2016	9/18/2016	9/18/2016	9/17/2016		9/17/2016	9/18/2016	
		G / S	RDL	7858203	7858204	7858206	RDL	7858207	RDL	7858210	7858220
Aluminum Dissolved	µg/L	5000	2	29	19	11	2	22	2	82	15
Antimony Dissolved	µg/L		0.2	<0.2	<0.2	<0.2	0.2	<0.2	0.2	<0.2	0.2
Arsenic Dissolved	µg/L	100	0.1	0.2	<0.1	0.1	0.1	0.3	0.1	0.8	0.1
Barium Dissolved	µg/L		0.2	18.1	16.8	11.7	0.2	7.0	0.2	32.0	12.0
Beryllium Dissolved	µg/L	100	0.01	<0.01	0.01	<0.01	0.01	0.02	0.01	<0.01	<0.01
Boron Dissolved	µg/L		2	4	8	5	2	10	2	92	9
Cadmium Dissolved	µg/L	5	0.01	0.15	0.31	0.04	0.01	1.66	0.01	0.03	0.18
Calcium Dissolved	µg/L		50	28700	51200	22700	250	390000	50	77600	36100
Chromium Dissolved	µg/L		0.5	<0.5	<0.5	<0.5	0.5	<0.5	0.5	<0.5	<0.5
Cobalt Dissolved	µg/L	50	0.05	0.42	5.92	0.12	0.05	96.4	0.05	0.47	1.85
Copper Dissolved	µg/L	200	0.2	0.8	1.9	1.0	0.2	3.2	0.2	1.3	2.0
Iron Dissolved	µg/L	5000	10	11	12	<10	10	6620	10	166	21
Lead Dissolved	µg/L	200	0.05	0.14	0.13	0.11	0.05	0.52	0.05	3.53	0.11
Lithium Dissolved	µg/L	2500	0.5	0.6	2.3	0.7	0.5	27.6	0.5	<0.5	1.0
Magnesium Dissolved	µg/L		50	4250	5910	2690	50	33500	50	3080	3680
Manganese Dissolved	µg/L	200	1	12	211	7	1	3600	1	179	61
Mercury Dissolved	µg/L	1	0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.01	<0.01	<0.01
Molybdenum Dissolved	µg/L		0.05	0.22	0.47	2.32	0.05	2.27	0.05	2.55	4.55
Nickel Dissolved	µg/L	200	0.2	2.1	8.4	0.6	0.2	89.9	0.2	0.8	3.1
Potassium Dissolved	µg/L		50	202	194	105	50	328	50	584	168
Selenium Dissolved	µg/L		0.5	<0.5	<0.5	<0.5	0.5	<0.5	0.5	<0.5	<0.5
Silver Dissolved	µg/L		0.02	<0.02	<0.02	<0.02	0.02	<0.02	0.02	0.06	<0.02
Sodium Dissolved	µg/L		50	1812	2032	1442	50	6382	50	4152	1572
Thallium Dissolved	µg/L		0.01	0.02	<0.01	<0.01	0.01	0.01	0.01	0.01	<0.01
Titanium Dissolved	µg/L		0.5	0.9	1.2	0.8	0.5	2.2	0.5	0.8	1.3
Uranium Dissolved	µg/L	10	0.01	0.04	0.09	0.25	0.01	0.10	0.01	1.82	0.37
Vanadium Dissolved	µg/L	100	0.5	<0.5	<0.5	<0.5	0.5	<0.5	0.5	<0.5	<0.5
Zinc Dissolved	µg/L		2	6	19	2	2	257	2	7	12
Hardness (calc)	ug CaCO3/L		100	89200	152000	67800	100	1110000	100	206000	105000

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 16V139126

PROJECT:

Unit 120, 8600 Glenlyon Parkway
 Burnaby, British Columbia
 CANADA V5J 0B6
 TEL (778)452-4000
 FAX (778)452-4074
<http://www.agatlabs.com>

CLIENT NAME: MISC AGAT CLIENT BC

ATTENTION TO: Mel Rahal

SAMPLING SITE:

SAMPLED BY:

British Columbia CSR- Schedule 6 Dissolved Metals

DATE RECEIVED: 2016-09-19

DATE REPORTED: 2016-09-26

Parameter	Unit	SAMPLE DESCRIPTION:		5809-10	8467-1	8467-3	5809-6
		G / S	RDL	7858222	7858223	7858224	7858229
Aluminum Dissolved	µg/L	5000	2	20	12	20	155
Antimony Dissolved	µg/L		0.2	0.6	<0.2	<0.2	0.6
Arsenic Dissolved	µg/L	100	0.1	0.1	0.3	0.1	<0.1
Barium Dissolved	µg/L		0.2	24.2	11.5	12.2	28.1
Beryllium Dissolved	µg/L	100	0.01	<0.01	<0.01	<0.01	0.02
Boron Dissolved	µg/L		2	53	5	3	12
Cadmium Dissolved	µg/L	5	0.01	0.03	0.04	0.04	0.10
Calcium Dissolved	µg/L		50	38800	21300	21800	21400
Chromium Dissolved	µg/L		0.5	<0.5	<0.5	<0.5	<0.5
Cobalt Dissolved	µg/L	50	0.05	0.06	0.06	0.06	0.30
Copper Dissolved	µg/L	200	0.2	1.9	1.2	1.4	4.4
Iron Dissolved	µg/L	5000	10	22	25	30	217
Lead Dissolved	µg/L	200	0.05	0.68	0.48	0.59	15.9
Lithium Dissolved	µg/L	2500	0.5	2.5	<0.5	0.6	1.2
Magnesium Dissolved	µg/L		50	1400	2190	2160	276
Manganese Dissolved	µg/L	200	1	17	6	7	69
Mercury Dissolved	µg/L	1	0.01	<0.01	<0.01	<0.01	<0.01
Molybdenum Dissolved	µg/L		0.05	26.4	2.44	2.37	11.6
Nickel Dissolved	µg/L	200	0.2	<0.2	0.6	0.7	0.9
Potassium Dissolved	µg/L		50	6510	154	152	1850
Selenium Dissolved	µg/L		0.5	0.6	<0.5	<0.5	<0.5
Silver Dissolved	µg/L		0.02	0.21	<0.02	<0.02	0.51
Sodium Dissolved	µg/L		50	1282	1332	1332	419
Thallium Dissolved	µg/L		0.01	0.02	<0.01	<0.01	<0.01
Titanium Dissolved	µg/L		0.5	0.6	1.2	1.3	2.7
Uranium Dissolved	µg/L	10	0.01	1.17	0.26	0.26	0.19
Vanadium Dissolved	µg/L	100	0.5	<0.5	<0.5	<0.5	<0.5
Zinc Dissolved	µg/L		2	4	5	6	29
Hardness (calc)	ug CaCO3/L		100	103000	62200	63300	54600

Certified By:



AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 16V139126

PROJECT:

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
<http://www.agatlabs.com>

CLIENT NAME: MISC AGAT CLIENT BC

ATTENTION TO: Mel Rahal

SAMPLING SITE:

SAMPLED BY:

British Columbia CSR- Schedule 6 Dissolved Metals

DATE RECEIVED: 2016-09-19

DATE REPORTED: 2016-09-26

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BCCSR(1W)ug/L(Van)

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 16V139126

PROJECT:

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CLIENT NAME: MISC AGAT CLIENT BC

ATTENTION TO: Mel Rahal

SAMPLING SITE:

SAMPLED BY:

Cyanide Weak Acid Dissociable (WAD)

DATE RECEIVED: 2016-09-19

DATE REPORTED: 2016-09-28

Parameter	Unit	SAMPLE DESCRIPTION:		5809-1	5809-3	5809-7	5809-9	5809-6
		G / S	RDL	7858203	7858206	7858210	7858220	7858229
Cyanide (WAD)	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.014

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BCCSR(IW)mg/L(Van)

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 16V139126

PROJECT:

Unit 120, 8600 Glenlyon Parkway
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CLIENT NAME: MISC AGAT CLIENT BC

ATTENTION TO: Mel Rahal

SAMPLING SITE:

SAMPLED BY:

Cyanide, Strong Acid Dissociable (SAD)

DATE RECEIVED: 2016-09-19

DATE REPORTED: 2016-09-28

Parameter	Unit	SAMPLE DESCRIPTION:		5809-1	5809-3	5809-7	5809-9	5809-6
		G / S	RDL	7858203	7858206	7858210	7858220	7858229
Cyanide (SAD)	mg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.044

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BCCSR(IW)mg/L(Van)

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 16V139126

PROJECT:

Unit 120, 8600 Glenlyon Parkway
 Burnaby, British Columbia
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 TEL (778)452-4000
 FAX (778)452-4074
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CLIENT NAME: MISC AGAT CLIENT BC

ATTENTION TO: Mel Rahal

SAMPLING SITE:

SAMPLED BY:

Physical Tests Package

DATE RECEIVED: 2016-09-19

DATE REPORTED: 2016-09-23

Parameter	Unit	SAMPLE DESCRIPTION:		5809-1	5809-2	5809-3	5809-4	5809-7	5809-9	8467-1	8467-3
		SAMPLE TYPE:		Water	Water	Water	Water	Water	Water	Water	Water
		DATE SAMPLED:		9/18/2016	9/18/2016	9/18/2016	9/17/2016	9/17/2016	9/18/2016	9/17/2016	9/17/2016
		G / S	RDL	7858203	7858204	7858206	7858207	7858210	7858220	7858223	7858224
pH	pH units	0.01	7.27	7.32	7.52	7.22	7.92	7.57	7.54	7.58	
Electrical Conductivity	uS/cm	1	213	351	165	1780	443	245	148	147	
Total Suspended Solids	mg/L	2	<2	<2	<2	42	<2	<2	2	<2	
Alkalinity (pH 4.5)	mg CaCO3/L	1	18	27	34	83	163	40	37	40	
Alkalinity, Bicarbonate	mg CaCO3/L	1	18	27	34	83	163	40	37	40	
Alkalinity, Carbonate	mg CaCO3/L	1	<1	<1	<1	<1	<1	<1	<1	<1	
Alkalinity, Hydroxide	mg CaCO3/L	1	<1	<1	<1	<1	<1	<1	<1	<1	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BCCSR(IW)mg/L(Van)

7858203-7858224 Literature holding time exceeded for pH analysis.

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 16V139126

PROJECT:

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
FAX (778)452-4074
<http://www.agatlabs.com>

CLIENT NAME: MISC AGAT CLIENT BC

ATTENTION TO: Mel Rahal

SAMPLING SITE:

SAMPLED BY:

Physical Tests Package

DATE RECEIVED: 2016-09-19

DATE REPORTED: 2016-09-22

Parameter	Unit	SAMPLE DESCRIPTION:		DATE SAMPLED:	
		G / S	RDL	G / S	RDL
		5809-10	5809-6	9/17/2016	9/17/2016
				7858222	7858229
		SAMPLE TYPE: Water			
pH	pH units	0.01	7.77	7.84	
Electrical Conductivity	uS/cm	1	263	129	
Alkalinity (pH 4.5)	mg CaCO3/L	1	49	41	
Alkalinity, Bicarbonate	mg CaCO3/L	1	49	41	
Alkalinity, Carbonate	mg CaCO3/L	1	<1	<1	
Alkalinity, Hydroxide	mg CaCO3/L	1	<1	<1	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BCCSR(IW)mg/L(Van)
7858222-7858229 Literature holding time exceeded for pH analysis.

Certified By:



Certificate of Analysis

AGAT WORK ORDER: 16V139126

PROJECT:

Unit 120, 8600 Glenlyon Parkway
Burnaby, British Columbia
CANADA V5J 0B6
TEL (778)452-4000
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<http://www.agatlabs.com>

CLIENT NAME: MISC AGAT CLIENT BC

ATTENTION TO: Mel Rahal

SAMPLING SITE:

SAMPLED BY:

Sulphate in Water

DATE RECEIVED: 2016-09-19

DATE REPORTED: 2016-09-19

SAMPLE DESCRIPTION: 5809-7

SAMPLE TYPE: Water

DATE SAMPLED: 9/17/2016

Parameter	Unit	G / S	RDL	7858210
Sulphate	mg/L	0.5	72.1	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard: Refers to BCCSR(IW)mg/L(Van)

Certified By:

Quality Assurance

CLIENT NAME: MISC AGAT CLIENT BC

AGAT WORK ORDER: 16V139126

PROJECT:

ATTENTION TO: Mel Rahal

SAMPLING SITE:

SAMPLED BY:

Water Analysis															
RPT Date:			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Measured Value		Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

Biochemical Oxygen Demand														
BOD (5 day)	7854390		189	185	1.9%	< 4	91%	70%	130%	87%	85%	115%		

Comments: RPDs are calculated using raw analytical data and not the rounded duplicate values reported.

British Columbia CSR- Schedule 6 Dissolved Metals

Aluminum Dissolved	7858203		29	30	2.3%	< 2	97%	90%	110%	101%	90%	110%		
Antimony Dissolved	7858203		<0.2	<0.2	NA	< 0.2	99%	90%	110%	93%	90%	110%		
Arsenic Dissolved	7858203		0.2	<0.1	NA	< 0.1	102%	90%	110%	99%	90%	110%		
Barium Dissolved	7858203		18.1	18.5	2.4%	< 0.2	96%	90%	110%	98%	90%	110%		
Beryllium Dissolved	7858203		<0.01	0.01	NA	< 0.01	93%	90%	110%	97%	90%	110%		
Boron Dissolved	7858203		4	5	NA	< 2	97%	90%	110%	104%	90%	110%		
Cadmium Dissolved	7858203		0.15	0.17	10.6%	< 0.01	97%	90%	110%	105%	90%	110%		
Calcium Dissolved	7858203		28700	28700	0.0%	< 50	99%	90%	110%	100%	90%	110%		
Chromium Dissolved	7858203		<0.5	<0.5	NA	< 0.5	96%	90%	110%	96%	90%	110%		
Cobalt Dissolved	7858203		0.42	0.35	17.7%	< 0.05	93%	90%	110%	98%	90%	110%		
Copper Dissolved	7858203		0.8	0.7	NA	< 0.2	94%	90%	110%	101%	90%	110%		
Iron Dissolved	7858203		11	10	NA	< 10	95%	90%	110%	105%	90%	110%		
Lead Dissolved	7858203		0.14	0.14	NA	< 0.05	97%	90%	110%	105%	90%	110%		
Lithium Dissolved	7858203		0.6	0.7	NA	< 0.5				102%	90%	110%		
Magnesium Dissolved	7858203		4250	4270	0.4%	< 50	101%	90%	110%	106%	90%	110%		
Manganese Dissolved	7858203		12	12	0.8%	< 1	101%	90%	110%	104%	90%	110%		
Mercury Dissolved	7866649		<0.01	<0.01	NA	< 0.01	97%	90%	110%	105%	90%	110%		
Molybdenum Dissolved	7858203		0.22	0.22	NA	< 0.05	94%	90%	110%	104%	90%	110%		
Nickel Dissolved	7858203		2.1	2.1	1.8%	< 0.2	100%	90%	110%	104%	90%	110%		
Potassium Dissolved	7858203		202	203	NA	< 50	97%	90%	110%	96%	90%	110%		
Selenium Dissolved	7858203		<0.5	<0.5	NA	< 0.5	105%	90%	110%	99%	90%	110%		
Silver Dissolved	7858203		<0.02	<0.02	NA	< 0.02				98%	90%	110%		
Sodium Dissolved	7858203		2310	2300	0.8%	< 50	99%	90%	110%	100%	90%	110%		
Thallium Dissolved	7858203		0.02	0.02	NA	< 0.01	96%	90%	110%	102%	90%	110%		
Titanium Dissolved	7858203		0.9	0.9	NA	< 0.5				104%	90%	110%		
Uranium Dissolved	7858203		0.04	0.03	NA	< 0.01	94%	90%	110%	105%	90%	110%		
Vanadium Dissolved	7858203		<0.5	<0.5	NA	< 0.5	97%	90%	110%	93%	90%	110%		
Zinc Dissolved	7858203		6	5	NA	< 2	93%	90%	110%	102%	90%	110%		

Comments: RPDs are calculated using raw analytical data and not the rounded duplicate values reported.

British Columbia CSR - Schedule 6 Total Metals

Aluminum Total	7859659		213	223	4.9%	< 5	95%	85%	115%	104%	90%	110%		
Antimony Total	7859659		<0.5	<0.5	NA	< 0.5	114%	85%	115%	107%	90%	110%		
Arsenic Total	7859659		0.1	<0.1	NA	< 0.1	92%	85%	115%	97%	90%	110%		
Barium Total	7859659		13.3	13.6	1.9%	< 0.5	108%	85%	115%	103%	90%	110%		

Quality Assurance

CLIENT NAME: MISC AGAT CLIENT BC

AGAT WORK ORDER: 16V139126

PROJECT:

ATTENTION TO: Mel Rahal

SAMPLING SITE:

SAMPLED BY:

Water Analysis (Continued)

RPT Date:		DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE			
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Beryllium Total	7859659		<0.05	<0.05	NA	< 0.05	100%	85%	115%	100%	90%	110%			
Boron Total	7859659		<5	<5	NA	< 5	101%	85%	115%	105%	90%	110%			
Cadmium Total	7859659		<0.01	<0.01	NA	< 0.01	106%	85%	115%	110%	90%	110%			
Calcium Total	7859659		5070	5040	0.5%	< 50	100%	85%	115%	104%	90%	110%			
Chromium Total	7859659		<0.5	<0.5	NA	< 0.5	104%	85%	115%	106%	90%	110%			
Cobalt Total	7859659		0.11	0.12	NA	< 0.05	89%	85%	115%	96%	90%	110%			
Copper Total	7859659		1.4	1.1	NA	< 0.5	100%	85%	115%	102%	90%	110%			
Iron Total	7859659		280	289	3.3%	< 10	107%	85%	115%	105%	90%	110%			
Lead Total	7859659		<0.05	<0.05	NA	< 0.05	105%	85%	115%	107%	90%	110%			
Lithium Total	7859659		<0.5	<0.5	NA	< 0.5				96%	90%	110%			
Magnesium Total	7859659		661	653	1.2%	< 50	104%	85%	115%	105%	90%	110%			
Manganese Total	7859659		11	11	2.2%	< 1	103%	85%	115%	100%	90%	110%			
Mercury Total	7866649		<0.01	<0.01	NA	< 0.01	92%	85%	115%	96%	90%	110%			
Molybdenum Total	7859659		0.6	0.6	1.0%	< 0.1	96%	85%	115%	107%	90%	110%			
Nickel Total	7859659		<0.5	<0.5	NA	< 0.5	97%	85%	115%	98%	90%	110%			
Potassium Total	7859659		523	471	NA	< 100	98%	85%	115%	95%	90%	110%			
Selenium Total	7859659		<0.5	<0.5	NA	< 0.5	100%	85%	115%	93%	90%	110%			
Silver Total	7859659		<0.02	<0.02	NA	< 0.02				103%	90%	110%			
Sodium Total	7859659		1100	1100	0.3%	< 100	101%	85%	115%	98%	90%	110%			
Thallium Total	7859659		<0.02	<0.02	NA	< 0.02	101%	85%	115%	101%	90%	110%			
Titanium Total	7859659		11	12	8.0%	< 1				105%	90%	110%			
Uranium Total	7859659		0.07	0.07	0.2%	< 0.01	100%	85%	115%	103%	90%	110%			
Vanadium Total	7859659		1	2	NA	< 1	107%	85%	115%	101%	90%	110%			
Zinc Total	7859659		<5	<5	NA	< 5	94%	85%	115%	103%	90%	110%			

Comments: RPDs are calculated using raw analytical data and not the rounded duplicate values reported.

Cyanide Weak Acid Dissociable (WAD)

Cyanide (WAD)	7847734		< 0.002	< 0.002	NA	< 0.002	109%	80%	120%	105%	80%	120%	96%	80%	120%
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Comments: RPDs are calculated using raw analytical data and not the rounded duplicate values reported.

Cyanide, Strong Acid Dissociable (SAD)

Cyanide (SAD)	7858203		< 0.002	< 0.002	NA	< 0.002	108%	85%	115%	108%	90%	110%	98%	80%	120%
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Comments: RPDs are calculated using raw analytical data and not the rounded duplicate values reported.

Anions and Nutrients

Chloride	7857945		0.18	0.18	NA	< 0.05	103%	90%	110%	95%	90%	110%		
Nitrate-N	7857945		0.063	0.062	0.6%	< 0.005	99%	90%	110%	98%	90%	110%		
Nitrite-N	7857945		<0.005	<0.005	NA	< 0.005				109%	90%	110%		
Sulphate	7857945		85.6	85.9	0.4%	< 0.5	96%	90%	110%	98%	90%	110%		
Ammonia-N	7861612		0.03	0.03	NA	< 0.01	108%	85%	115%	104%	90%	110%		

Quality Assurance

CLIENT NAME: MISC AGAT CLIENT BC

AGAT WORK ORDER: 16V139126

PROJECT:

ATTENTION TO: Mel Rahal

SAMPLING SITE:

SAMPLED BY:

Water Analysis (Continued)

RPT Date:		DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Ortho-Phosphate	7847734		0.002	0.002	NA	< 0.001	107%	85%	115%	97%	90%	110%	100%	80%	120%
Phosphorus Total	7857923		0.006	0.006	NA	< 0.005	99%	85%	115%	99%	90%	110%	88%	80%	120%

Comments: RPDs are calculated using raw analytical data and not the rounded duplicate values reported.

Physical Tests Package

pH	7858204		7.32	7.37	0.7%	< 0.01	100%	95%	105%						
Electrical Conductivity	7858204		351	349	0.6%	< 1	100%	90%	110%						
Total Suspended Solids	7858207		42	42	1.9%	< 2				88%	80%	120%			
Alkalinity (pH 4.5)	7858204		27	30	9.5%	< 1	96%	90%	110%						

Comments: RPDs are calculated using raw analytical data and not the rounded duplicate values reported.

British Columbia CSR - Schedule 6 Total Metals

Aluminum Total	7867736		29	28	1.5%	< 5	96%	85%	115%	92%	90%	110%			
Antimony Total	7867736		1.0	1.0	NA	< 0.5	114%	85%	115%	101%	90%	110%			
Arsenic Total	7867736		0.4	0.4	NA	< 0.1	106%	85%	115%	101%	90%	110%			
Barium Total	7867736		56.9	57.1	0.4%	< 0.5	110%	85%	115%	105%	90%	110%			
Beryllium Total	7867736		<0.05	<0.05	NA	< 0.05	97%	85%	115%	98%	90%	110%			
Boron Total	7867736		17	16	NA	< 5	99%	85%	115%	99%	90%	110%			
Cadmium Total	7867736		0.35	0.35	1.4%	< 0.01	104%	85%	115%	103%	90%	110%			
Calcium Total	7867736		265000	267000	0.6%	< 50	97%	85%	115%	102%	90%	110%			
Chromium Total	7867736		<0.5	<0.5	NA	< 0.5	101%	85%	115%	98%	90%	110%			
Cobalt Total	7867736		0.85	0.86	0.5%	< 0.05	108%	85%	115%	102%	90%	110%			
Copper Total	7867736		1.4	1.0	NA	< 0.5	106%	85%	115%	99%	90%	110%			
Iron Total	7867736		20	20	NA	< 10	103%	85%	115%	103%	90%	110%			
Lead Total	7867736		<0.05	<0.05	NA	< 0.05	104%	85%	115%	100%	90%	110%			
Lithium Total	7867736		21.9	21.4	2.2%	< 0.5				108%	90%	110%			
Magnesium Total	7867736		144000	145000	0.7%	< 50	103%	85%	115%	104%	90%	110%			
Manganese Total	7867736		10	10	0.0%	< 1	101%	85%	115%	100%	90%	110%			
Molybdenum Total	7867736		7.1	7.3	2.8%	< 0.1	105%	85%	115%	105%	90%	110%			
Nickel Total	7867736		54.4	55.4	1.9%	< 0.5	110%	85%	115%	101%	90%	110%			
Potassium Total	7867736		3300	3300	0.7%	< 100	98%	85%	115%	94%	90%	110%			
Selenium Total	7867736		111	110	1.3%	< 0.5	97%	85%	115%	107%	90%	110%			
Silver Total	7867736		0.03	0.02	NA	< 0.02				102%	90%	110%			
Sodium Total	7867736		7400	7400	0.6%	< 100	101%	85%	115%	94%	90%	110%			
Thallium Total	7867736		0.04	0.03	NA	< 0.02	106%	85%	115%	100%	90%	110%			
Titanium Total	7867736		1	1	NA	< 1				105%	90%	110%			
Uranium Total	7867736		13.7	13.6	0.6%	< 0.01	105%	85%	115%	104%	90%	110%			
Vanadium Total	7867736		<1	<1	NA	< 1	103%	85%	115%	101%	90%	110%			
Zinc Total	7867736		19	19	NA	< 5	103%	85%	115%	105%	90%	110%			



Quality Assurance

CLIENT NAME: MISC AGAT CLIENT BC
 PROJECT:
 SAMPLING SITE:

AGAT WORK ORDER: 16V139126
 ATTENTION TO: Mel Rahal
 SAMPLED BY:

Water Analysis (Continued)

RPT Date:			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE		MATRIX SPIKE				
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

Comments: RPDs are calculated using raw analytical data and not the rounded duplicate values reported.

Certified By: _____





Method Summary

CLIENT NAME: MISC AGAT CLIENT BC

AGAT WORK ORDER: 16V139126

PROJECT:

ATTENTION TO: Mel Rahal

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Microbiology Analysis Escherichia Coli (E.coli)	MIC-181-7004	SM 9223B	INCUBATOR

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PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Water Analysis			
Chloride	INOR-181-6002	Modified from SM 4110 B	ION CHROMATOGRAPH
Sulphate	INOR-181-6002	Modified from SM 4110 B	ION CHROMATOGRAPH
Nitrate-N	INOR-181-6002	Modified from SM 4110 B	ION CHROMATOGRAPH
Nitrite-N	INOR-181-6002	Modified from SM 4110 B	ION CHROMATOGRAPH
Ammonia-N	INOR-181-6001	Modified from SM 4500-NH3 G	CONTINUOUS FLOW ANALYZER
Ortho-Phosphate	INOR-181-6021	Modified from SM 4500-P E	SPECTROPHOTOMETER
Phosphorus Total	INOR-181-6011	Modified from SM 4500-P B&E	SPECTROPHOTOMETER
BOD (5 day)	INOR-181-6032	Modified from SM 5210 B	PC TITRATE
Aluminum Total	MET-181-6102, LAB-181-4009	Modified from SM 3125 B	ICP-MS
Antimony Total	MET-181-6102, LAB-181-4009	Modified from SM 3125 B	ICP-MS
Arsenic Total	MET-181-6102, LAB-181-4009	Modified from SM 3125 B	ICP-MS
Barium Total	MET-181-6102, LAB-181-4009	Modified from SM 3125 B	ICP-MS
Beryllium Total	MET-181-6102, LAB-181-4009	Modified from SM 3125 B	ICP-MS
Boron Total	MET-181-6102, LAB-181-4009	Modified from SM 3125 B	ICP-MS
Cadmium Total	MET-181-6102, LAB-181-4009	Modified from SM 3125 B	ICP-MS
Calcium Total	MET-181-6101, LAB-181-4009	Modified from SM 3120 B	ICP/OES
Chromium Total	MET-181-6102, LAB-181-4009	Modified from SM 3125 B	ICP-MS
Cobalt Total	MET-181-6102, LAB-181-4009	Modified from SM 3125 B	ICP-MS
Copper Total	MET-181-6102, LAB-181-4009	Modified from SM 3125 B	ICP-MS
Iron Total	MET-181-6101, LAB-181-4009	Modified from SM 3120 B	ICP/OES
Lead Total	MET-181-6102, LAB-181-4009	Modified from SM 3125 B	ICP-MS
Lithium Total	MET-181-6102, LAB-181-4009	Modified from SM 3125 B	ICP-MS
Magnesium Total	MET-181-6101, LAB-181-4009	Modified from SM 3120 B	ICP/OES
Manganese Total	MET-181-6101, LAB-181-4009	Modified from SM 3120 B	ICP/OES
Mercury Total	MET-181-6103	Modified from EPA 245.7	CV/AA
Molybdenum Total	MET-181-6102, LAB-181-4009	Modified from SM 3125 B	ICP-MS
Nickel Total	MET-181-6102, LAB-181-4009	Modified from SM 3125 B	ICP-MS
Potassium Total	MET-181-6101, LAB-181-4009	Modified from SM 3120 B	ICP/OES
Selenium Total	MET-181-6102, LAB-181-4009	Modified from SM 3125 B	ICP-MS
Silver Total	MET-181-6102, LAB-181-4009	Modified from SM 3125 B	ICP-MS
Sodium Total	MET-181-6101, LAB-181-4009	Modified from SM 3120 B	ICP/OES



Method Summary

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AGAT WORK ORDER: 16V139126

PROJECT:

ATTENTION TO: Mel Rahal

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Thallium Total	MET-181-6102, LAB-181-4009	Modified from SM 3125 B	ICP-MS
Titanium Total	MET-181-6102, LAB-181-4009	Modified from SM 3125 B	ICP-MS
Uranium Total	MET-181-6102, LAB-181-4009	Modified from SM 3125 B	ICP-MS
Vanadium Total	MET-181-6102, LAB-181-4009	Modified from SM 3125 B	ICP-MS
Zinc Total	MET-181-6102, LAB-181-4009	Modified from SM 3125 B	ICP-MS
Aluminum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Antimony Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Arsenic Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Barium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Beryllium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Boron Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cadmium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Calcium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Chromium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cobalt Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Copper Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Iron Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Lead Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Lithium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Magnesium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Manganese Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Mercury Dissolved	MET-181-6103, LAB-181-4015	Modified from EPA 245.7	CV/AA
Molybdenum Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Nickel Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Potassium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES
Selenium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Silver Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Sodium Dissolved	MET-181-6101, LAB-181-4015	Modified from SM 3120 B	ICP/OES



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SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Thallium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Titanium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Uranium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Vanadium Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Zinc Dissolved	MET-181-6102, LAB-181-4015	Modified from SM 3125 B	ICP-MS
Cyanide (WAD)	INST 0310	EPA 335.3	CONTINUOUS FLOW ANALYZER
Cyanide (SAD)	INOR-181-6010	EPA 335.3	CONTINUOUS FLOW ANALYZER
pH	INOR-181-6000	Modified from SM 4500-H+	PH METER
Electrical Conductivity	INOR-181-6000	Modified from SM 2510 B	PC TITRATE
Total Suspended Solids	INOR-181-6007	SM 2540 C, D & E	GRAVIMETRIC
Alkalinity (pH 4.5)	INOR-181-6000	Modified from SM 2320 B	PC TITRATE
Alkalinity, Bicarbonate	INOR-181-6000	Modified from SM 2320 B	PC TITRATE
Alkalinity, Carbonate	INOR-181-6000	Modified from SM 2320 B	PC TITRATE
Alkalinity, Hydroxide	INOR-181-6000	Modified from SM 2320 B	PC TITRATE



Laboratory Use Only

Arrival Temperature: 10°C
AGAT Job Number: 16V139126

Notes: SEP 19 PM 1:07

Chain of Custody Record

Report Information

Company: Sable Resources Ltd
Contact: Mel Rahal
Address: 355 Montroyal Blvd
N. Van V7N 4G3
Phone: 604 986 8566 Fax: _____
AGAT Quote #: _____
Client Project #: _____

Report Information

1. Name: Joel Gillham
Email: joel.gillham@gmail.com
2. Name: Mel Rahal
Email: m.r@sableresources.com

Report Format

Single Sample per page
 Multiple Samples per page
 Excel Format Included

Turnaround Time Required (TAT)

Regular TAT 5 to 7 working days
Rush TAT Day 2 - 100%
 Day 3 - 50%
 Day 4 - 25%

Date Required: _____
PLEASE CONTACT LABORATORY IF RUSH REQUIRED SAMPLE SUBMISSION CUT OFF FOR EFFECTIVE DATE BY 3 PM

Invoice To

Same as above Yes / No

Company: _____
Contact: _____
Address: _____
Phone: _____ Fax: _____
PO/AFE#: _____

Requirements (Please Check)

BC CSR Soil BC CSR - Water
 AL DW
 IL AW
 PL W
 CL LW
 RL

Schedule 11 (Please Specify) _____

CCME (Please Specify) _____

Other (Please Specify) _____

Cyanide	Total + WAD	Ammonia, Nitrate, Nitrite	Total Phosphorus + Ortho P	Chloride	Sulphate	E-Coli	BOD 5d-y	pH, Sp. Cond, Total Alk, + Hardness	Total Susp Solids	Total Metals	Dissolved Metals	NUMBER OF CONTAINERS	PRESERVED (Y/N)	HAZARDOUS (Y/N)	Hold for: <input type="checkbox"/> 60 DAYS
X	X	X	X	X	X	X	X	X	X	X	X	7	Y	N	N
		X	X	X	X	X	X	X	X	X	X	6	Y	N	N
X	X	X	X	X	X	X	X	X	X	X	X	6	Y	N	N
			X	X				X	X	X	X	3	Y	N	N
X				X				X	X	X	X	4	Y	N	N
X	X	X	X	X	X	X	X	X	X	X	X	6	Y	N	N
								X	X	X	X	3	Y	N	N
	X	X	X					X	X	X	X	4			
X	X	X	X					X	X	X	X	4			

LABORATORY USE (LAB ID #)	SAMPLE IDENTIFICATION	SAMPLE MATRIX	DATE/TIME SAMPLED	COMMENTS - SITE SAMPLE INFO. SAMPLE CONTAINMENT
<u>1858203</u>	<u>5809-1</u>		<u>Sep 18</u>	
<u>204</u>	<u>5809-2</u>		<u>Sep 18</u>	
<u>206</u>	<u>5809-3</u>		<u>Sep 17/18</u>	
<u>207</u>	<u>5809-4</u>		<u>Sep 17</u>	
<u>210</u>	<u>5809-7</u>		<u>Sep 17</u>	
<u>220</u>	<u>5809-9</u>		<u>Sep 18</u>	
<u>222</u>	<u>5809-10</u>		<u>Sep 17</u>	
<u>223</u>	<u>8467-1</u>		<u>Sep 17</u>	
<u>224</u>	<u>8467-3</u>		<u>Sep 17</u>	

Samples Relinquished By (Print Name and Sign): _____ Date/Time: _____	Samples Received By (Print Name and Sign): <u>Matthew Wang</u> Date/Time: <u>Sep 19, 16</u>	Page <u>1</u> of <u>1</u>
Samples Relinquished By (Print Name and Sign): _____ Date/Time: _____	Samples Received By (Print Name and Sign): _____ Date/Time: _____	Nº: 020773
Samples Relinquished By (Print Name and Sign): _____ Date/Time: _____	Samples Received By (Print Name and Sign): _____ Date/Time: _____	



AGAT Laboratories

SAMPLE INTEGRITY RECEIPT FORM - BURNABY

Work Order # 16V139126

RECEIVING BASICS:

Received From: Client Waybill #: _____

SAMPLE QUANTITIES:

Coolers: 1 Containers: _____

TIME SENSITIVE ISSUES:

Earliest Date Sampled: 17-SEP-16 ALREADY EXCEEDED? Yes No

NON-CONFORMANCES:

3 temperatures of samples* and average of each cooler: (record differing temperatures on the CoC next to sample ID's) *use jars when available

(1) 9 + 10 + 11 = 10 °C (2) 10 + 10 + 10 = 10 °C (3) ___ + ___ + ___ = ___ °C (4) ___ + ___ + ___ = ___ °C

Was ice or ice pack present: Yes No

Integrity Issues:

Total metals incorrectly preserved
Total Mercury incorrectly preserved and submitted
using incorrect container

Account Project Manager: Maggiè have they been notified of the above issues: Yes No

Whom spoken to: _____ Date and Time: _____

ADDITIONAL NOTES:

5809-6 received but not listed on CoC